

**The Effect of Cardiovascular Reactivity and Negative Affect On The Responsibility
Attributions of Hostile Men to Provocative Partner Behavior**

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(ABSTRACT)

This study investigated the roles of negative affect and cardiovascular reactivity on the attributional responding of hostile males. College males were screened with the Cook-Medley Hostility Scale (Cook & Medley, 1954). High and low hostile males were assigned to an arousal inducing (serial subtraction by 7's) or a non-arousal inducing condition (serial subtraction by 1's). Cardiovascular reactivity and self-report of affect were measured to the serial subtraction task. After the task was completed, the participant listened to a vignette (provocative or neutral) which depicted an interpersonal situation. The participant answered questions about the scene to assess attributional responding. The arousal-inducing condition was associated with significantly greater changes in systolic and diastolic blood pressure and heart rate and a higher level of self-reported negative affect than the non-arousal inducing condition. More negative attributions were reported for provocative than neutral scenes. Males in the arousal inducing condition made more negative attributions to neutral scenes than males in the non-arousal condition. There was no significant effect of arousal condition on the negative attributions to provocative scenes. Hostility did not influence the relationship between arousal condition and self-reported affect or arousal condition and attributional responding. This study showed that inducing cardiovascular reactivity prior to a neutral encounter with a partner can affect the males' perception of the potentially neutral encounter.

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INTRODUCTION

Attributions are a person's perceptions of the causes of events or of other people's behavior, which directly affect the decisions a person makes everyday. The attributions that an individual makes about another's behavior or about a situation will determine how he/she will react to that person or situation. These attributions can have a strong positive or negative impact on interpersonal relationships. Although attributions are perceptions about past causal events, they can lead to outcome expectations for future events (Overholser & Moll, 1990). For example, if a couple has an argument and the man ascribes the cause of the argument to his partner's behavior, then the recurrence of the argument may lead the man to assume that his partner was again at fault.

According to Weiner's Attributional Theory, attributions have three dimensional qualities; internal v. external locus, global v. specific and stable v. unstable (Weiner, 1974). Locus of the event focuses on whether the cause of the event is internal or external. An external locus is when the cause of the event is seen as related to circumstances outside of one's actions or behavior. An internal locus is when the cause of the event is seen as the result of one's own actions. External or internal attributions of causality can be very specific, as in the case of an illness, or they can be global, in the case of a personality characteristic. Attributions can be stable or unstable depending on whether the cause is perceived as transient or enduring. For example, an illness can be transient and a personality trait may be an enduring characteristic, which remains relatively constant during their lifetime.

Attributions can be used to understand the initiation and maintenance of distress in interpersonal relationships. Research on marital violence has shown that men in distressed relationships view situations and aspects of situations differently than do men in non-distressed relationships (Fincham, Beach & Baucom, 1987; Holtzworth-Munroe & Jacobsen, 1985). The research of Fincham et al.(1987) is a clear exemplar of the application of Weiner's Attributional Theory. The subjective tendency of an individual to use a particular attributional style is called attributional bias. Fincham et al. (1987) reported that distressed and non-distressed partners exhibited an attributional bias in reporting a discussion they had with their wives. Distressed husbands made more global and internal attributions for their wife's behavior than they did for

themselves. That is, the distressed husband was more likely to attribute the cause of an argument to his wife and ascribe the cause to some pervasive trait in her. Negative intent was also attributed to their wife's behavior. The distressed husband may have thought that his wife deliberately wanted to cause him pain and distress. The husband's negative attributional bias augments the impact of a negative event or his partner's behavior. On the other hand, non-distressed husbands viewed their wife's behaviors as less selfishly motivated and more worthy of praise than did distressed husbands. This positive attribution bias minimizes the impact of negative behaviors by the wife and augments the impact of positive events, thereby enhancing the satisfaction of the relationship.

Holtzworth-Munroe and Jacobsen (1985) reported that distressed husbands made reliably more attributions for negative partner events and more frequent attributions which maintain distress than non-distressed husbands. Distressed husbands focused on the negative circumstances of the relationship and often ignored pleasant events and their implications. Positive circumstances were discredited and attributed to circumstances separate from the wife. Such attributions can be detrimental to the existence and the enhancement of relationship satisfaction.

The preceding evidence on distressed and non-distressed husbands suggests that attributions play a key role in the maintenance of distress in relationships. According to Holtzworth-Munroe and Hutchinson (1993), attributions are often made prior to the formation of stable expectancies about partner behaviors. Once expectancies have stabilized, the attributional process becomes automatic. A distressed individual may attribute the cause of an argument to his wife because a similar attributional style was used previously in similar situations. This automaticity in attribution formation may explain the consistency of negative attributional style in distressed partners.

Holtzworth-Munroe and Hutchinson (1993) examined the differences in attributions among violent, distressed, and non-distressed men. Each group was shown vignettes of situations between a husband and his wife. The emotional themes of the vignettes ranged from neutral to jealousy, rejection and potential public embarrassment. For each vignette, violent men attributed more negative intention and selfish motivation to the wife than did distressed and non-

distressed men. Significant group differences occurred for situations which involved jealousy, rejection and public embarrassment. Holtzworth-Munroe and Hutchinson (1993) suggested that situations of jealousy, rejection and embarrassment may activate the violent tendencies of violent individuals.

Research suggests that attributions influence the maintenance of distress and violence in relationships. Violent and distressed individuals made more negative causal attributions about their partner's behavior (Holtzworth-Munroe & Jacobsen, 1985; Holtzworth-Munroe and Hutchinson, 1993; Fincham et al., 1987). These individuals exhibited an inherent bias to perceive the actions of others in a more negative light, which may in turn maintains the level of distress in these relationships. These negative attributions and the concurrent high levels of distress may lead to displays of violent behaviors (Holtzworth-Munroe & Hutchinson, 1993).

Previous literature indicates a relationship between negative attributions and distress/violence. However, the directionality between attributions and distress is not known. Possibly there are mitigating factors. One possible mitigating factor may be level of hostility. Leanord & Senchack (1996) reported a significant correlation between domestic violence and the dispositional characteristic of hostility. Men who commit domestic violence are more hostile and experience higher levels of anger than non-violent males (Maiuro, Cahn, Vitaliano, Wagner & Zegree, 1988). Furthermore, hostile individuals reported greater levels of marital dissatisfaction and conflict than non-hostile men (Maiuro et al., 1988; Smith, 1989). Anger and hostility problems may be general characteristics of domestically violent males. These data suggest that research on domestic violence should include an examination of hostility.

Smith (1992) described hostility as a "set of negative attitudes, beliefs and appraisals concerning others." This belief system affects the occurrence of interpersonal conflict in the lives of hostile individuals. Smith (1992) reported that hostile individuals are more likely to elicit and exacerbate interpersonal conflict in four ways: by anticipating provocation and mistreatment from others, by interpreting the actions of others as reflecting hostile intent, by behaving overtly and antagonistically and by being pervasively mistrustful.

Hostility is measured with questionnaires such as the Buss-Durkee Hostility Inventory (BDHI) (Buss & Durkee, 1957) and the Cook-Medley Hostility Scale (Cook &

Medley, 1954). The questions in these scales were designed to assess the characteristic behaviors and thoughts of hostile individuals. The Buss-Durkee Hostility Inventory (Buss & Durkee, 1957) assesses the use of assaultive behavior, verbal hostility, irritability, negativism, suspicion and resentment by individuals.

The Cook-Medley Hostility Scale (CMS) is the most commonly used scale to predict hostility. It assesses an individual's aggressive response to situations and his/her level of dislike and distrust of others. The CMS also evaluates hostile affect and the presence of anger. The CMS is frequently used in research to categorize individuals as high or low hostiles. Subsequently, researchers have evaluated the differences between high and low hostile individuals on distinctive variables such as attributional style and cardiovascular reactivity. For example, Allred and Smith (1991) used the CMS as a classification measure to better understand the attributional styles of high and low hostile men in interpersonal situations. According to Allred and Smith (1991), hostile men exhibit an attributional bias. For example, in a discussion in which the experimental confederate was provoking and insulting, high hostile men used a greater number of hostile descriptor terms than did non-hostile men to describe the confederate. The hostile men attributed hostile intent to the confederate and viewed the confederate as more of a potential threat than did low hostile men. Hostile men were more attentive to and processed more negative information about others than did low hostile men.

In a study of interpersonal appraisal of hostile men, Pope, Smith and Rhodewalt (1990) reported that hostile men displayed more anger and described their partners in more negative terms than did non-hostile men. Hostile men reported that their partner's negative behavior was intentional and atypical for them. This finding is similar to the data of Fincham et al. (1987) on the negative attributional biases in distressed men. The distressed men like the hostile men blamed their partner for an event. The attributions of the hostile men were similar to those for distressed and maritally violent men documented by Holtzworth-Munroe and her colleagues (1985, 1993). Together these results suggest that hostile men tend to hold negative beliefs about others and the presence of these beliefs may have an impact on the presence of conflict in relationships (Smith, Sanders & Alexander, 1990).

Evidence from Smith, Sanders, and Alexander (1990) also suggested that hostile individuals are similar to violent and distressed men in their negative attitudes and beliefs about the intention of others. In their study, couples discussed high conflict topics that are common in marital interactions. Hostile men reacted to the high conflict topics with higher levels of self-reported anger and overt hostility than did low hostile men. In addition, the hostile men blamed their spouses for the disagreement and thought that their spouse intentionally caused the argument.

Dutton and Browning (1988), used a methodology similar to that of Holtworth-Munroe and Hutchinson (1993) to assess males' attributional responding and levels of anger to conflict situations. Besides making more negative attributions, physically aggressive men reported more anger than verbal and non-aggressive males. Self-reported anger may be the result of the negative attributional biases possessed by aggressive men. These data suggest that anger may lead to distress which then may be expressed verbally or physically (Overholser & Moll, 1990).

It is possible that as a result of perceived mistreatment or provocation, hostile individuals are prone to experience anger (Allred & Smith, 1991, Pope et al., 1990). Anger is an unpleasant emotion whose intensity ranges from irritation to rage (Smith, 1992). Anger may occur because the individual is acutely focused on the negative aspects of a current situation. That focus may expose hostile individuals to "more frequent, severe and enduring contact with stressors" in the environment (Smith, 1992, p.145). The interpersonal interaction between hostile individuals and their environment may result in an increased frequency and magnitude of cardiovascular reactivity. For example, high hostile men who were provoked reported anger and also experienced greater cardiovascular reactivity than low hostile men in the same environment (Suarez & Williams, 1989).

Suarez and Williams (1989) reported that the relationship between hostility and cardiovascular reactivity may be mediated by the individual's affective state, specifically anger. The mediating role of anger may result from the attributions that a hostile individual makes about the interpersonal situation.

Research shows that cardiovascular reactivity (change in systolic and diastolic blood pressure and heart rate from baseline levels) generally results from situations which harass and challenge the hostile individual. Siegman, Anderson, Herbst, Boyle, & Wilkinson (1992) examined the relationship between the expression of anger hostility and cardiovascular reactivity. Participants performed a math task during which they were provoked and angered by the comments of the experimenter. The participant's rating of anger-hostility correlated positively with systolic and diastolic reactivity.

Weidner Friend, Ficarrotto, & Mendell (1989) used a task in which the participants were not directly harassed. Participants were asked to solve anagrams, which were not solvable after the initial anagram. During the task, high hostile individuals showed higher systolic and diastolic reactivity than low hostile individuals. The authors speculated that informing hostile individuals that the anagrams were easy may have aroused suspicion in them. Failure to solve the anagrams may have activated the negative attributional style of the hostile individual. That in turn lead to feelings of anger and increased levels of blood pressure and heart rate.

Allred and Smith (1991) propose that hostile and distressed/violent individuals perceive their environment and the actions of others in a relatively negative light. Thus, attributions may instigate anger and this anger may instigate cardiovascular reactivity, as measured by blood pressure and heart rate.

Levenson & Gottman (1985) showed that physiological reactivity (skin conductance, blood pressure and heart rate) is a strong predictor of marital distress. In Levenson and Gottman's study (1983), couples discussed several neutral and controversial topics. Husbands who perceived the interaction with their wives in a negative light showed increased levels of physiological reactivity. Measures of marital satisfaction three years later (Levenson & Gottman, 1985) showed that the husbands who experienced greater physiological reactivity in the 1983 study showed a greater decline in marital satisfaction than did those who did not experience physiological changes previously. In fact, physiological measures accounted for 60% of the variance in marital satisfaction. The increased levels of physiological reactivity in 1983 may have been indicative of the presence of negative affect. The husband may have experienced negative emotions as a result of his perceptions of the situation. Conceivably, the negative attitudes in

the initial interactions in 1983 may have persisted and were related to the low levels of marital satisfaction in 1985.

Conventional approaches to research on attributions and cardiovascular reactivity preclude a facile separation of their individual effects on behavior. Under conventional research procedures, attributions and cardiovascular reactivity are both measured after the presentation of the experimental situation. This arrangement makes it difficult to assess the separate contributions of attributions and cardiovascular reactivity to behavior and perhaps to each other. In addition, the role of affect in this relationship can not be easily measured. The contribution of affect to attributions and cardiovascular reactivity is vague in the literature. Self-reported anger has been demonstrated to be associated with higher levels of cardiovascular reactivity (Siegman et al, 1992; Weidner et al., 1989). In addition, self-reports of anger co-occur with negative attributional statements of others people's behaviors (Pope et al., 1990; Smith et al., 1990).

Lazarus (1984) proposed that emotion is the result of a person's transaction with the environment. Cognitive appraisal influences emotional experiences; how an individual appraises a situation leads to different qualities and intensities of emotion. Lazarus contended that cognitions shape emotion. Emotional experiences can not only be described by the activity of the person's bodily processes. Contrary to Lazarus' theory, Zajonc (1984) proposed that emotion and cognition are independent systems. According to Zajonc (1984), there is no evidence in the literature that cognition precedes emotion. Cognition is the transformation of present and past sensory input. Pure sensation is not cognition. Affect can be generated without cognitive appraisal of the situation as a precondition. There is research to support Lazarus' and Zajonc's position.

Thus, it is possible that anger and cardiovascular reactivity are a function of the hostile individual's belief system and his negative interpretation of an interpersonal situation. On the other hand, it is possible that the interpersonal situations act as a source of harassment for the hostile individuals. This harassment may then instigate anger and cardiovascular reactivity, which leads to negative attributions. Intense emotions, such as anger, can influence actions and thoughts (Isen and Shalcker, 1982). Isen and Shalcker (1982) had participants view ambiguous slides. Individuals in a negative emotional state rated the slides as less pleasant than individuals

in a positive emotional state. Nasby and Yando (1982) showed that an individual's affective state can influence how he encodes material. Individuals in a sad or angry state demonstrated poorer recall of positive material; Finegan and Seligman (1993) reported similar findings. Using Velten's Mood Induction Procedure, participants were induced in an elated or negative affective state. Participants were told five positive and five negative statements regarding a hypothetical inn. Individuals in the negative state rated the inn more negatively and expressed less desire to stay at the inn than individuals in the elated state. Finegan and Seligman (1993) proposed that the negative affective state impaired the individual's ability to process incompatible material and affected his general attitude. Emotional states not only influence situational attributions, but also attributions about the actions of other people.

The purpose of this study was to separate the roles of attributions, affect and cardiovascular reactivity in situations involving interpersonal conflict. To accomplish this objective, negative affect and cardiovascular reactivity were induced prior the presentation of stimuli about which attributions were made. The methodology that was used was based on the logic of Zillman's Excitation Transfer Theory (1971) and his research.

According to Zillman's Excitation Transfer Theory (1971), sympathetic activity from an arousing experience dissipates slowly but will combine with arousal induced by a subsequent experience. The two arousal conditions/states will affect the emotional experience and/or attribution activity of the individual (Zillman, 1971). For example, individuals who experience activation in one circumstance may experience intensified emotions and behavior in a later situation.

According to Zillman and Bryant (1974), an individual's emotional reaction to a provocative situation may be exacerbated when the situation follows an arousal inducing task. Specifically, in Zillman and Bryant's study (1974), participants performed a bicycle task that increased their heart rate and blood pressure. After the bicycle task ended, the participants played a battleship game with an experimental confederate. During the game, the confederate was overheard disparaging the participant's ability. When participants had a later opportunity to aggress against the confederate, participants who performed the bicycle task showed more aggressive behavior toward the confederate than the participants who did not perform the bicycle

task (Zillman & Bryant, 1974). The present study used the logic of Zillman and Bryant's approach to separate the roles of attributions and cardiovascular reactivity in hostile men.

