

Effects of Masculine Gender Role Stress and Pre-arousal on Men's Cognitive,
Affective, and Physiological Responses to Intimate Conflict Situations

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Abstract

Previous research has indicated that the Masculine Gender Role Stress (MGRS) scale has been useful in identifying men who are susceptible to appraising threat in situations that challenge their masculine gender roles. Furthermore, Zillmann's excitation-transfer theory has proposed that elevated levels of physiological reactivity may interfere with men's appraisal processes and ability to control their emotions and behavior. Therefore, the primary purpose of this study was to examine the independent and combined effects of men's appraisal of threat and physiological pre-arousal on cognitive, affective, behavioral, and physiological responses to masculine relevant female partner behavior that challenges masculinity.

Eighty college men who scored high or low on the MGRS were exposed to cold or room temperature water to induce the arousal or non-arousal conditions, respectively, prior to exposure to vignettes. They then listened to audio-taped vignettes of hypothetical situations involving dating partners who threatened the male's masculinity in the relationship in either masculine gender relevant or irrelevant contexts. Skin conductance level (SCL) and heart rate (HR) were obtained before, during, and after exposure to arousal or non-arousal conditions and each vignette. Measures of anger, negative affect, and appraisal were obtained in response to the different arousal conditions. Cognitive attributions, anger, negative affect, and verbal conflict tactics were obtained in response to each vignette.

Results showed that the arousal condition produced greater HR than did the non-arousal condition. High MGRS men reported more negative affect and more negative appraisal in the

arousal condition than in the non-arousal condition compared to low MGRS men. In response to the vignettes, high MGRS men reported more state anger, negative intent attributions, and verbal aggression tactics than did low MGRS men. Results also showed that gender irrelevant vignettes produced greater HR in the arousal condition than in the non-arousal condition. Finally, relative to high MGRS men, low MGRS men evidenced greater SCL during both arousal conditions and vignettes. However, results did not support an expected relationship between the effects of MGRS and pre-arousal on cognitive, affective, and physiological responses to gender relevant threats. Implications of these results for future research were discussed.

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Effects of Masculine Gender Role Stress and Pre-arousal on Men's Cognitive,
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Violence against an intimate partner, as defined by the APA Task Force on Violence and the Family (APA, 1996), is a "pattern of abusive behaviors including a wide range of physical, sexual, and psychological maltreatment used by one person in an intimate relationship against another to gain power unfairly or maintain that person's misuse of power, control, and authority" (as cited in Walker, 1999, p.23). National surveys found that 33%-50% of women may experience an episode of partner violence during the course of marriage (Straus & Gelles, 1988, 1990; Straus, Gelles, & Steinmetz, 1980). In dating relationships, between 33 and 37 percent of male college students were physically violent against their dating partners (Sugarman & Hotaling, 1989; White & Koss, 1991). While these statistics are alarming, the estimates of males' violent behavior against their female partners may be extremely conservative given the well-known observation that many instances of violence go undetected and unreported (Department of Justice, 1995; Margolin, Sibner, & Giberman, 1988).

Given these findings, there has been significant interest in identifying men who may be at risk for violent behavior in intimate relationships. In the literature on men and masculinity, one possible explanation for partner violence has been attributed to men's adherence to their understanding and enactment of culturally defined masculinity (Brooks & Silverstein, 1995; Doyle, 1989). Several studies have suggested that strong identification with stereotyped masculine gender roles may be partly responsible for men's violent behavior against their female partners (see Sugarman & Frankel, 1996 for review). According to this reasoning, one circumstance for violence may be conflict situations between partners that men appraise as threatening to their identification with and ability to enact their masculine gender roles (Eisler,

Franchina, Moore, Honeycutt, & Rhatigan, 2000). Appraisal of threat, in turn, may lead to cognitive, affective, and physiological responses that increase the likelihood of violence. If so, it is reasonable to expect that a relationship exists between violent behavior and negative attributions of partner behavior, negative affect, and elevated physiological reactivity to perceived threat.

For example, verbally violent males reported greater negative attributions to highly provocative and moderately provocative partner behavior than did non-violent males (Moore, Eisler, & Franchina, 2000). Situations depicting wife abandonment yielded reliably greater self-reported anger from violent husbands (Dutton & Browning, 1988), and physically violent husbands reported more anger and more physiological symptoms of anger in response to marital arguments with their wives (Margolin, John, & Gleberman, 1988). Also, a relationship between heart rate (HR) and partner violence has been found, indicating that many violent husbands (80%) increased their HR during a conflictual marital interaction (Gottman et al., 1995).