Rationale of the Present Study

Hostile individuals have a greater tendency to make negative attributions about interpersonal events and other people's behavior than do non-hostile individuals (Smith et al., 1990; Pope et al., 1990; Allred & Smith, 1991). Negative attributions may result from situations in which the hostile individual is harassed or challenged or perceives he is being harassed or challenged. Harassment may act as a stressor and produce anger in hostile individuals (Suarez & Williams, 1989). Hostile individuals also experience greater cardiovascular reactivity to provocation than low hostile individuals (Weidner et al., 1989). Suarez & Williams (1989) suggested that the cardiovascular reactivity experienced by the hostile individual in response to provocation may be a function of anger. In general, affective states, such as anger may impact upon situational attributions and attributions about the behavior of others (Finegan & Seligman, 1993). Zillman and Bryant (1974) showed that when physiological arousal precedes the harassing situation, the aggression prompted by the previous harassment is increased. Thus in the present study, inducing negative affect and cardiovascular reactivity in hostile individuals prior to the presentation of a provocative/harassing situation will augment their negative response to that situation.

The experiment consisted of a screening phase, a pre-experimental phase and an experimental phase. The purpose of the pre-experimental phase was to evaluate the emotions experienced by the participant during the arousal inducing and non-arousal inducing tasks.

The design of the pre-experimental phase was a 2 x 2 factorial. There were two levels of hostility as measured by the Cook-Medley Hostility Scale (1954) (high v. low) and two arousal conditions (arousal inducing task v. non-arousal inducing task). Prior to the experiment, participants were screened with the Cook-Medley Hostility Scale (Cook & Medley, 1954). Individuals who scored low or high on the CMS were randomly assigned to an arousal inducing condition or a non-arousal inducing condition. The arousal inducing tasks were a series of mental tasks (serial subtraction by 7's) designed to challenge mathematical abilities. The non-arousing tasks were similar to the arousing tasks, but were minimally challenging (serial

subtraction by 1's). Participants completed a task in their assigned condition. Cardiovascular reactivity was measured during the mental task. After the mental task was completed, participants completed a questionnaire to assess the emotions experienced during the mental task.

The design of the main experiment was a 2 x 2 x 2 factorial. There were two levels of hostility as measured by the Cook-Medley Hostility Scale (1954) (high v. low), two arousal conditions (arousal inducing task v. non-arousal inducing task) and two types of interpersonal vignettes (provocative v. neutral). The arousal inducing tasks were a series of mental tasks (serial subtraction by 7's) designed to challenge mathematical abilities. The non-arousing tasks were similar to the arousing tasks, but were minimally challenging (serial subtraction by 1's). After the completion of the serial subtraction task the participant was presented with a provocative or a neutral vignette which depicted a situation that occurs in a dating relationship. After hearing the vignettes, the participants answered questions about their attributions regarding the situations.

Hypotheses

- 1.) Irrespective of level of hostility, males in the arousal inducing condition will report more negative affect than males in the non-arousal inducing condition.
- 2.) The high hostile group in the arousal inducing condition will report more negative affect than low hostile group. No significant differences between groups are expected for the non-arousal condition.
- 3.) Irrespective of hostility level, males in the arousal-inducing condition will yield higher cardiovascular reactivity (SPB, DBP, HR) during the arousal-inducing task than males in the non-arousal inducing condition.
- 4.) Irrespective of hostility level, males in the arousal-inducing condition will make more negative attributions about the provocative vignettes than will males in the non-arousal inducing condition. No significant differences between arousal conditions are expected for the neutral vignettes.
- 5.) The high hostile group in the arousal-inducing condition will make more negative attributions about the provocative vignettes than will the low hostile group in the same arousal inducing

condition. No significant differences between hostility groups are expected for the neutral vignettes.

METHODOLOGY

Participants

One hundred and fifty male subjects were recruited from the students enrolled in the Introductory Psychology course at Virginia Tech. Subjects had the option to withdraw from the study at any time during the experiment. Extra credit toward the subject's course grade was given for participation in the study.

Procedure

Screening Phase

The study consisted of a screening phase, pre-experimental phase and an experimental phase. The screening session was conducted with groups of approximately 25 students per session. At the start of the session the participants signed an informed consent form (Appendix D). The experimenter described the purpose of the study as an investigation of the personality characteristics of college males. Participants were informed that further research opportunities were available and that, if they were interested to mark the front of the questionnaire packet with the appropriate information (Name and telephone number) for contacting them. After the study had been explained to the participants, questions were answered and the informed consent forms signed, a packet of questionnaires was administered. The packet contained a demographics questionnaire, Neurological Evaluation Form, the Laterality Questionnaire (Coren, Porac & Duncan, 1979), the Cook-Medley Hostility Scale (Cook & Medley, 1954), the Conflict Tactics Scale (Straus, 1979) and the Michigan Alcohol Screening Test (Selzer, 1971).

Demographics Questionnaire. The six item demographics questionnaire assessed the participant's age, academic level, marital status and relationship history (Appendix F).

The Neurological Screening. The neurological screening is a 16-item questionnaire which identifies conditions that may affect the physiological measures that were taken during the experimental phase of this study (Appendix G). The participants answered questions regarding current and past medical conditions which include stroke, alcohol use and head trauma. The questionnaire required a detailed explanation of any of the aforementioned conditions.

The Laterality Questionnaire (Coren, Porac & Duncan, 1979). The laterality questionnaire is a 13-item measure, which assesses lateral preference (Appendix H). The questionnaire has been validated behaviorally for hand, foot, eye and ear preference. Laterality preference scores were calculated by adding 1 point for right, subtracting 1 point for left and adding 0 points for both “right” and “left” side preference.

The Cook-Medley Hostility Scale (CMS, Cook & Medley, 1954). The CMS is a 50-item true false scale composed of six subscales; cynicism, hostile attribution, aggressive responding, hostile affect, social avoidance and other (Cook & Medley, 1954) (Appendix I). Hostility is a multi-dimensional construct. The Cook-Medley Scale correlates highly with the cognitive, affective and behavioral components of hostility such as anger and suspicion (Pope, Smith & Rhodewalt, 1990). High scores on the Cook-Medley Scale have been found to be associated with greater anger proneness, resentment, cynicism and mistrust of others (Smith, 1992). This scale has strong internal consistency ($\alpha = .80$) and test-retest reliability ($r = .84$) (Shekelle, Gale, Ostfeld & Paul, 1983; Smith & Frohm, 1985).

The Conflict Tactics Scale (CTS, Straus, 1979). The CTS contains a list of 19 behaviors a person may use to resolve a conflict with another individual (Appendix J). The scale assesses how many times each behavior occurred in the last year (0 – never, 6 – More than 20). The items on the CTS vary in their degree of coerciveness; discuss an issue calmly, used a knife or fired a gun. Consequently, a factor analysis of the CTS yielded three types of tactics, reasoning, verbal aggression and violence. Straus (1989) reported high test-retest reliability estimates for the CTS (reasoning, $\alpha = .76$, verbal aggression, $\alpha = .86$, violence, $\alpha = .88$). Concurrent validity was determined in a study by Bulcroft and Straus (1975). Spouse CTS scores were correlated with their son or daughter’s report spousal abuse (reasoning, $r = .64$, verbal aggression, $r = .51$, violence, $r = .33$).

The Michigan Alcohol Screening Test (MAST; Selzer, 1971). The MAST was used to direct the participant’s focus away from the real purpose of the experiment (Appendix K). The MAST is a 25-item questionnaire which assesses alcohol dependence. The MAST has been shown to be a strong predictor of lifetime alcohol dependence ($r = .74$) (Watson, Detra, Kurt, Ewing, Gearheart, and DeMotts, 1995).

Experimental Design

The study consisted of a pre-experimental and an experimental phase. The design of the pre-experimental phase was a 2 x 2 factorial. There were two levels of hostility as measured by the Cook-Medley Hostility Scale (1954) (high v. low) and two arousal conditions (arousal inducing task v. non-arousal inducing task). The design of the main experiment was a 2 x 2 x 2 factorial. There were two levels of hostility (high v. low), two arousal conditions (arousal inducing task v. non-arousal inducing task) and two types of vignettes (provocative v. neutral). In order to classify the participants as high hostile or low hostile, the Cook-Medley scales from the screening phase were assessed as follows: high hostile, those who scored a 29 or above, and low hostile, those who scored a 24 or below. The arousal condition was a between subjects factor. The low and high hostile individuals were randomly assigned to an arousal condition, arousal inducing condition, those who completed an arousal inducing task or non-arousal inducing condition, those who completed a non-arousal inducing task. The arousal inducing tasks were serial subtraction tasks (by 7's) designed to challenge mathematical abilities. These tasks have been shown to increase heart rate and blood pressure of participants (Pilot study, 1998). The non-arousing tasks were similar to the arousing tasks, serial subtraction by 1's, but were designed to be minimally challenging. Vignettes depicted provocative and neutral situations that can commonly occur between individuals in a dating relationship. Neutral and provocative vignettes were presented to the subjects in a counterbalanced order. The vignette variable was a within subjects factor.

The participants were contacted by phone to schedule a time for the experimental phase of the study. The experimenter called the participant a day before their scheduled appointment as a reminder of the appointment time and location. The participant was told to refrain from caffeine 24 hours prior to the experiment in order to avoid contamination of the physiological measures.

Upon arrival at the lab, the participant was presented with two copies of an informed consent form (Appendix E). They were asked to read and sign both copies; one copy was kept by the experimenter. The purpose of the experiment was explained as one investigating the effects of task performance on the ability to imagine. The participants were told that they would be

asked to perform several (unspecified) mental tasks related to arithmetic skills, and that after the completion of each task they would listen to a vignette and be asked questions about the vignette. After the experiment had been briefly explained, the participant were seated on a recliner chair in a laboratory room and were fitted with head phones and a blood pressure cuff.

A Norelco Healthcare Electronic Digital Blood Pressure/Pulse meter with microphoneless cuff (1985; Model HC3030) was used to measure heart rate, systolic blood pressure and diastolic blood pressure. The cuff was placed on the upper portion of the non-dominant arm over the brachial artery and 2.5 cm above the antecubital space. This location was assessed by palpitation.

Once the participant was set-up with the apparatuses, the experimenter closed the room door and went into an adjoining room. The experimenter communicated with the participant through an intercom system between the rooms.

Prior to the completion of the main experiment, participants completed a pre-experimental phase of the study.

Pre-experimental Phase

The participant initially completed a familiarization task in which he subtracted backwards by one's from 1000 to the beat of a metronome for thirty seconds.

After the familiarization task, the participant was asked to relax for three minutes and then two baseline measures of heart rate and blood pressure were taken. If the second diastolic or systolic reading differed by more than 20 mmHg from the first reading or if the difference between the first and second heart rate measures was greater than 6 beats per minute, a third measure was taken.

After baseline measures were taken the participant completed one serial subtraction task. In the arousal inducing condition, the participant completed a serial subtraction task which involved subtracting backwards by sevens from a specified number (i.e. 1237) to the beat of a metronome (1 beat/s) for two minutes. In the non-arousal inducing condition, participants completed a serial subtraction task in which they subtracted by 1's starting with the number specified by the experimenter (i.e. 237) to the beat of the slower metronome (.3 beats/s) for two minutes.

Blood pressure and heart rate measures were obtained one minute after the start of the serial subtraction task. After two minutes, the experimenter told the subject to stop the task and to complete the questionnaire on the table next to him.

The Emotion Questionnaire. The Emotion Questionnaire is a list of six positive and six negative emotions (Appendix L). The questionnaire assessed how much of a particular emotion the participant experienced during the experiment. The range of experience was based on a Likert scale from 1-5 (1 - not at all, 5 – a lot).

After the participant had completed the Emotion Questionnaire, the experimenter instructed the participant that he/she was entering the subject room to remove the blood pressure cuff and earphones. The participant was instructed to leave the lab for five minutes so the experimenter could set-up the next portion of the experiment.

Experimental Phase

When the participant returned to the lab, he was directed back into the subject room and seated in the recliner chair. The participant was fitted with blood pressure cuff and headphones as before.

Once the participant was set-up with the apparatuses, the experimenter closed the room door and went into an adjoining room.

The participant was asked to relax for three minutes and then two baseline measures of heart rate and blood pressure were taken. If the second diastolic or systolic reading differed by more than 20 mm from the first reading or if the difference between the first and second heart rate measures was greater than 6 beats per minute, a third measure was taken.

After baseline measures were taken the participant completed four two minute serial subtraction tasks. In the arousal inducing condition, the participant performed a serial subtraction task which involved subtracting backwards by sevens from a specified number (i.e. 1237) to the beat of a metronome. In the non-arousal inducing condition, participants completed a serial subtraction task in which they subtracted by 1's starting with the number specified by the experimenter (i.e. 237) to the beat of the metronome.

For each serial subtraction task, blood pressure and heart rate measures were obtained one minute after the start of the task. After two minutes, the experimenter told the

participant to stop the task. Immediately thereafter, a vignette was presented to the participant via headphones. The participant was then asked to answer 5 questions to assess his attributions about the scene. The questions were presented on audiotape and the participant circled his answers on a sheet provided by the experimenter.

One minute after the completion of the vignette questions, baseline heart rate and blood pressure measures were taken as before and the next serial subtraction task began. This task was of the same nature as the first task (arousal inducing or non-arousal inducing) but the nature of the vignette was different. For example, if the first task completed was a serial subtraction task by 7's and the participant then was exposed to a provocative vignette, he then completed an serial subtraction by 7's starting with a different number followed by a neutral vignette. This same procedure continued until the subject completed four tasks in their assigned condition and listened to all four scenarios. At the end of the experiment, the experimenter removed the headphones and blood pressure cuff and then debriefed the participant.

Attributional Responding. A five question attribution measure was created for this study which assessed the attributional responses of the participants to the vignettes (Appendix M). The questions were adapted from previous work done in this area (Moore, 1998).

Cardiovascular Reactivity. Cardiovascular reactivity was determined by calculating difference scores for systolic blood pressure, diastolic blood pressure and heart rate. For each task completed, the physiological measures taken at one minute into the task were subtracted from the average of the baseline measures for that task.

RESULTS

Demographic Data. Fifty-seven college males participated in this study. Three participants were excluded from the analyses because their physiological measures, SBP, DBP and HR, were extreme in comparison to the rest of the sample; physiological change scores were greater than 2.5 standard deviations from the mean (Appendix C are histograms of SBP, DBP and HR). The mean age of the participants was 19.5 years (Range 19.5 – 24), 84% of the sample was Caucasian (caucasian=48, african-american=3, hispanic=3, asian=2, and other=1). College freshman constituted 56%, the largest percent, of the sample (Freshman= 32, Sophomore = 18, Junior= 9 and Senior=8). All participants were single and 43.1% (n=25) were currently in a dating relationship. Statistical analyses indicated no reliable difference between high and low hostile males and between arousal condition for age, academic level, ethnicity, marital status and dating relationship history, $p's > .20$. Dating history, present relationship status, duration of the relationship, and number of relationships, did not have a significant influence on self-reported negative or positive affect or attributional responding to provocative or neutral scenes, $p > .10$ and $p \geq .06$ and $p's > .20$ respectively.

Pre-experimental Phase

Self-Reported Affect. Figure A-1 and A-2 are graphs of the mean self-reported negative and positive affect of high and low hostile males in the arousal and non-arousal inducing condition (Table B-1 displays the mean positive and negative self-reported affect for high and low hostile males in the arousal inducing and non-arousal inducing condition). There was no significant difference between scores for positive and negative self-reported affect, $F(1,53) = 1.56$, $p = .21$. The results of a repeated measures analysis of variance showed a reliable difference in self-reported affect between arousal conditions, $F(1,53) = 8.64$, $p = .00$. The interaction of arousal condition and type of self-reported affect, positive or negative was significant, $F(1, 53) = 15.82$, $p = .00$. Males in the arousal inducing condition report reliably greater negative affect than males in the non-arousal inducing condition, $F(1, 53) = 21.56$, $p = .00$. Arousal condition did not significantly influence reports of positive affect, $F(1, 53) = 1.96$, $p = .16$. High and low hostile males did not differ significantly on reports of positive or negative affect, $F(1, 53) = 1.03$, $p = .31$ and $F(1, 53) = 3.10$, $p = .08$ respectively. The interaction of hostility x arousal condition for

self-reported positive and negative affect were not significant, $F(1, 53) = 1.04$, $p = .31$ and $F(1, 53) = .05$, $p = .82$ respectively.

Cardiovascular reactivity. For each measure, systolic blood pressure, diastolic blood pressure and heart rate, analyses of baseline physiological measures yielded no significant differences between high and low hostile males nor between arousal conditions, $p's > .14$.

Figure A-3 is a graph of the mean changes in systolic blood pressure for high and low hostile males in the arousal and non-arousal inducing condition (Table B-2 displays the means for systolic blood pressure, diastolic blood pressure and heart rate for high and low hostile individuals in the arousal inducing and non-arousal inducing condition during the pre-experimental phase). Males in the arousal inducing condition displayed a greater change in systolic blood pressure than males in non-arousal inducing condition, $F(1,53) = 15.86$, $p = .00$. High hostile males displayed a greater change in systolic blood pressure than low hostile males, $F(1,53) = 4.44$, $p = .04$. The interaction of hostility x arousal condition for systolic blood pressure was not significant, $F(1, 53) = .24$, $p = .62$.

Figure A-4 is a graph of the mean changes in diastolic blood pressure for high and low hostile males in the arousal and non-arousal inducing condition. Males in the arousal inducing condition displayed a greater change in diastolic blood pressure than individuals in the non-arousal inducing condition, $F(1,53) = 10.98$, $p = .00$. There was no significant difference between hostility groups for diastolic blood pressure, $F(1, 53) = .03$, $p = .86$. The interaction of hostility x arousal condition for diastolic blood pressure was not significant, $F(1, 53) = 1.70$, $p = .19$.

Figure A-5 is a graph of the mean changes in heart rate for high and low hostile males in the arousal and non-arousal inducing condition. Males in the arousal inducing condition displayed a greater change in heart rate than males in the non-arousal inducing condition, $F(1, 53) = 10.21$, $p = .00$, respectively. Low hostile males displayed significantly greater heart rate changes than high hostile males across arousal conditions, $F(1, 53) = 7.18$, $p = .01$. The interaction of hostility X arousal condition was not significant, $F(1, 53) = 1.20$, $p = .27$.

The previously reported analyses for cardiovascular reactivity were calculated using change scores for cardiovascular reactivity. Analyses for cardiovascular reactivity were also calculated using the raw scores. Both sets of analyses yielded the same results.

Experimental Phase

Attributional Responses to Neutral and Provocative Scenes. Figure A-6 and A-7 are graphs of the mean negative attributions of high and low hostile males to neutral and provocative scenes (Table B-3 displays the mean negative attributions to neutral and provocative scenes by high and low hostile males in the arousal and non-arousal inducing conditions). Overall, more negative attributions were reported for provocative (Figure A-7) than neutral scenes (Figure A-6), $F(1, 52) = 199.58, p < .00$. The interaction of arousal condition x type of scene was significant, $F(1, 52) = 8.24, p = .00$. Analyses of variance showed reliable differences between arousal condition for negative attributions to neutral scenes, $F(1, 55) = 4.10, p = .04$. Males in the arousal-inducing condition made more negative attributions to neutral scenes than males in the non-arousal inducing condition. There was no significant difference between arousal condition for negative attributions to provocative scenes, $F(1, 55) = 2.64, p = .11$.

The interaction of hostility x type of scene was not significant, $F(1, 52) = .01, p = .90$. The interaction of condition x hostility x type of scene was not significant, $F(1, 52) = .42, p = .51$

DISCUSSION

Summary of Results. In the pre-experimental phase of this study, the arousal inducing condition yielded evidence of negative affect. As stated in hypothesis one, males in the arousal inducing condition, reported significantly more negative affect than males in the non-arousal inducing condition. Level of hostility did not significantly influence the amount of negative affect reported. Although the effect of hostility was not significant, the effect was in the direction hypothesized. That is, high hostile males reported more negative affect than low hostile males ($p=.08$). The hostility x arousal condition interaction was not significant.

The arousal-inducing task significantly affected blood pressure and heart rate. Males in the arousal inducing condition showed a significantly greater change in systolic and diastolic blood pressure and heart rate than males in the non-arousal inducing condition. These results support hypothesis two. Consistent with past research (i.e. Suarez and Williams, 1989), high hostile males showed a significantly greater change in systolic blood pressure than low hostile males. For systolic and diastolic blood pressure, the interaction of hostility x arousal condition was not significant. For the heart rate measure, low hostile males showed a significantly greater change in heart rate than high hostile males. The interaction of hostility x arousal condition for heart rate was not significant.

Contrary to hypothesis four, males in the arousal inducing condition reported significantly more negative attribution to neutral scenes than males in the non-arousal inducing condition. Arousal condition did not influence the negative attributions to provocative scenes. Overall, males made significantly more negative attribution to provocative scenes than neutral scenes.

Hostility groups did not differ in their negative attributions to neutral or provocative scenes. The interaction of hostility X condition for negative attributions to provocative or neutral scenes was not significant.

General Discussion. Arousal condition was associated with different levels of self-reported negative affect. Males in the arousal inducing condition reported significantly higher levels of negative affect than the males in the non-arousal inducing condition. The serial subtraction task (by seven's) for the arousal inducing condition was designed to be a difficult task. The

participant did not have enough time to say the number or mentally subtract by seven before the metronome clicked again. The speed of the metronome was 1beat/second. In addition, the participant was told that the task was easy and that other college students could do the task with no problems. The participant may have felt deceived by the researcher. This deception and the challenging nature of the arousal inducing task may have led to a greater amount of self-reported negative affect in the arousal inducing condition compared to the non-arousal inducing task (subtracting by one's, .3 beats/second). The results of this study are consistent with past research. Suarez and Williams (1989) and Weidner et al. (1989) used a serial subtraction task and unsolvable anagrams, respectively, to elicit negative affect. Participants in both studies reported that they experienced negative affect (irritation, anger, and frustration) as a result of the task.

Hostility differentially affected the amount of negative affect the participant reported but the effect was not significant ($p=.08$). This finding was consistent with the research by Allred and Smith (1991). Hostile males are characterized by their tendency to interpret situation and the actions of others in a negative light (Smith, 1992). Consistent with their trait characteristics, high hostile males experienced more negative affect (i.e. anger, frustration, and irritation) than did low hostile individuals. Allred and Smith (1991) reported that high hostile males perceived an interaction with another person more negatively than did low hostile males in the same situation. The negative perception of the participant was quantified by the number of hostile descriptors used to describe the other person. The number of descriptors was positively correlated with the self-report of anger. In the present study, the participant was told that the tasks were easy when in fact some were not. The hostile males may have interpreted this information as deceptive and reacted more negatively than the low hostile males. This negative interpretation of the task is reflected in the greater amount of negative affect reported by the high versus low hostile males.

The cardiovascular data in the present study were consistent with the self-reported negative affect. Males in the arousal inducing condition displayed greater changes in systolic and diastolic blood pressure and heart rate than males in the non-arousal inducing condition. In addition, the arousal inducing condition elicited greater negative affect than the non-arousal inducing condition. This relationship between cardiovascular reactivity and negative affect is consistent with research by Schwartz (1986). Schwartz (1986) used an imagery task to examine

the relationship between emotion and physiological changes in the autonomic nervous system. He reported that changes in physiology, as measured by systolic and diastolic blood pressure, co-occur with the experience of anger. According to a systems perspective, emotion is a biopsychosocial process (Schwartz, 1986). Emotion is the result of complex interactions at the subjective level, cognitive processing level, and at the level of biology. The negative affect may have been influenced by the cardiovascular reactivity, or vice versa or as suggested by the systems perspective there were interactions between all three levels.

Low hostile males displayed a greater change in heart rate than high hostile males. Generally, high hostile males show greater change in heart rate than low hostile males to stressors. Past research on hostility has shown that the difference in cardiovascular reactivity between hostility groups is not always consistent (Suls & Wan, 1993). Similar to the present study, Weidner et al. (1989) used a difficult task (unsolvable anagrams) to elicit stress and anger in high and low hostile males. Weidner et al. (1989) did not find a significant relationship between hostility and heart rate during the anagram task. Suarez and Williams (1989) also used a serial subtraction task and harassed the participant's ability to perform the task. They reported a significant relationship between hostility and heart rate but only for the self-report of anger and irritation to the serial subtraction task. The relationship between heart rate and hostility was not significant if the participant did not report high levels of anger.

Schwartz (1986) examined the effects of imagery generated emotion on systolic and diastolic blood pressure and heart rate and reported that anger is associated with high systolic and diastolic blood pressure. In addition, high systolic blood pressure during anger co-occurred with lowered heart rate. Schwartz (1986) suggested that during the anger state, systolic blood pressure increases were mediated by increases in the peripheral resistance. This increase in peripheral resistance may have activated baroreceptor mechanisms, which lowered the heart rate. The results of Schwartz's study were similar to the physiological changes in the present study. In the present study, high hostile males exhibited significantly higher systolic and diastolic blood pressure but lower heart rate changes compared to low hostile males. Systolic and diastolic blood pressure were highly correlated, $r = .49$ ($p = .00$). The present results may be understood

from the perspective of Schwartz (1986). The lowered heart rate of the high hostile males may have been the result of inhibition of the heart by baroreceptors.

The effects of the interaction of hostility x arousal condition on self-reported negative affect and on cardiovascular reactivity were not significant. One potential explanation for the lack of significant effects between hostility groups may have been the criterion used to put the participants into the hostility groups. This study used a cut-off of 24 for low hostiles and 29 for high hostile individuals. Other research has used 14/23 and 15/27 for low/high hostility cut-off points (Suarez and Williams, 1989; Smith, Pope, Sanders, Allred & O'Keefe, 1988). The low hostile cut-off used in this study may have been too high with the result that the low hostile group may have been dispositionally similar to the high hostile group to yield significant group differences.

The main purpose of this study was to investigate the effects of negative affect and cardiovascular reactivity, as a function of the arousal condition, on attributions. Previous research on attributions has generally examined attributional responding to different types of interpersonal situations, provocative or neutral (Holtzworth-Munroe & Jacobsen, 1985; Holtzworth-Munroe & Hutchinson, 1993). Consistent with the past research, in this study more negative attributions were reported for provocative scenes than for neutral scenes. However, unlike Holtzworth-Munroe's research, this study included measures of negative affect and cardiovascular reactivity into the experimental paradigm. Induced negative affect, via the arousal inducing task, is associated with increased levels of cardiovascular reactivity; increased blood pressure and heart rate. The arousal condition in the present study influenced the participants' attributions about the scene. In the arousal inducing condition, the participants interpreted neutral scenes more negatively than participants in the non-arousal inducing condition. The arousal condition significantly affected negative attributions to neutral scenes, but not provocative scenes.

Past research has shown that the experience of an intense emotion can alter a person's perception of an event (Isen & Shalcker, 1982; Nasby and Yando, 1982). Isen and Shalcker (1982) reported that subjects in a negative mood rated ambiguous slides more negatively than participants in a positive mood. In the present study the arousal inducing condition was

associated with a higher level of self-reported negative affect. This negative affect may have impaired the participant's ability to process neutral information about the neutral scenes. For example, in a neutral scene a girlfriend comes home and discusses with her boyfriend how unfair her biology professor is because he failed her on an exam. The participant could have interpreted this scene in two ways; it was the girlfriend's fault that she failed the test, or the professor made the test too hard and it was an unfair exam so the professor is at fault. In the arousal inducing condition, the participant reported more negative attributions to scenes like the one just described. The participants in the arousal inducing condition attributed more responsibility to the girlfriend for the failed exam than did the participants in the non-arousal inducing condition.

The attribution scale used in the present study may have contributed to the lack of differences in negative attributions for provocative scenes between arousal conditions. Participants judged the negative attributions of the scene on a scale from 1 to 6. The mean negative attribution score for neutral scenes was 2.59 and the mean negative attribution score for provocative scenes was 4.8. Participant in the arousal inducing condition had more space to interpret the neutral scene more negatively than the provocative scene. The scale may have been a limiting factor when making attributions and contributed to the null finding for provocative scenes and for the effects of hostility and condition on negative attributions.

Future Research. Inducing cardiovascular reactivity by a serial subtraction task impacted on the negative attributions about neutral female partner behavior. The greater amount of negative attributions during the arousal inducing condition may have reflected the transfer of the negative affect that accompanied the increased cardiovascular reactivity. This finding suggests that men's interpretation of neutral or ambiguous interactions with female partners may be susceptible to the influence of sympathetic arousal and his affective state.

Future research needs to separate the contributions of heart rate and blood pressure and the negative affect to the attributions. In this study, cardiovascular reactivity and affect was only measured during the serial subtraction task. Cardiovascular reactivity and affect should be measured during and after the scene has been presented to the participant. By measuring cardiovascular reactivity and affect before and after the scenes, the individual effects of each variable on attributions can be analyzed.

Hostility was not a significant variable in the relationship between arousal condition and attributions. Future researchers should ensure that their hostility groups are distinct from each other prior to researching the effects of hostility. Past research has shown that hostility is correlated with abusive behavior. Thus, the role of hostility should not be ignored in future research.

Future research should not only examine general negative affect as was done in this study, but also measure individual emotions with multiple items for each emotion being assessed. Measuring specific emotions may clarify the relationships between physiology and the subjective experience of emotion. Different emotions are associated with different patterns of physiological changes (Schwartz, 1986). By measuring individual emotions, the effects of the arousal condition and hostility on heart rate can be disentangled. It can be speculated that the decrease in heart rate was due to the baroreceptor mechanisms. However, Schwartz (1986) stated that the decrease in heart rate occurred during a state of anger. Since negative affect was measured and not anger specifically, this can only be a speculation.

A more comprehensive understanding of the role personality characteristics, such as hostility, affect and physiological arousal play in influencing attributions is needed. When this understanding has been achieved the next logical step to take is to examine the behavioral reaction the male would make when he encounters an interpersonal situation. This study and others may give researchers a better understanding of the events that precipitate an abusive response by males.