While these findings support a biopsychosocial perspective of violent behavior, the process by which men's appraisal of threat leads to partner violence is complex and not well understood. Moreover, few empirical studies have investigated factors that may increase men's susceptibility to appraising threat (e.g., their prior physiological arousal), and its effect on cognitive attributions of partner behavior, negative affect, and physiological reactivity, which may be precursors in the pathway leading to intimate partner violence. For these reasons, this study examined the independent and combined effects of men's appraisal of threat and prior physiological reactivity on their cognitive attributions for partner behavior, negative affect, physiological reactivity, and behavioral responses to partner behavior that threatens masculinity.

In the course of this paper, I will first describe how adherence to a masculine gender role ideology may predispose some men to cognitively appraise situations as threatening, and result in their attributing great negative intent and reporting greater negative affect and verbal aggression in response to female partner behavior. This is followed by the explanation of theory and research which proposes that prior elevated physiological reactivity (pre-arousal) may increase men's risk for appraising threat. Finally, a rationale is provided for examining the independent and combined effects of appraisal of threat and pre-arousal on men's cognitive attributions for partner behavior, negative affect, and physiological reactivity to intimate conflict situations that challenge masculinity.

Masculinity and Men's Appraisal of Threat

Masculine ideology refers to beliefs about the importance of men adhering to culturally defined standards for male behavior (Pleck, 1995). Researchers have developed theoretical formulations regarding what constitutes these standards of masculinity (e.g., David & Brannon, 1976, Levant et al., 1992). Levant et al. (1992) defined masculine ideology as comprising seven dimensions: avoiding all things feminine; resisting emotionality; appearing tough and aggressive; being self-reliant; achieving status; objectifying attitudes toward sexuality; and fearing homosexuals. This formulation suggests that the traditional male is one who avoids appearing weak and demonstrates toughness and violence to gain control and power.

Studies have demonstrated a reliable relationship between partner violence and men's beliefs about male power and control in their intimate relationships (see Holtzworth-Munroe et al., 1997 for review). For instance, a strong need for power was reliably related to men's use of physical violence to resolve conflict with their intimate partner (Mason & Blankenship, 1987), and violent males' beliefs about being in control in their relationships was reliably related to

violent behavior against their intimate partner (Prince & Arias, 1994). Also, increased decision making power of wives was correlated with husbands' use of violence (Babcock, Waltz, Jacobson, & Gottman, 1993).

Taken together, these findings suggest that men's perception of power and control in their intimate relationships may be related to their violent behavior toward their intimate partner. Since power and control partly define the masculine gender role, a more general circumstance for partner violence may be those situations which men appraise as a threat to their masculine gender role and ability to enact that role.

Eisler and Skidmore (1987) developed a self-report instrument called the Masculine Gender Role Stress (MGRS) scale to measure men's cognitive appraisal of threat to specific situations that challenge their adherence and ability to enact their masculine gender roles. For instance, David and Brannon (1976) and Levant et al. (1992) identified achievement status and success as male gender role norms. When an intimate female partner tells a man that she has become more financially successful than he, he would likely appraise her statement as threatening because financial achievement is a context in which men are expected to prevail. A factor analysis of the MGRS scale revealed that masculine relevant threatening situations were those which involved subordination to women, expression of vulnerable emotions, or perceived failure to perform traditional male roles (e.g., physical inadequacy).

Studies using the MGRS scale have identified reliable relationships between MGRS status and men's self-reported anger and physiological reactivity to masculine relevant threats. For example, males' MGRS scores correlated with the Multidimensional Anger Inventory (Eisler, Skidmore, & Ward, 1988). In relation to physiological reactivity, Lash, Eisler, and Schulman (1990) exposed men to a cold-pressor task with either high- or low-masculine

challenge. In the high-masculine challenge condition, males were told to keep their hand in the ice for as long as possible, and that a man should do well at the task, especially if he is in good physical condition. Results indicated that relative to low MGRS males, high MGRS males evidenced greater systolic blood pressure reactivity during the high-masculine challenge, but not during low-masculine challenge. If high MGRS men are more susceptible to increased physiological reactivity to a masculine threat related to physical endurance, then it is reasonable to expect a similar relationship between MGRS and physiological reactivity in interpersonal contexts that threaten masculinity related to power and control in intimate relationships.

More recently, Eisler et al. (2000) exposed college males to masculine relevant and irrelevant intimate conflict vignettes. Masculine relevant vignettes depicted female partner behavior that embodied a threat relevant to his beliefs (e.g., control and intellectual superiority) about how he should enact his masculine gender role. Results indicated that compared to low MGRS men, high MGRS men attributed more negative intent to masculine gender relevant vignettes than to masculine gender irrelevant vignettes. Additionally, high MGRS men reported significantly greater feelings of anger and verbally-aggressive tactics to resolve conflict to masculine relevant and irrelevant partner behavior than did low MGRS men.