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APPENDIX A
FIGURES DISPLAYING THE RELATIONSHIPS BETWEEN THE EXPERIMENTAL
VARIABLES

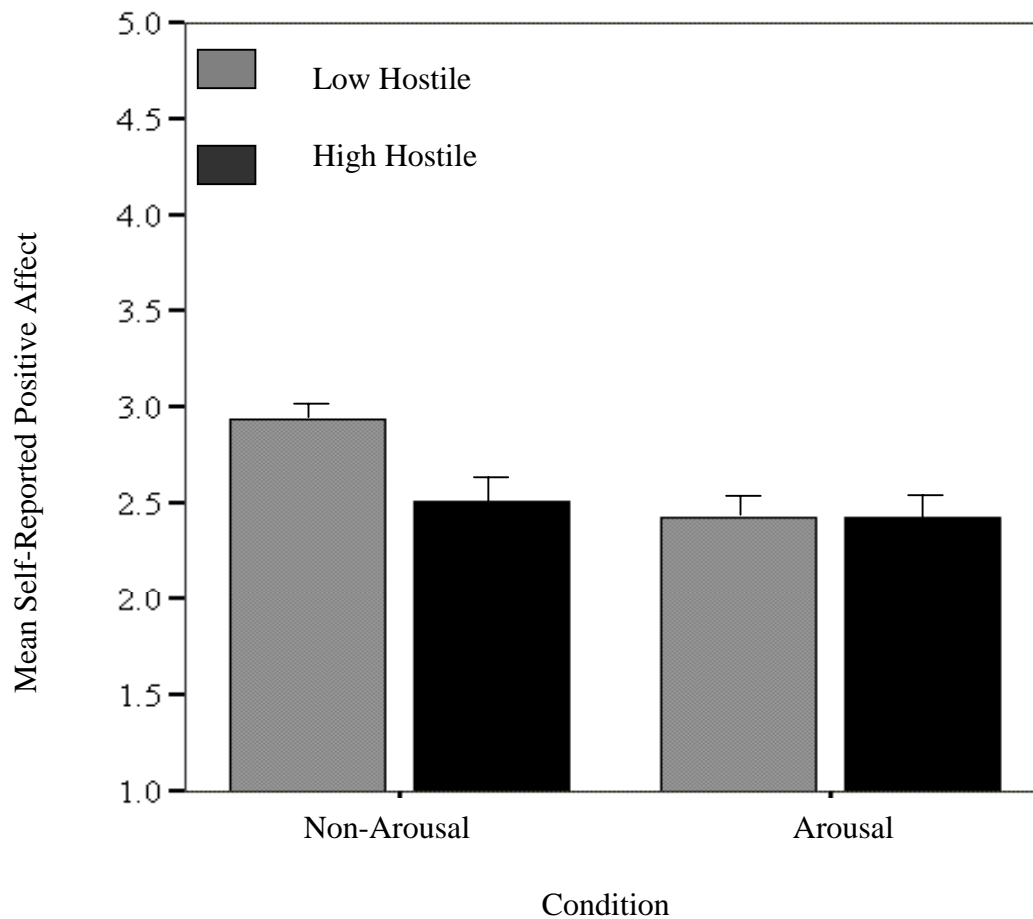


Figure A-1. Mean Self-Reported Positive Affect of Low and High Hostile Males in the Non-Arousal and Arousal Inducing Condition

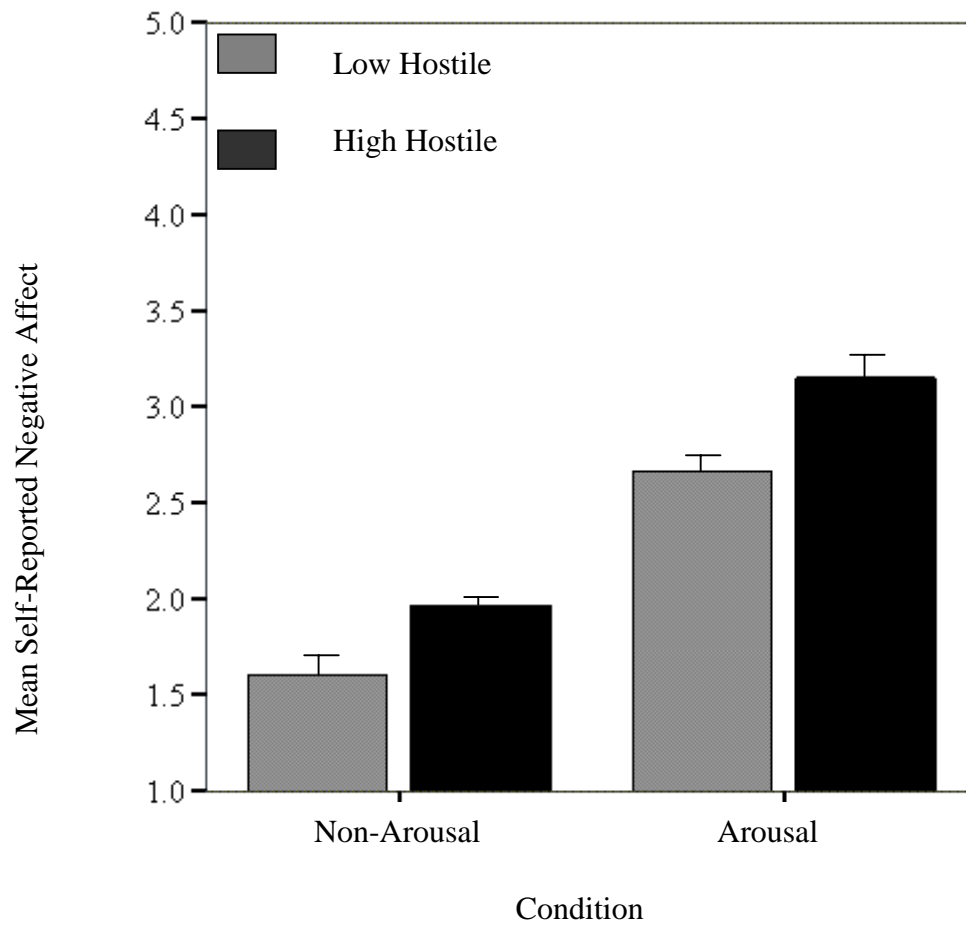


Figure A-2. Mean Self-Reported Negative Affect of Low and High Hostile Males in the Non-Arousal and Arousal Inducing Condition

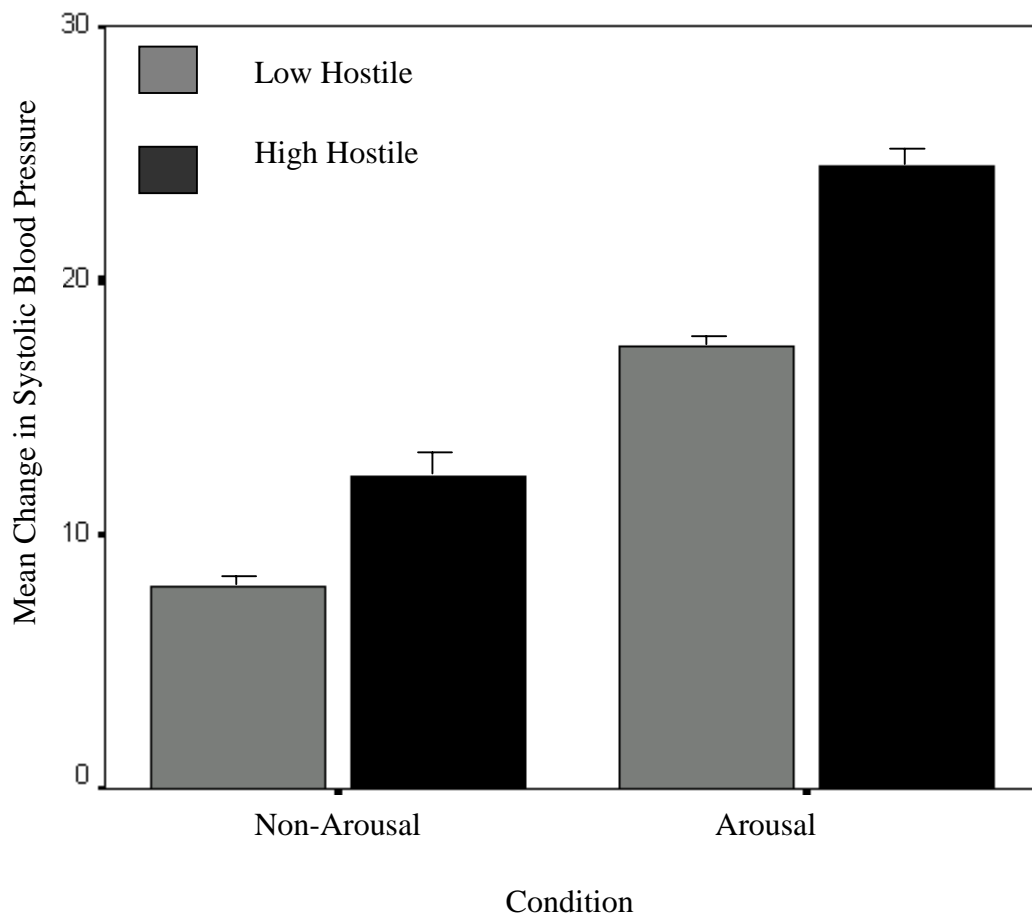


Figure A-3. Mean Change in Systolic Blood Pressure of High and Low Hostile Males in the Non-Arousal and Arousal Inducing Condition

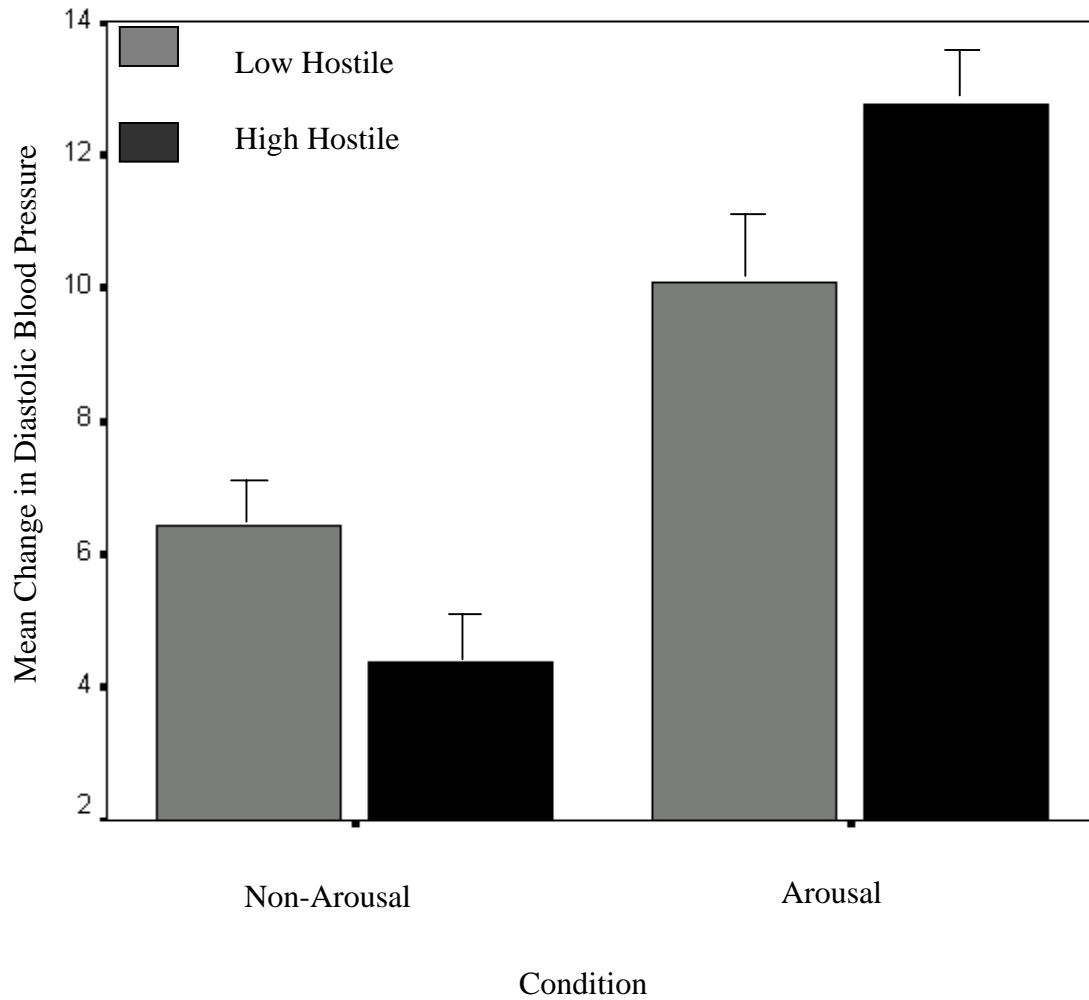


Figure A-4. Mean Change in Diastolic Blood Pressure of High and Low Hostile Males in the Non-Arousal and Arousal Inducing Condition

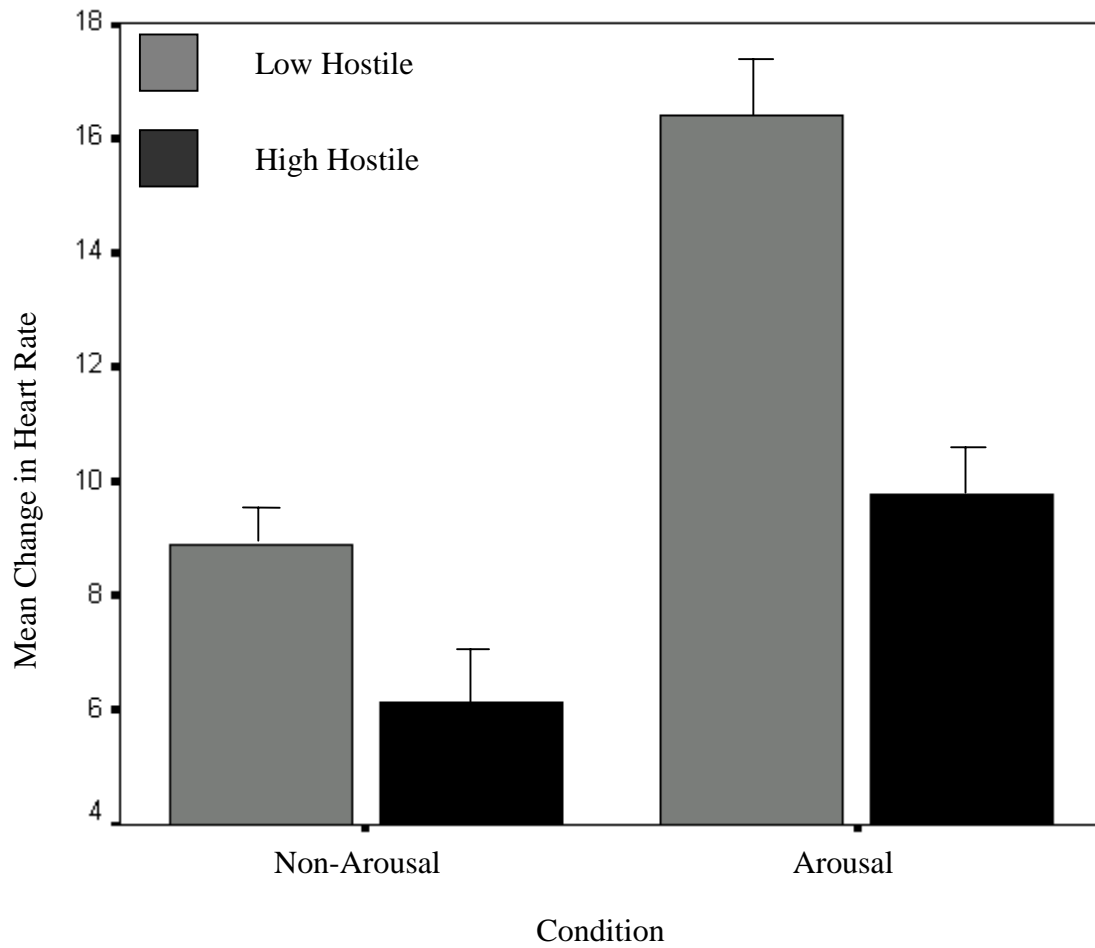


Figure A-5. Mean Change in Heart Rate of High and Low Hostile Males in the Non-Arousal and Arousal Inducing Condition

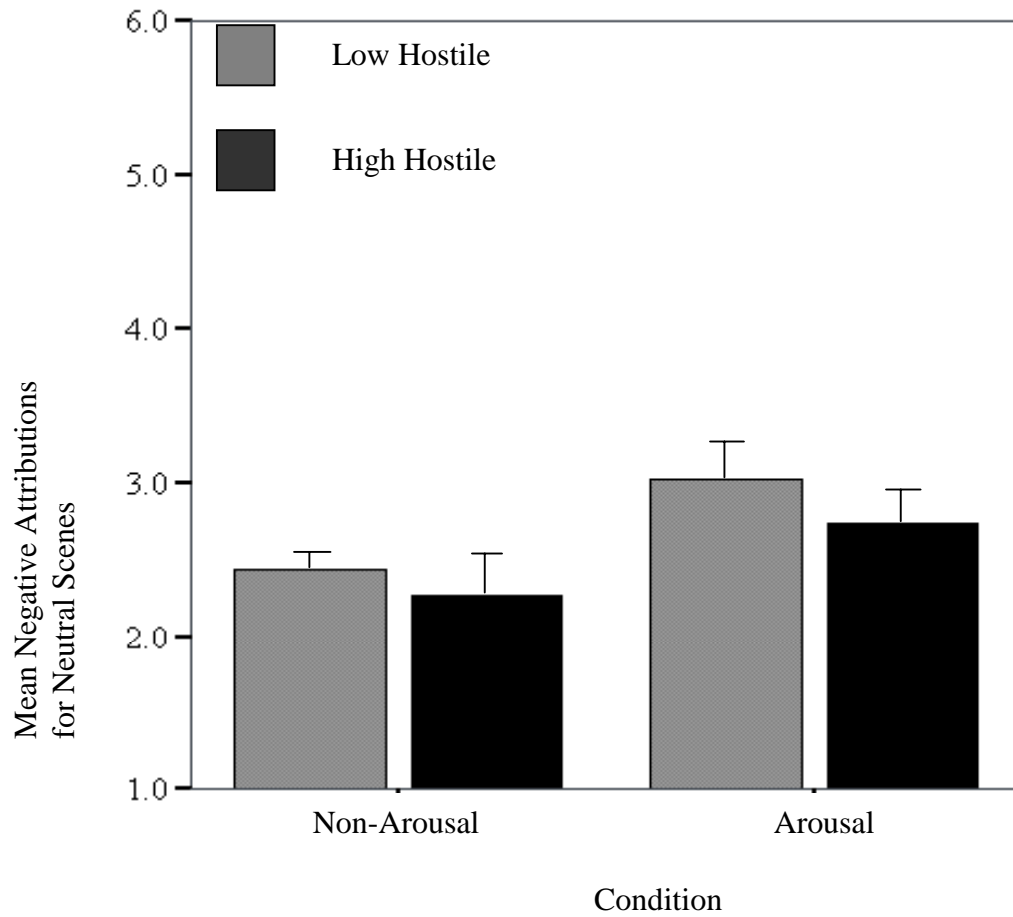


Figure A-6. Mean Negative Attributions to Neutral Scene of High and Low Hostile Males in the Non-Arousal and Arousal Inducing Condition

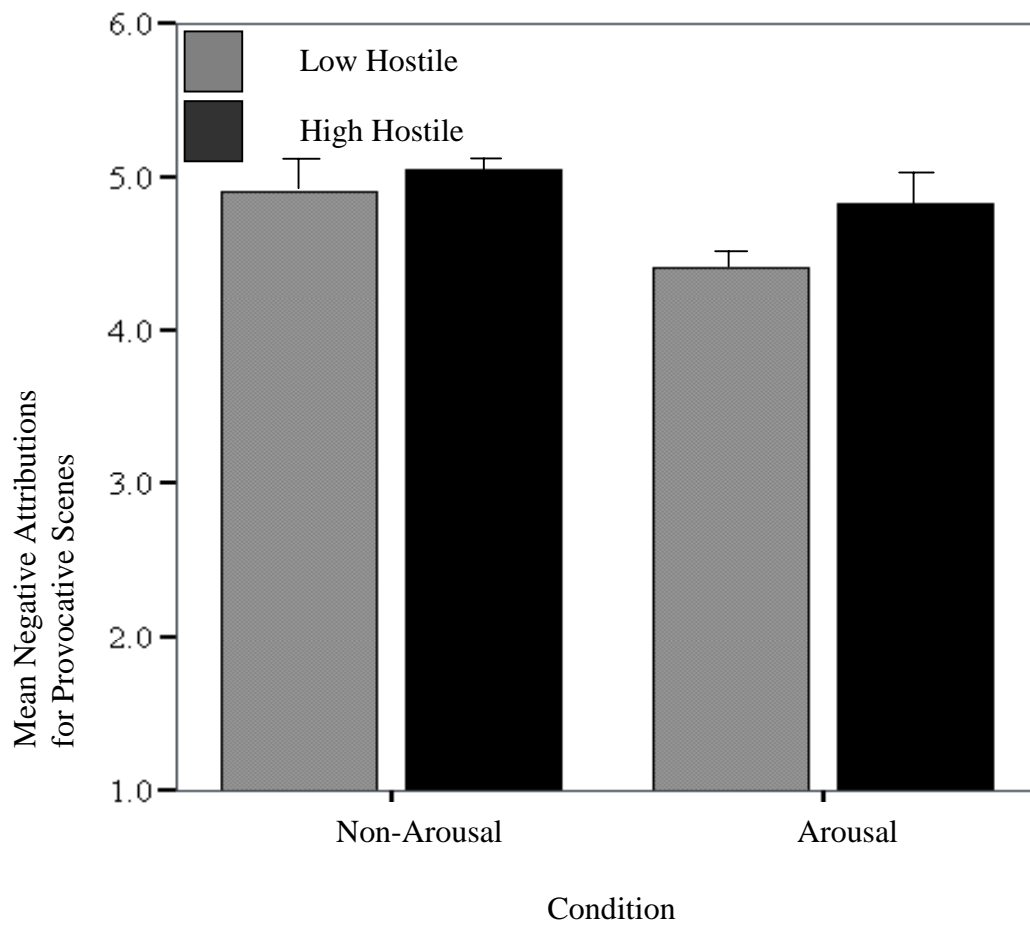


Figure A-7. Mean Negative Attributions to Provocative Scene of High and Low Hostile Males in the Non-Arousal and Arousal Inducing Condition

APPENDIX B

TABLES OF THE MEAN VALUES OF THE EXPERIMENTAL VARIABLES

Hostility Low/High Hostile	Condition Non-Arousal/ Arousal		Positive Affect	Negative Affect
Low	Non-Arousal	Mean	2.9350	1.600
		S.D.	.9816	.7659
		N	16	16
	Arousal	Mean	2.4223	2.6692
		S.D.	.6219	.8300
		N	13	13
	Total	Mean	2.0752	2.0793
		S.D.	.8278	.9500
		N	29	29
High	Non-Arousal	Mean	2.5036	1.9714
		S.D.	.7853	.7141
		N	14	14
	Arousal	Mean	2.4236	3.1500
		S.D.	.8009	1.2495
		N	14	14
	Total	Mean	2.4636	2.5607
		S.D.	.7794	1.16500
		N	28	28

Table B-1. Mean Self-Reported Positive and Negative Affect of High and Low Hostile Males in Non-Arousal and Arousal Inducing Conditions

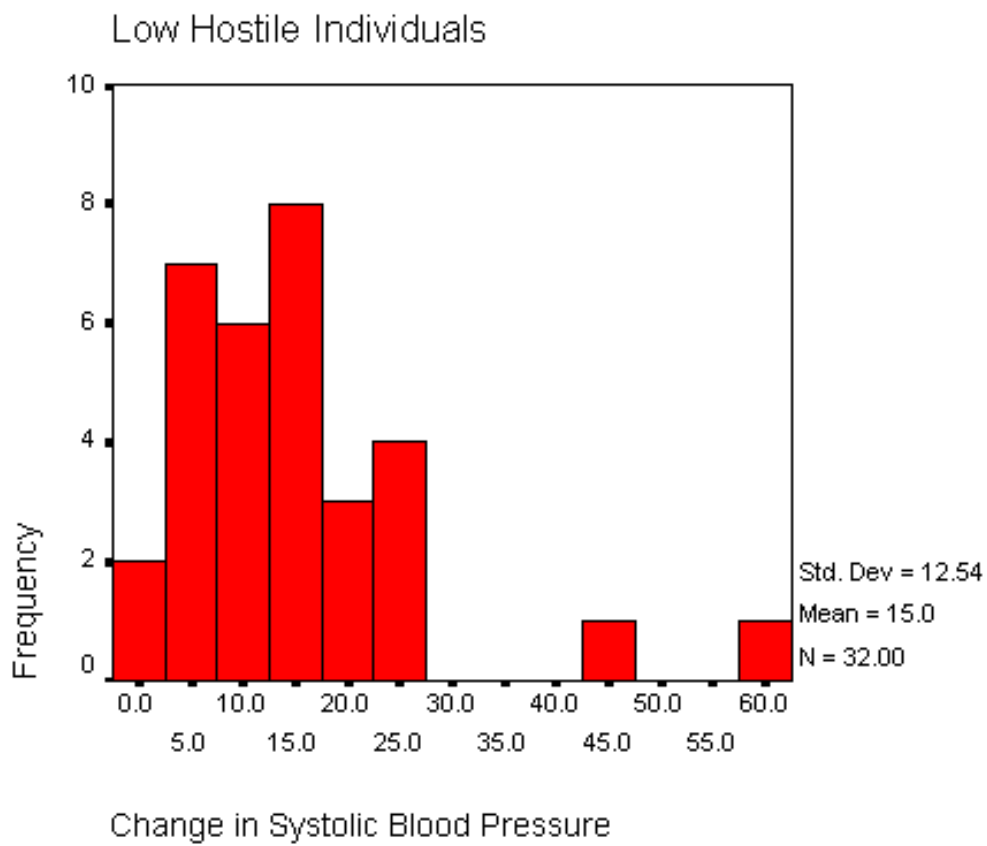
Hostility Low/High Hostile	Condition Non-Arousal/ Arousal		Systolic Blood Pressure	Diastolic Blood Pressure	Heart Rate
Low	Non-Arousal	Mean	7.9375	6.4313	8.8875
		S.D.	5.3480	5.6149	6.4343
		N	16	16	16
	Arousal	Mean	17.4154	10.0692	16.3846
		S.D.	6.8064	8.8480	9.6137
		N	13	13	13
	Total	Mean	12.1862	8.0621	12.2483
		S.D.	7.6280	7.3370	8.7285
		N	29	29	29
High	Non-Arousal	Mean	12.3214	4.3807	6.1214
		S.D.	15.0021	7.1543	4.4634
		N	14	14	14
	Arousal	Mean	24.500	12.7571	9.7857
		S.D.	11.2417	5.4721	4.8169
		N	14	14	14
	Total	Mean	18.4107	8.5689	7.9536
		S.D.	14.4105	7.5666	4.9239
		N	28	28	28

Table B-2. Systolic Blood Pressure, Diastolic Blood Pressure and Heart Rate Changes of High and Low Hostile Males in the Non-Arousal and Arousal Inducing Condition During the Pre-Experimental Phase

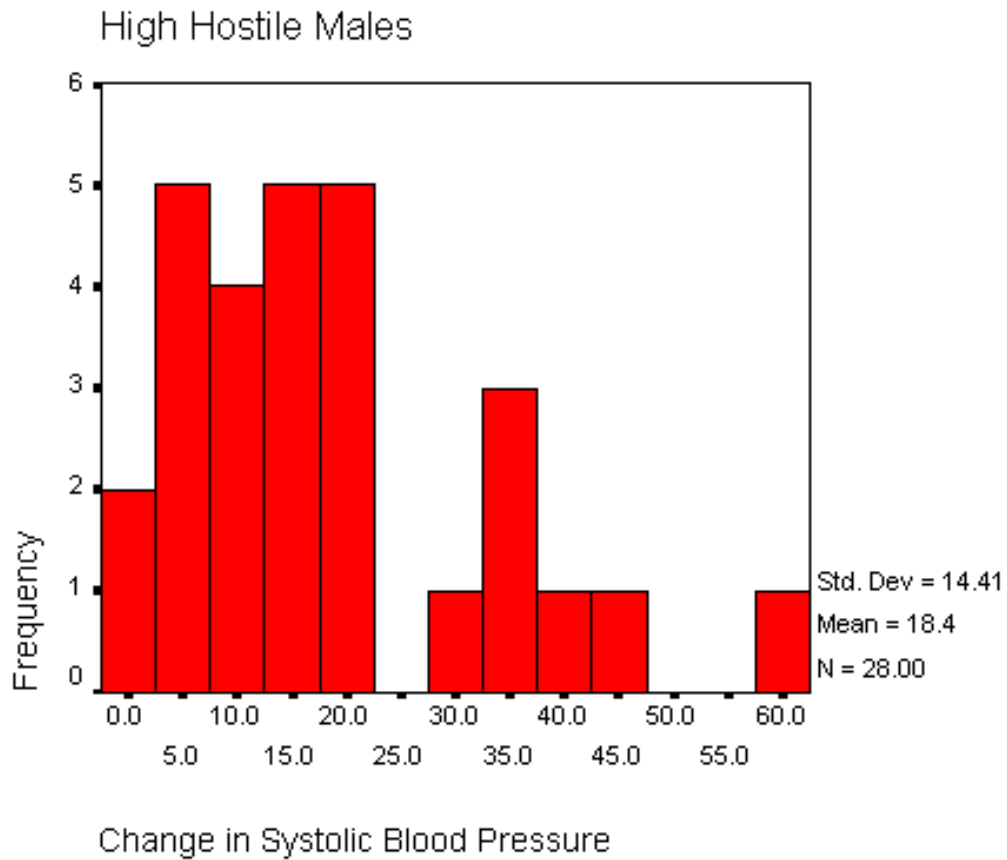
Hostility Low/High Hostile	Condition Non-Arousal/ Arousal		Negative Attributions - Provocative Scenes	Negative Attributions - Neutral Scenes
Low	Non-Arousal	Mean	4.9031	2.4344
		S.D.	.9190	.8350
		N	16	16
	Arousal	Mean	4.4042	3.0221
		S.D.	.7924	1.1626
		N	12	12
	Total	Mean	4.6893	2.6862
		S.D.	.8878	1.0128
		N.	28	28
High	Non-Arousal	Mean	5.0389	2.2625
		S.D.	.6635	.8965
		N	14	14
	Arousal	Mean	4.8171	2.7264
		S.D.	.7003	.9149
		N	14	14
	Total	Mean	4.9280	2.4945
		S.D.	.6789	.9196
		N	28	28

Table B-3. Mean Attributional Responses of High and Low Hostile Males in Non-Arousal and Arousal Inducing Conditions to Provocative and Neutral Scenes

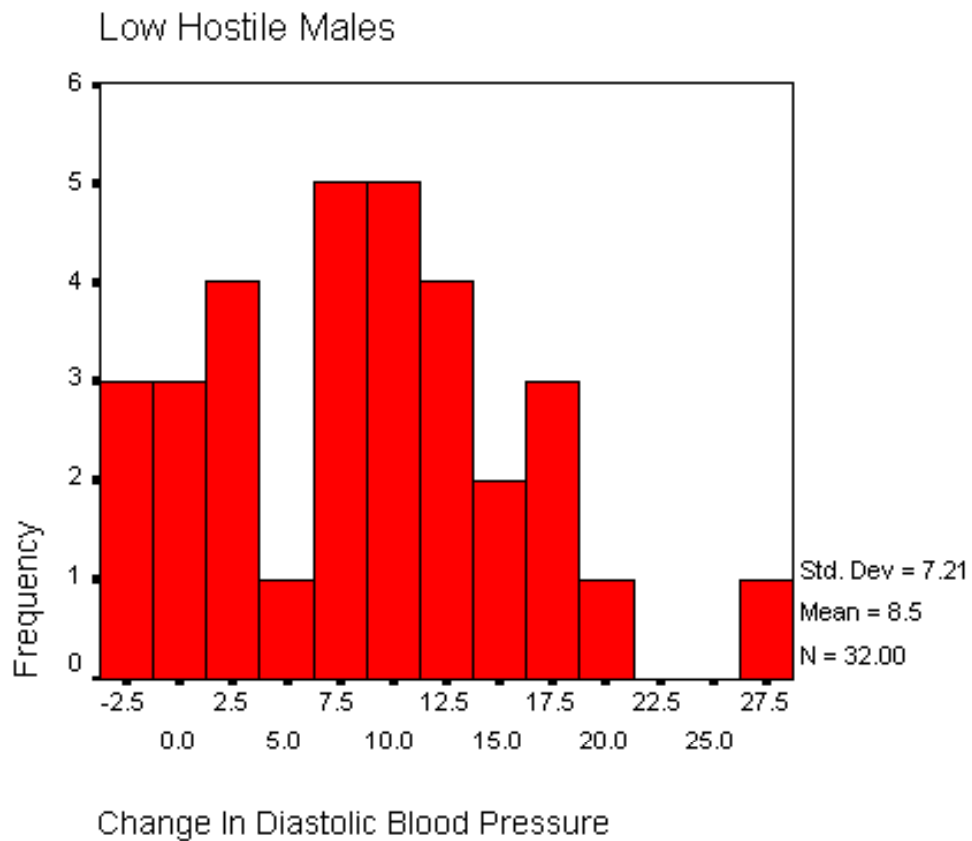
APPENDIX C
**HISTOGRAMS OF CARDIOVASCULAR REACTIVITY DURING THE PRE-
EXPERIMENTAL PHASE**



Histogram C-1 Histogram of the Change in the Systolic Blood Pressure of Low Hostile Males During the Pre-Experimental Phase

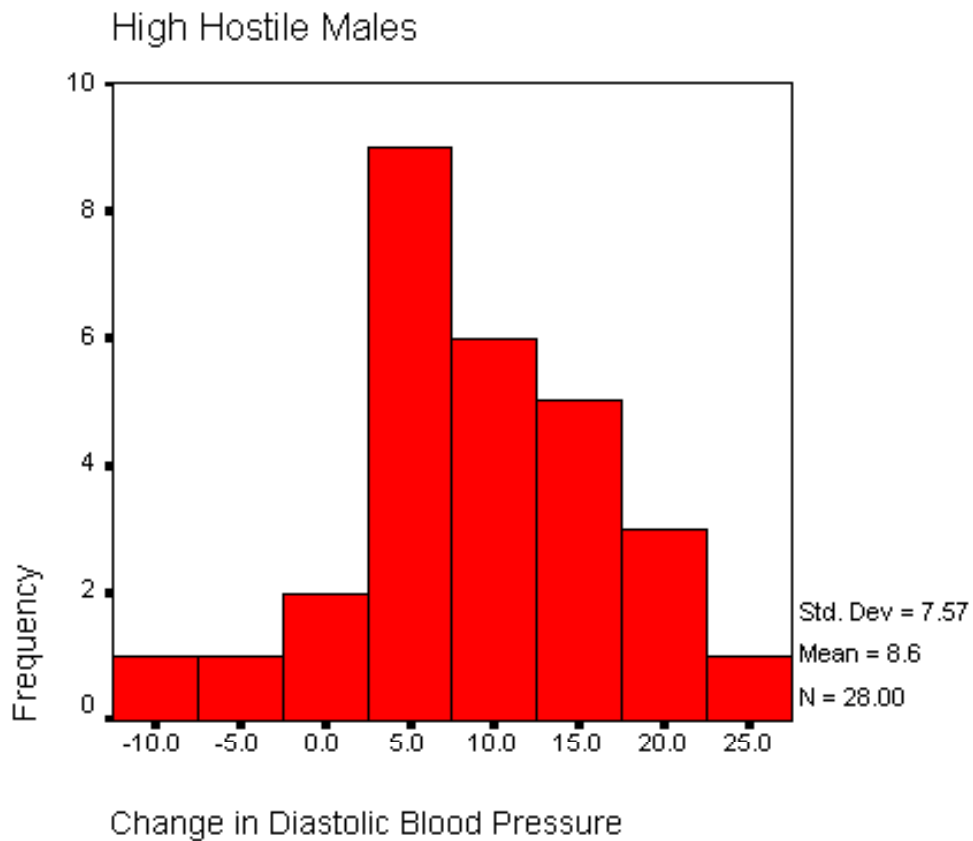


Histogram C-2 Histogram of the Change in the Systolic Blood Pressure of High Hostile Males During the Pre-Experimental Phase

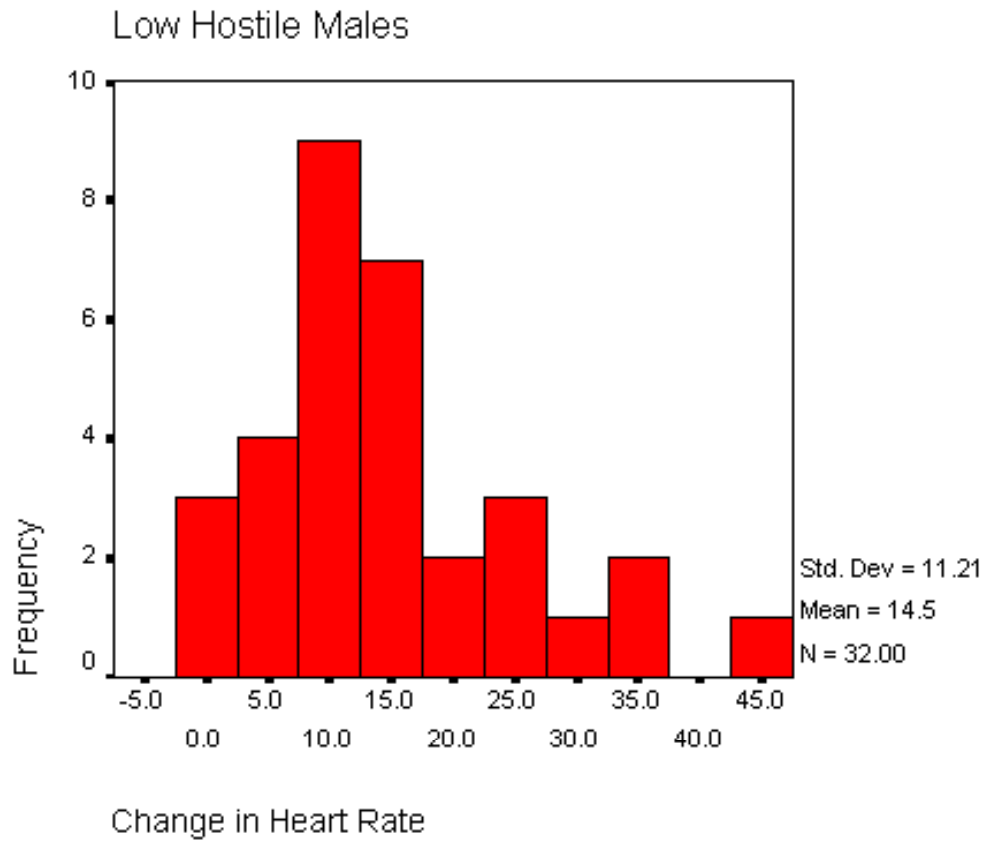


Histogram C-3

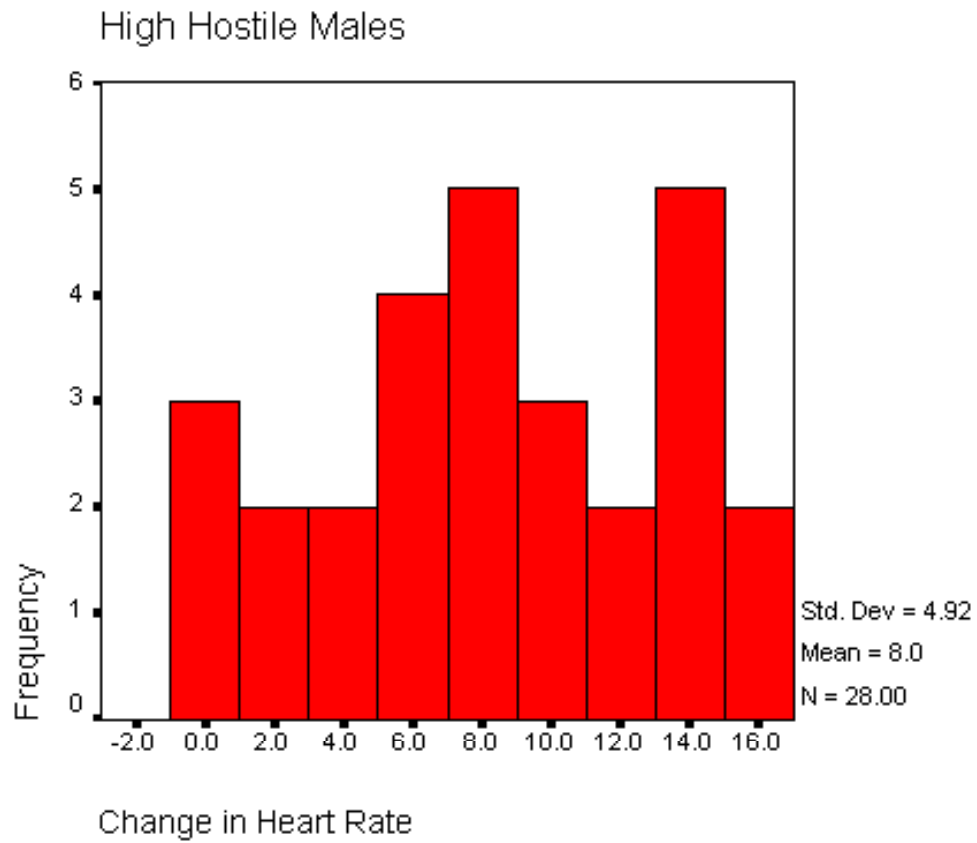
Histogram of the Change in the Diastolic Blood Pressure of Low Hostile Males During the Pre-Experimental Phase



Histogram C-4 Histogram of the Change in the Diastolic Blood Pressure of High Hostile Males During the Pre-Experimental Phase



Histogram C-5 Histogram of the Change in the Heart Rate of Low Hostile Males During the Pre-Experimental Phase



Histogram C-6 Histogram of the Change in the Heart Rate of High Hostile Males During the Pre-Experimental Phase

APPENDIX D

INFORMED CONSENT FOR PARTICIPANTS OF INVESTIGATIVE PROJECTS

Title of Project: Attitudes of Heterosexual College Males

Investigators: Keryl Ann Cosenzo, B. A., Joseph J. Franchina, Ph.D.

I. The Purpose of this Project. You are invited to participate in a study that is examining how people differ in regards to their personal attitudes, emotions, and feelings. A series of questionnaires taking less than one hour will be administered. Your participation will help us to later explore how one's attitudes and emotions affect cognitive abilities.

II. Procedures. You will be asked to come to an assigned room at an assigned time and complete the questionnaires given to you. These questionnaires will assess various characteristics about you and how you cope with events in your life. Additionally, you will receive a form requesting your participation in a subsequent stage of this study. This process should require less than one hour.

III. Risks. There are no apparent risks to you for participating in this study. However, you may contact Counseling Services (231-6557) or the Psychological Services Center of Virginia Tech (231-6914) if you should have any problems.

IV. Benefits. Your responses will provide us with valuable information that will help us more formally explore one's attitudes and feelings.

V. Extent of Anonymity and Confidentiality. The responses that you provide will be completely confidential. That is, your responses will not be released to anyone other than individuals working on the project without your consent. Additionally, your names will not be attached to the questionnaires and this consent form will be collected prior to your receiving the questionnaires. If you choose to participate in the second phase of this study, the contact information you provide will be destroyed upon completion of your participation.

VI. Compensation. You may receive one point extra credit toward your psychology course for participation in the present study. Please check with your instructor or your instructor's syllabus for alternative ways to receive extra credit in the course. Additionally, you may have the opportunity to earn one additional point extra credit through participation in the latter phase of the study.

VII. Freedom to Withdraw. You may skip questions that you do not want to answer and you are free to withdraw your participation at any time without penalty.

VIII. Approval of Research. This research project has been approved, as required, by the Human Subjects Committee of the Department of Psychology and by the Institutional Review Board of Virginia Tech.

IX. Subject's Responsibilities. I voluntarily agree to participate in this study and complete the questionnaires.

X. Subject's Permission. I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Signature

Date

Should I have any questions about this research or its conduct, I may contact:

Primary Researchers:	Keryl A. Cosenzo, Joseph J. Franchina, Ph.D 231-5664
Research Advisor:	Joseph J. Franchina, Ph.D. 231-5664
Chair, Human Subjects Committee:	D. W. Harrison, Ph.D. 231-4422
Chair, Institutional Review Board:	Thomas Hurd 231-5281

You will receive a copy of this form.

APPENDIX E

INFORMED CONSENT FOR PARTICIPANTS OF INVESTIGATIVE PROJECTS

Title of Project: Physiological and Cognitive Correlates of Task Performance

Investigators: Keryl A. Cosenzo, B. A., Joseph J. Franchina, Ph.D.

I. The Purpose of this Project. You are invited to participate in a study about the effects of task performance on the ability to imagine. This research attempts to determine the effects of task performance on cardiovascular reactivity and cognitions.

II. Procedures. You will be hooked up to heart rate and blood pressure equipment. Heart rate and blood pressure will be monitored and recorded before and after each task is completed. This will help determine cardiovascular reactivity to the task. You will also be asked to wear headphones to hear the hypothetical situations that will be played through an audiotape recorder after the completion of each task.

III. Risks. Your involvement in the present study poses no apparent risks, although you may feel some mild discomfort related to the inflation of the blood pressure cuff. Safeguards that will be used include the opportunity to terminate the experiment without penalty to yourself (losing your extra credit points) should you ever feel uncomfortable. Your comfort level will be repeatedly assessed during the experiment via an intercom system. If, after the experiment, you have any problems associated with this study please call Dr. Joseph Franchina, Ph.D. (231-5664) so that he may either assist you directly or direct you to appropriate services.

IV. Benefits. Your participation may help identify the relationship between cardiovascular reactivity and cognitive processes. No guarantee of benefits has been made to encourage you to participate. You may receive a summary of this research when completed by leaving a self-addressed envelope with the investigator.

V. Extent of Anonymity and Confidentiality. The responses that you provide will be completely confidential. That is, your responses will not be released to anyone other than individuals working on the project without your consent. A unique code number will identify you during analyses and any written reports of the research.

VI. Compensation. You may receive one point extra credit toward your psychology course for participation in the present study. Please check with your instructor or your instructor's syllabus for alternative ways to receive extra credit in the course.

VII. Freedom to Withdraw. You are free to withdraw your participation at any time without penalty (i.e., loss of extra credit points).

VIII. Approval of Research. This research project has been approved, as required, by the Human Subjects Committee of the Department of Psychology and by the Institutional Review Board of Virginia Tech.

IX. Subject's Responsibilities. I voluntarily agree to participate in this study.

X. Subject's Permission. I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Signature

Date

Should I have any questions about this research or its conduct, I may contact:

Primary Researchers:	Keryl A. Cosenzo; Joseph J. Franchina, Ph.D. 231-5664
Research Advisor:	Joseph J. Franchina , Ph.D. 231-5664
Chair, Human Subjects Committee:	D. W. Harrison, Ph.D. 231-4422
Chair, Institutional Review Board:	Thomas Hurd 231-5281

You will receive a copy of this form.

APPENDIX F
DEMOGRAPHICS QUESTIONNAIRE

1. Age:_____
2. Academic Level: Circle One
1. Freshman
 2. Sophomore
 3. Junior
 4. Senior
3. Ethnicity: Circle One
1. Caucasian
 2. African-American
 3. Hispanic
 4. Asian-American
 5. Other_____
4. Marital Status: Circle One
1. Single
 2. Married
 3. Separated
 4. Divorced
 5. Other_____
5. Are you currently in a dating or married relationship? YES NO
6. If yes, for how long? Circle One
1. Less than 3 months
 2. Between 3 and 6 months
 3. Between 6 and 12 months
 4. More than 12 months
7. If no:
When did your last relationship end?
- Circle One
1. Less than 3 months ago
 2. Between 3 and 6 months ago
 3. Between 6 and 12 months ago
 4. More than 12 months ago
- How long did that relationship last?
- Circle One
1. Less than 3 months
 2. Between 3 and 6 months
 3. Between 6 and 12 months
 4. More than 12 months
8. How many intimate relationships have you been involved that have lasted at least three months?_____

10. How long (in months) was your longest relationship? _____

APPENDIX G
NEUROLOGICAL SCREENING FORM

Have you ever experienced or been diagnosed with any of the following, or are you experiencing any of the following at present? Please circle the appropriate response and explain “Yes” answers below.

- | | | | |
|-----|--|-----|----|
| 1. | Vision difficulties, blurred vision, or eye disorders | Yes | No |
| 2. | Blindness in either eye | Yes | No |
| 3. | If Yes to either of the above, have problems been corrected | Yes | No |
| 4. | Severe head trauma/injury | Yes | No |
| 5. | Stroke | Yes | No |
| 6. | Learning disabilities (problems of reading, writing, or comprehension) | Yes | No |
| 7. | Epilepsy or seizures | Yes | No |
| 8. | Paralysis | Yes | No |
| 9. | Neurological surgery | Yes | No |
| 10. | Alcohol abuse | Yes | No |
| 11. | Prescription medication | Yes | No |
| 12. | Psychiatric difficulties | Yes | No |
| 13. | Arthritis | Yes | No |
| 14. | Heart or lung problems | Yes | No |
| 15. | Reynaud’s syndrome | Yes | No |
| 16. | Psoriasis or skin problems | Yes | No |

Please explain any “Yes” responses:

APPENDIX H
LATERALITY QUESTIONNAIRE

Circle the appropriate number after each item:

	Right	Left	Both
With which hand would you throw a ball to hit a target?	1	-1	0
With which hand do you draw?	1	-1	0
With which hand do you use an eraser on paper?	1	-1	0
With which hand do you remove the top card when dealing?	1	-1	0
With which foot do you kick a ball?	1	-1	0
If you wanted to pick up a pebble with your toes, which foot would you use?	1	-1	0
If you had to step up onto a chair, which foot would you place on the chair first?	1	-1	0
Which eye would you use to peep through a keyhole?	1	-1	0
If you had to look into a dark bottle to see how full it was, which eye would you use?	1	-1	0
Which eye would you use to sight down a rifle?	1	-1	0
If you wanted to listen to a conversation going on behind a closed door, which ear would you place against the door?	1	-1	0
If you wanted to listen to someone's heartbeat, which ear would you place against their chest?	1	-1	0
Into which ear would you place the earphone of a transistor radio?	1	-1	0

of Right + # of Left = Total Score

_____ + _____ = Total Score

Is mother left or right hand dominant? _____

Is father left or right hand dominant? _____

APPENDIX I
COOK-MEDLEY HOSTILITY SCALE

Directions: If a statement is true or mostly true, as pertaining to you, circle the letter T. If a statement is false or usually not true about you, circle the letter F. Try to give a response to every statement.

1. When I take a new job, I like to be tipped off on who should be gotten next to. T F
2. When someone does me wrong I feel I should pay him back if I can, just for the principle of the thing. T F
3. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first. T F
4. I have often had to take orders from someone who did not know as much as I did. T F
5. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others. T F
6. It takes a lot of argument to convince most people of the truth T F
7. I think most people would lie to get ahead. T F
8. Someone has it in for me. T F
9. Most people are honest chiefly through the fear of getting caught. T F
10. Most people will use somewhat unfair means to gain profit or advantage, rather than to lose it. T F
11. I commonly wonder what hidden reason another person may have for doing something nice for me. T F
12. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important. T F
13. I feel that I have often been punished without cause. T F
14. I am against giving money to beggars. T F

15. Some of my family have habits that bother and annoy me very much. T F
16. My relatives are nearly all in sympathy with me. T F
17. My way of doing things is apt to be misunderstood by others. T F
18. I don't blame anyone for trying to grab everything he can get in this world. T F
19. No one cares much what happens to you. T F
20. I can be friendly with people who do things which I consider wrong. T F
21. It is safer to trust nobody. T F
22. I do not blame a person for taking advantage of someone who lays himself open to it. T F
23. I have often felt that strangers were looking at me critically. T F
24. Most people make friends because friends are likely to be useful to them. T F
25. I am sure I am being talked about. T F
26. I am likely not to speak to people until they speak to me. T F
27. Most people inwardly dislike putting themselves out to help other people. T F
28. I tend to be on guard with people who are somewhat more friendly than I had expected. T F
29. I have sometimes stayed away from another person because I feared saying or doing something that I might regret afterwards. T F
30. People often disappoint me. T F
31. I like to keep people guessing what I'm going to do next. T F
32. I frequently ask people for advice. T F
33. I am not easily angered. T F
34. I have often met people who were supposed to be experts who were no better than I. T F

35. I would certainly enjoy beating a crook at his own game. T F
36. It makes me think of failure when I hear of the success of someone I know well. T F
37. I have at times had to be rough with people who were rude or annoying. T F
38. People generally demand more respect for their own rights than they are willing to allow for others. T F
39. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done. T F
40. I am often inclined to go out of my way to win a point with someone who has opposed me. T F
41. I am quite often not in on the gossip and talk of the group I belong to. T F
42. The man who had most to do with me when I was child (such as my father, step-father, etc.) was very strict with me. T F
43. I have often found people jealous of my good ideas just because they had not thought of them first. T F
44. When a man is with a woman he is usually thinking about things related to her sex. T F
45. I do not try to cover up my poor opinion or pity of a person so that he won't know how I feel. T F
46. I have frequently worked under people who seem to have things to that they get credit for good work but are able to pass off mistakes onto those under them. T F
47. I strongly defend my own opinions as a rule. T F
48. People can pretty easily change me even though I thought that my mind was already made up on a subject. T F
49. Sometimes I am sure that other people can tell what I am thinking. T F
50. A large number of people are guilty of bad sexual conduct. T F

APPENDIX J
CONFLICT TACTICS SCALE

For the questions that follow, please think of your current relationship (if you have been dating for at least three months) or the most recent relationship in which you dated at three months. Read the following statements describing things that you might have said or done. In the space provided next to each question indicate how often you did or said the following during the most recent six-month period of your relationship (or entire relationship of less than six months). Use the following scale:

- 1 = Never
- 2 = Once or Twice
- 3 = Three to Five Times
- 4 = Six to Ten Times
- 5 = More than Ten Times

- 1. Discussed as issue calmly
- 2. Got information to prove your point
- 3. Brought in someone to help settle things
- 4. Insulted or swore at your partner
- 5. Sulked or refused to talk about it
- 6. Stomped out of the room or house
- 7. Cried
- 8. Did or said something to spite your partner
- 9. Threatened to hit or throw something at your partner
- 10. Threw, smashed, hit or kicked something
- 11. Pushed, grabbed, or shoved your partner
- 12. Slapped your partner
- 13. Kicked, bit, or hit your partner with a fist
- 14. Hit or tried to hit your partner with something

- 15. Beat your partner up
- 16. Threatened your partner with a knife or gun
- 17. Used a knife, gun or weapon on your partner

APPENDIX K
MICHIGAN ALCOHOL SCREENING TEST

1. Do you feel you are a normal drinker? Yes / No
2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before? Yes / No
3. Do your parents ever worry or complain about your drinking? Yes / No
4. Can you stop drinking without a struggle after one or two drinks? Yes / No
5. Do you ever feel bad about your drinking? Yes / No
6. Do friends or relatives think you are a normal drinker? Yes / No
7. Do you ever try to limit your drinking to certain times of the day or to certain places? Yes / No
8. Are you always able to stop drinking when you want to? Yes / No
9. Have you ever attended a meeting of Alcoholics Anonymous? Yes / No
10. Have you ever gotten into fights while drinking? Yes / No
11. Has drinking ever created problems with you and your significant other? Yes / No
12. Has any family member ever gone to anyone for help about your drinking? Yes / No
13. Have you ever lost friends or girlfriends because of drinking? Yes / No
14. Have you ever gotten into trouble at work because of drinking? Yes / No
15. Have you ever lost a job because of drinking? Yes / No
16. Have you ever neglected your obligations, your family or your work for two or more days because you were drinking? Yes / No
17. Do you ever drink before noon? Yes / No
18. Have you ever been told you have live trouble? Yes / No

19. Have you ever had delirium tremens, severe shaking, heard voices or seen things that weren't there after heavy drinking? Yes / No
20. Have you ever gone to anyone for help about your drinking? Yes / No
21. Have you ever been in a hospital because of drinking? Yes / No
22. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem? Yes / No
23. Have you ever been seen at a psychiatric or mental health clinic or gone to a doctor, social worker or clergyman for help with an emotional problem in which drinking played a part? Yes / No
24. Have you ever been arrested, even for a few hours, because of drunk behavior? Yes / No
25. Have you ever been arrested for drunk driving or driving after drinking? Yes / No

APPENDIX L
EMOTION QUESTIONNAIRE

Indicate by circling on the answer sheet, how much of an emotion you feel right now as a result of the scene you just heard. If you do not feel any of a particular emotion, circle 1. If you feel a lot, circle 5, or an intermediate amount, circle 3, ect.

- | | | | | | |
|-------------------------|----------|----------|----------|----------|----------|
| 1.) Peacefulness | 1 | 2 | 3 | 4 | 5 |
| 2.) Interest | 1 | 2 | 3 | 4 | 5 |
| 3.) Relaxation | 1 | 2 | 3 | 4 | 5 |
| 4.) Frustrated | 1 | 2 | 3 | 4 | 5 |
| 5.) Happiness | 1 | 2 | 3 | 4 | 5 |
| 6.) Uneasiness | 1 | 2 | 3 | 4 | 5 |
| 7.) Anger | 1 | 2 | 3 | 4 | 5 |
| 8.) Pleasantness | 1 | 2 | 3 | 4 | 5 |
| 9.) Anxious | 1 | 2 | 3 | 4 | 5 |
| 10.) Enjoyment | 1 | 2 | 3 | 4 | 5 |
| 11.) Irritated | 1 | 2 | 3 | 4 | 5 |
| 12.) Arousal | 1 | 2 | 3 | 4 | 5 |

APPENDIX M
NEUTRAL AND PROVOCATIVE VIGNETTES

Vignette #1 – Neutral

You are right in the middle of watching your favorite program on TV. Suddenly your front door slams shut. You jump out of your chair to see what's wrong. You watch as your girlfriend storms through the kitchen, slams down her books and keys on the counter and yells, "I am so pissed off. I hate this place, I hate going to classes, I hate all these stupid things my professors make me do. Why in the hell do I put myself through this crap? Everything went wrong today. I could scream at my Biology professor for flunking me again!"

1	2	3	4	5	6
Disagree Strongly	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Agree Strongly

1. My partner did this "on purpose".....1 2 3 4 5 6
2. My partner did this to improve our relationship.....1 2 3 4 5 6
3. My partner deserves to be blamed for acting this way.....1 2 3 4 5 6
4. My partner was acting selfishly.....1 2 3 4 5 6
5. She was trying to make me angry.....1 2 3 4 5 6

Vignette #2 – Provocative

You plan a romantic dinner for you and your girlfriend for 6 o'clock at a nice restaurant and look forward to going home with her. When you arrive at the restaurant she is not there. You wait for thirty minutes. Then the hostess comes over and tells you that your girlfriend called and said she wasn't coming. You call her at home to get an explanation. When she answers the phone she says, "I know I told you I'd meet you but I wanted to talk to my friend first, and he is here right now. Besides you've been treating me like crap recently. I don't want to see you tonight. I don't have anymore time to talk to you. Good-bye!"

1	2	3	4	5	6
Disagree	Disagree	Disagree	Agree	Agree	Agree
Strongly	Somewhat	Slightly	Slightly	Somewhat	Strongly

6. My partner did this "on purpose"1 2 3 4 5 6
7. My partner did this to improve our relationship.....1 2 3 4 5 6
8. My partner deserves to be blamed for acting this way.....1 2 3 4 5 6
9. My partner was acting selfishly.....1 2 3 4 5 6
1. She was trying to make me angry.....1 2 3 4 5 6

Vignette #3 – Neutral

You and your girlfriend are getting ready to eat dinner together. You just got back from picking up some fast food and you sit down with her. Suddenly, the phone rings and your girlfriend answers it. You do not know who she is talking with, but you notice that her voice starts to tremble and she is becoming upset. She hangs up the phone and starts to pace around the room. You ask her about the call and why she is so upset. She says, "That was one of those damn credit people on the phone again. I hate talking to those jerks. They always try to pressure me into paying right away. I don't even know why I answer the phone. Next time one of those people call again I am going to tell them to go to hell!"

1	2	3	4	5	6
Disagree	Disagree	Disagree	Agree	Agree	Agree
Strongly	Somewhat	Slightly	Slightly	Somewhat	Strongly

10. My partner did this "on purpose"1 2 3 4 5 6

11. My partner did this to improve our relationship.....1 2 3 4 5 6

12. My partner deserves to be blamed for acting this way.....1 2 3 4 5 6

13. My partner was acting selfishly.....1 2 3 4 5 6

1. She was trying to make me angry.....1 2 3 4 5 6

Vignette #4 - Provocative

At a party, you notice that your girlfriend has been talking, laughing, and carrying on with a good-looking guy for over half an hour. They appear to be having a great time together. You can't remember the last time your girlfriend laughed that hard. She seems to be flirting with him. You watch as she puts her arm around his shoulder. You've watched her do this with other guys in the past. You walk toward your girlfriend and she yells, "Don't you start with that jealousy crap again. I can talk with whoever I want. I am having an intelligent conversation for a change. I am not going to let you ruin my evening again. You better leave us alone.

1	2	3	4	5	6
Disagree	Disagree	Disagree	Agree	Agree	Agree
Strongly	Somewhat	Slightly	Slightly	Somewhat	Strongly

1. My partner did this "on purpose".....1 2 3 4 5 6
2. My partner did this to improve our relationship..... 1 2 3 4 5 6
3. My partner deserves to be blamed for acting this way..... 1 2 3 4 5 6
4. My partner was acting selfishly.....1 2 3 4 5 6
5. She was trying to make me angry..... 1 2 3 4 5 6

APPENDIX N
INSTRUCTIONS FOR RUNNING SUBJECTS IN THE SCREENING PHASE

- Enter room 10 minutes prior to assigned screening time.
- When all the participants have entered the room close the door.
- Say to the participants,
“Thank you for participating in this study. Your participation will better help us understand the attitudes and feelings of college students. I am now going to hand out the informed consent form. You will each receive two copies of the form. Please read and sign both copies. One is for our records and the other is for you to keep.”
- Hand out the informed consent forms.
- After all the forms have been signed and collected say,
This is the first part of a two part study. If you would like to participate in the next part of the study, please complete the form on the front of the packet so that you may be contacted. In few moments I am going to hand out the packet of questionnaires. Please answer each question thoroughly and as truthfully as possible. If any question does not seem to pertain to you, please answer the question as best as you can. Do not skip any questions and please check that you have answered everything before handing in your packet. You may leave as soon as you are finished. Thank you for your time and participation.
- Hand out the packets.

APPENDIX O

INSTRUCTIONS FOR RUNNING SUBJECTS IN THE EXPERIMENTAL PHASE

Ten Minutes Before Subject Arrives

- Lights on in the main conference room.
- Clear any material from conference table and place two consent forms and an opscan form(extra credit).
- Turn “Experiment in Progress” sign on conference room door and both lab doors.
- In Subject Room Check:
Door unlocked
Chair upright
Blood pressure lines connected and cuff positioned on the back of subject chair.
- In Experimenter Room:
Plug-in adapter for BP monitor and depress power button
Make sure power line is securely connected to BP machine
Turn on intercom - Set at level 2
Plug in tape recorder and put in tape
Place BP data sheet from shelf in front of BP machine
Place two pens next to data sheet
Place stop-watch from top drawer in front of BP machine
Leave room doors open

Running Subjects

- Greet subjects by saying, “Hello, are you ____? Great, thanks for coming today.
- Ask subject to take a seat at the conference table.
- Close the conference room door
- After subject is seated say:
“Thank you for participating in this study. Before we begin, please read these consent forms. If you have any questions, please ask. Please sign and date both copies. One is for our records and the other if for you to keep.”
- After the subjects signs the consent form have him complete the opscan if he is participating for extra credit for Intro Psych (Name, Seat # 022, and SS#). If he is participating for extra

credit for another course sign and date the form and mark that the individual will receive one point of extra credit for participating.

- Explain the procedure to the subjects as follows:

“Thank you for your participation in this study. This aim of this study is to understand the effects of task performance on a person’s ability to imagine. This experiment will require you to do several different mental tasks. I will explain each task to you before you have to do the task. You will wear headphones to hear components of the task and to block out any distracting noise. Your heart rate and blood pressure will be monitored several times during the experiment. I will place a blood pressure cuff on your left arm to measure your heart rate and blood pressure. Your heart rate and blood pressure will be measured several times before and after the task has been completed. This means that you will feel the cuff on your arm inflate and deflate two times. Most college students find these tasks to be fairly simple and usually can do them very quickly and with a minimal amount of errors. After the task you will then listen to a scene depicting a situation between two people. During the scene really try to imagine that it is you in the scene. After the scene is over I will ask you several questions about the scene.

You will perform a sample mental task before the main experiment. This task will be similar to the tasks used in the main experiment. After you complete the task I am going to ask you to fill out a questionnaire. Do you have any questions before we begin?

- Answer the questions briefly and direct him into the subject room.
- Ask the participant to be seated in the chair. Once subject’s seated say, **“Please sit up-right in the chair. It is very important that you do not slouch or shift your body once you are seated. Try to keep your feet flat on the floor. Use the markers as a guideline for your feet.”**
- Depending on his clothing, ask the subject to lift the sleeve of his shirt so that you can locate the position at which to place the microphone of the blood pressure cuff.
- Open the cuff and slide over the subject’s hand and arm to the position just below the elbow.
- Locate the brachial artery 2.5 centimeters above the crook of the elbow by palpitation.
- Slide cuff - leaving 2-3 fingers space between the cuff and subject’s arm.
- Check spacing
- Ask the participant if the cuff is comfortable. Then say to him, **“Now that the cuff is in place, do not move you head, shoulder, wrist or hand from their current position because it may shift the cuff and make our readings inaccurate.”**

- **“I am now going to put on the headphones. If you need to adjust them, please do so with your right hand.”**
- Put headphones on the subject and then say,
“Please do not turn around during the experiment. Try to keep your body still. Just speak clearly and I will be able to hear you. Are there any questions before we begin?”
- Answer any questions briefly.
- **“I am now going to the other room from which I will give you further instructions.**
- Close the experiment room door.

Pre-experimental Phase: Arousal Inducing Task Condition:

- **“I am going to ask you to relax for 3 minutes while I prepare and then I will take two baseline measures”**
- Start stopwatch
- After three minutes take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 1-#1
- Immediately press the start button again
- Record reading on data sheet under baseline 1-#2
- If diastolic or systolic readings differ by more than 20mm or heart rate differs by more than 6 beat per minute take a third baseline by pressing start. Record reading under baseline 1-#3
- Then say to subject,
“ We are now going to start the first serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it. (Press play on tape recorder) Can you hear it okay?”
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 7’s from 1238.”**
- Press play on the tape recorder. Say’ **“Start”**

- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 1-#1
- At the end of two minutes, tell the participant to stop counting.
- Say to the participant, **On the chair next to you is a questionnaire. Please answer all the questions.**
- When the participant has completed the questionnaire tell him you will be entering the room to remove the blood pressure cuff.
- Remove the cuff and say, **“We are now going to take a short break. I need to set-up for the next part of the experiment. During this time you may leave and get some water or just walk down the hall. Please do not leave this floor and come back in 5 minutes.”**
- When the participant leaves, put the questionnaires for the vignettes in the subject room.
- When the participant returns, direct him back into the chair.
- Ask the participant to be seated in the chair. Once subject’s seated say, **“Please sit up-right in the chair. It is very important that you do not slouch or shift your body once you are seated. Try to keep your feet flat on the floor. Use the markers as a guideline for your feet.”**
- Depending on his clothing, ask the subject to lift the sleeve of his shirt so that you can locate the position at which to place the microphone of the blood pressure cuff.
- Open the cuff and slide over the subject’s hand and arm to the position just below the elbow.
- Locate the brachial artery 2.5 centimeters above the crook of the elbow by palpitation.
- Slide cuff - leaving 2-3 fingers space between the cuff and subject’s arm.
- Check spacing
- Ask the participant if the cuff is comfortable. Then say to him, **“Now that the cuff is in place, do not move you head, shoulder, wrist or hand from their current position because it may shift the cuff and make our readings inaccurate.”**
- **“I am now going to put on the headphones. If you need to adjust them, please do so with your right hand.”**

- Put headphones on the subject and then say,
"Please do not turn around during the experiment. Try to keep your body still. Just speak clearly and I will be able to hear you. During this part of the experiment you will complete mental tasks which college student find simple to do. After the task you will listen to a vignette. After each vignette I am going to ask you questions about the vignette you had just heard. You will answer the questions on that paper (Point to Clipboard) Are there any questions before we begin?"
- Answer any questions briefly.
- **"I am now going to the other room from which I will give you further instructions. Remember- when you hear the scene, really to imagine that it is you in the scene.**
- Close the experiment room door.

Arousal Inducing Task Condition:

- **"I am going to ask you to relax for 3 minutes while I prepare and then I will take two baseline measures"**
- Start stopwatch
- After three minutes take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 1-#1
- Immediately press the start button again
- Record reading on data sheet under baseline 1-#2
- If diastolic or systolic readings differ by more than 20mm or heart rate differs by more than 6 beat per minute take a third baseline by pressing start. Record reading under baseline 1-#3
- Then say to subject,
" We are now going to start the first serial subtraction task. I am going to ask you to subtract from a number I'll tell you, keeping time with the metronome. Here is the sound of it. (Press play on tape recorder) Can you hear it okay? "
- **"When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 7's from 1534."**

- Press play on the tape recorder. Say' **“Start”**
- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 1-#1
- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.
- Press stop on the tape recorder when the vignette is over.
- Ask the participant the attached attributional style questions.
- Press start on the stop-watch and allow 1 minute to pass before taking the next set of readings
- During break say to subject, **“We are now going to take a short break. During this break I would like you to rate how comfortable the blood pressure cuff feels. On a scale from 1 to 10, ten being very comfortable, how comfortable is the cuff?”**
- If rating is less than 5 ask the subject if he is comfortable enough to continue.
- After 1 minute take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 2-#1
- Immediately press start button again
- Record reading on data sheet under baseline 2-#2
- Then say to subject,
“ We are now going to start the first serial subtraction task. I am going to ask you to subtract from a number I'll tell you, keeping time with the metronome. Here is the sound of it. (Press play on tape recorder) Can you hear it okay? “
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 7's from 895.”**
- Press play on the tape recorder. Say' **“Start”**

- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 2-#1
- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.
- Press stop on the tape recorder when the vignette is over.
- Ask the participant the attached attributional style questions.
- Press start on the stop-watch and allow 1 minute to pass before taking the next set of readings
- During break say to subject,
“We are now going to take a short break. During this break I would like you to rate how comfortable the blood pressure cuff feels. On a scale from 1 to 10, ten being very comfortable, how comfortable is the cuff?”
- If rating is less than 5 ask the subject if he is comfortable enough to continue.
- Take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 3-#1
- Immediately press start button again
- Record reading on data sheet under baseline 3-#2
- **“We are now going to start the next serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it (Press play on tape recorder). Can you hear it okay?”**
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 7’s from 1432.”**
- Say’ **“Start”**
- Press start on the stopwatch.

- At 1 minute press start button and record on data sheet under task 3-#1.
- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.
- Press stop on the tape recorder when the vignette is over.
- Ask the participant the attached attributional style questions.
- Press start on the stop-watch and allow 1 minute to pass before taking the next set of readings
- During break say to subject,
“We are now going to take short break. During this break I would like you to rate how comfortable the blood pressure cuff feels. On a scale from 1 to 10, ten being very comfortable, how comfortable is the cuff?”
- If rating is less than 5 ask the subject if he is comfortable enough to continue.
- Take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 4-#1
- Immediately press start button again
- Record reading on data sheet under baseline 4-#2
 Say to subject,
“We are now going to start the next serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it (Press play on tape recorder). Can you hear it okay?”
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 7’s from 2562.”**
- Say’ **“Start”**
- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 4-#1.

- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.
- Press stop on the tape recorder when the vignette is over.
- Ask the participant the attached attributional style questions.
- Inform the subject that you will be entering the room to remove the blood pressure cuff.
- After the blood pressure cuff is removed, Say to the subject,
The tasks you performed in this study, such as the serial subtraction task, were designed to be challenging. Only four of the anagrams in each anagram solution task were actually solvable. Your performance on these tasks does not reflect anything about your ability level or intelligence.
- Thank the subject for his participation.

Non-Arousal Inducing Tasks

Pre-experimental Phase:

- **“I am going to ask you to relax for 3 minutes while I prepare and then I will take two baseline measures”**
- Start stopwatch
- After three minutes take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 1-#1
- Immediately press the start button again
- Record reading on data sheet under baseline 1-#2
- If diastolic or systolic readings differ by more than 20mm or heart rate differs by more than 6 beat per minute take a third baseline by pressing start. Record reading under baseline 1-#3
- Then say to subject,
“ We are now going to start the first serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it. (Press play on tape recorder) Can you hear it okay? “
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 1’s from 1238.”**
- Press play on the tape recorder. Say’ **“Start”**
- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 1-#1
- At the end of two minutes, tell the participant to stop counting.
- Say to the participant, **On the chair next to you is a questionnaire. Please answer all the questions.**

- When the participant has completed the questionnaire tell him you will be entering the room to remove the blood pressure cuff.
- Remove the cuff and say, **“We are now going to take a short break. I need to set-up for the next part of the experiment. During this time you may leave and get some water or just walk down the hall. Please do not leave this floor and come back in 5 minutes.”**
- When the participant leaves, put the questionnaires for the vignettes in the subject room.
- When the participant returns, direct him back into the chair.
- Ask the participant to be seated in the chair. Once subject’s seated say, **“Please sit up-right in the chair. It is very important that you do not slouch or shift your body once you are seated. Try to keep your feet flat on the floor. Use the markers as a guideline for your feet.”**
- Depending on his clothing, ask the subject to lift the sleeve of his shirt so that you can locate the position at which to place the microphone of the blood pressure cuff.
- Open the cuff and slide over the subject’s hand and arm to the position just below the elbow.
- Locate the brachial artery 2.5 centimeters above the crook of the elbow by palpitation.
- Slide cuff - leaving 2-3 fingers space between the cuff and subject’s arm.
- Check spacing
- Ask the participant if the cuff is comfortable. Then say to him, **“Now that the cuff is in place, do not move you head, shoulder, wrist or hand from their current position because it may shift the cuff and make our readings inaccurate.”**
- **“I am now going to put on the headphones. If you need to adjust them, please do so with your right hand.”**
- Put headphones on the subject and then say, **“Please do not turn around during the experiment. Try to keep your body still. Just speak clearly and I will be able to hear you. During this part of the experiment you will complete mental tasks which college student find simple to do. After the task you will listen to a vignette. After each vignette I am going to ask you questions about the vignette you had just heard. You will answer the questions on that paper (Point to Clipboard) Are there any questions before we begin?”**
- Answer any questions briefly.

- **“I am now going to the other room from which I will give you further instructions. Remember- when you hear the scene, really to imagine that it is you in the scene.**
- Close the experiment room door.

Non-Arousal Inducing Task Condition:

- **“I am going to ask you to relax for 3 minutes while I prepare and then I will take two baseline measures”**
- Start stopwatch
- After three minutes take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 1-#1
- Immediately press the start button again
- Record reading on data sheet under baseline 1-#2
- If diastolic or systolic readings differ by more than 20mm or heart rate differs by more than 6 beat per minute take a third baseline by pressing start. Record reading under baseline 1-#3
- Then say to subject,
“ We are now going to start the first serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it. (Press play on tape recorder) Can you hear it okay? “
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 1’s from 1534.”**
- Press play on the tape recorder. Say’ **“Start”**
- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 1-#1
- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.

- Press stop on the tape recorder when the vignette is over.
- Ask the participant the attached attributional style questions.
- Press start on the stop-watch and allow 1 minute to pass before taking the next set of readings
- During break say to subject, **“We are now going to take a short break. During this break I would like you to rate how comfortable the blood pressure cuff feels. On a scale from 1 to 10, ten being very comfortable, how comfortable is the cuff?”**
- If rating is less than 5 ask the subject if he is comfortable enough to continue.
- After 1 minute take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 2-#1
- Immediately press start button again
- Record reading on data sheet under baseline 2-#2
- Then say to subject,
“ We are now going to start the first serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it. (Press play on tape recorder) Can you hear it okay? “
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 1’s from 895.”**
- Press play on the tape recorder. Say’ **“Start”**
- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 2-#1
- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.
- Press stop on the tape recorder when the vignette is over.

- Ask the participant the attached attributional style questions.
- Press start on the stop-watch and allow 1 minute to pass before taking the next set of readings
- During break say to subject,
“We are now going to take a short break. During this break I would like you to rate how comfortable the blood pressure cuff feels. On a scale from 1 to 10, ten being very comfortable, how comfortable is the cuff?”
- If rating is less than 5 ask the subject if he is comfortable enough to continue.
- Take two baseline measures.
- Press start button
- Record reading on data sheet under baseline 3-#1
- Immediately press start button again
- Record reading on data sheet under baseline 3-#2
- **“We are now going to start the next serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it (Press play on tape recorder). Can you hear it okay?”**
- **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 1’s from 1432.”**
- Say’ **“Start”**
- Press start on the stopwatch.
- At 1 minute press start button and record on data sheet under task 3-#1.
- At the end of two minutes, tell the participant to stop counting.
- Press play on the vignette recorder.
- Press stop on the tape recorder when the vignette is over.
- Ask the participant the attached attributional style questions.

- Press start on the stop-watch and allow 1 minute to pass before taking the next set of readings
 - During break say to subject,
“We are now going to take short break. During this break I would like you to rate how comfortable the blood pressure cuff feels. On a scale from 1 to 10, ten being very comfortable, how comfortable is the cuff?”
 - If rating is less than 5 ask the subject if he is comfortable enough to continue.
 - Take two baseline measures.
 - Press start button
 - Record reading on data sheet under baseline 4-#1
 - Immediately press start button again
 - Record reading on data sheet under baseline 4-#2
- Say to subject,
- **“We are now going to start the next serial subtraction task. I am going to ask you to subtract from a number I’ll tell you, keeping time with the metronome. Here is the sound of it (Press play on tape recorder). Can you hear it okay?”**
 - **“When I count to three and say start begin counting backwards outloud to the beat of the metronome until I instruct you to stop. Do you understand this task? When I say start begin counting backwards by 1’s from 2562.”**
 - Say’ **“Start”**
 - Press start on the stopwatch.
 - At 1-minute press start button and record on data sheet under task 4-#1.
 - At the end of two minutes, tell the participant to stop counting.
 - Press play on the vignette recorder.
 - Press stop on the tape recorder when the vignette is over.
 - Ask the participant the attached attributional style questions.
 - Inform the subject that you will be entering the room to remove the blood pressure cuff.

- Thank the subject for his participation.

VITAE

KERYL ANN COSENZO

e-mail

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- EDUCATION:** VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY-
Blacksburg, Virginia
- 1997 - present Doctor of Philosophy - May, 2001
Psychology Major
Concentration - Biopsychology
Master's Thesis - Cognitive Appraisal and Associated
Physiological Measurements
- 1993 - 1997 LOYOLA COLLEGE - Baltimore, Maryland
Bachelor of Arts
Graduated May 1997 - Cum Laude
Psychology Major
Pre-Med
Overall QCA: 3.501
- HONORS/AWARDS:**
Dean's List – Sophomore, Junior and Senior year
Candidate for National Tutor Certification
Psi Chi Member-Psychology Honor Society
- EXPERIENCE:**
- 9/99- Present VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Undergraduate Advisor – Advise undergraduates on course work,
applications to graduate school and post-graduation career opportunities.
- 5/99 – 8/99 VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY
MEDICINE
Personal to the Dean of Graduate Studies – Revised course lecture
materials. Learned the intricate details of the everyday activities required
to maintain a graduate program.
- 1/99 – 5/99 VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Teaching Assistant – Advanced Learning Laboratory.
Independently teach two lab sections, prepare lectures and labs, assign and
grade course work.

9/97 – Fall, 98 VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Teaching Assistant - Introductory Psychology.
Independently teach several recitation sections, prepared lectures, assigned and graded course work.

Summer, 1998 Veterans Administration Hospital, East Orange, NJ
Internship, Lab Technician in the Neurology Research Lab.
Research Lab Goal: Develop an Animal Model of Obesity
Focused on In Situ Hybridization of Leptin Receptors in Rat Brains,
Operation of a cryostat, Slide preparation of brain tissue, and Basic
Stereotaxic Surgery Techniques.

1/96 - 5/96 SHEPPARD ENOCH PRATT HOSPITAL
Internship, Therapist's Assistant in the Children's Day Hospital,
Organized therapeutic activities, monitored children and evaluated
progress in the program.

**ACTIVITIES/
INTERESTS:**

Spring Break Outreach Participant '95 & '96,
Operation Smile, Community Service,
Peer Tutor, Peer Advisor,
Piano, Painting, Skiing, Physical Activities
Powder Puff '95 & '96

MEMBERSHIPS: Association for the Advancement of Behavioral Therapy
Eastern Psychological Association

PRESENTATIONS:

“Attributional and Physiological Responses of Abusive Males
To Intimate Partner Conflict”

Authors: T.M. Moore, S.L. Rhatigan, K.A. Cosenzo,
J.J. Franchina and R.M. Eisler

Presented: Association for the Advancement of Behavioral
Therapy Convention, 1998.

“Effects of Cardiovascular Reactivity and Negative Affect on the
Attributions of Hostile Men to Provocative or Neutral Partner Behavior”

Authors: K.A. Cosenzo, J.J. Franchina

Eastern Psychological Association, 2000 (In Review).