Franchina, Eisler, and Moore (2001) also examined the gender relevance/irrelevance of partner behavior. They found that relative to low MGRS men, high MGRS men reported greater attributions of negative intent and anger to gender relevant and irrelevant partner behavior. However, high MGRS men endorsed using more verbal aggression toward threatening partner behavior in gender relevant situations than in gender irrelevant situations compared to low MGRS men. Taken together, the findings of Eisler et al. (2000) and Franchina et al. (2001) suggest that high MGRS men report greater anger, regardless of the gender relevance of female

partner behavior. Results further suggest that relative to low MGRS men, high MGRS men consistently report greater attributions of negative intent and verbal aggression in response to female partner behavior in gender relevant situations. However, it remains unclear whether high MGRS men report greater negative attributions and verbal aggression in response to female partner behavior in gender irrelevant situations.

One implication of these findings is that high MGRS males may be highly susceptible to appraising threat in conflict situations that challenge their masculine gender role ideology. The greater threat experienced by high MGRS males may have led to their assigning more negative intent, self-reported anger, and verbal aggression in response to female partner behavior. A second implication is that high MGRS males are not likely to evidence increased physiological reactivity in all possible stress situations, but only in those situations that are appraised as threats to masculinity (Lash et al., 1990). Taken together, these conclusions suggest that intimate conflict situations that threaten men's understanding and ability to enact masculine gender roles should result in greater negative attributions for partner behavior and self-reported anger, and should increase physiological reactivity among men predisposed to appraise masculine relevant situations as threatening. The purpose of the present study, therefore, was to replicate the findings of Eisler et al. (2000), and more importantly, to demonstrate a relationship between MGRS and heightened physiological reactivity in response to intimate conflict situations that threaten masculinity.

Simultaneously, it seems critical to begin identifying factors that may increase men's risk for appraising threat in masculine relevant situations. The following section, therefore, describes Zillmann's excitation-transfer theory which suggests that prior elevated physiological arousal may interfere with men's appraisal processes and emotional responses to threats. If so, it may be

important to examine the effects of pre-arousal on men's cognitive, affective and physiological responses to female partner behavior, especially among men prone to appraising threat in intimate relationships.

Excitation-Transfer Theory

Zillmann's (1988; 1971) excitation-transfer theory contends that emotional experiences and emotional behaviors (e.g., anger) have two sources, cognition and excitation (i.e., physiological reactivity), which are "truly interdependent and influence one another at all times during the course of agonistic experiences and behaviors" (1988, p.52). First, the dependence of *excitation on cognition* is based on the notion that the appraisal of endangerment or threat may foster physiological reactivity and that reappraisals can perpetuate or enhance these reactions. For example, Zillmann and Johnson (1973) exposed male subjects to minimal provocation (i.e., two shocks) or extreme provocation (8 shocks and verbal insults from a confederate) followed by viewing a violent or nonviolent film. Results indicated that extreme provocation resulted in greater excitation, as evidenced by blood pressure changes. Results also showed that the violent film maintained prior levels of excitation whereas the non-violent film led to decreased excitation. The authors suggested that the violent film may have perpetuated (i.e., reappraisal of threat) the earlier provocation, as evidenced by increased blood pressure and retaliatory behavior (i.e., degree of shock given to confederate), whereas the nonviolent film may have decreased negative thoughts and anger, which lowered BP and retaliatory behavior.

These findings have been elaborated in studies (e.g., Bryant & Zillmann, 1977; Zillmann & Cantor, 1976) which showed that films of increasing cognitive demand (as indexed by subject error rate in responding to a tactile stimulus during the film) produced decreased excitation and retaliation compared to a violent film that was highly cognitively engaging but resulted in

increased excitation and retaliation. The authors suggested that the messages in the violent film, while highly cognitively engaging, become a reminder of the earlier provocation, thus increasing excitation and retaliatory behavior. Overall, these studies demonstrate that negative appraisals of threat may increase physiological reactivity. In relation to the present study, these findings provide further support for the expected relationship between appraisal of threat and increased physiological reactivity in high MGRS men.

Zillmann also proposed, however, a dependence of *cognition on excitation*. This model proposes that changes in cognitive control of behavior are a function of excitation. Specifically, this model suggests that there is a small range of excitation by which cognitive processes have optimal influence over emotions and behavior. Excitation above this optimal range, therefore, may result in an inability to cognitively control emotions and behavior. In other words, the ability to cognitively mediate excitation may be greatly impaired at high levels of excitation. At these times, behavior may be influenced by previous learning and habits without the aid of cognitive mediation to inhibit such behaviors.

For example, Zillmann, Bryant, Cantor, and Day (1975) pre-aroused participants by exposing them to strenuous physical exercise that increased physiological reactivity (i.e., bike-riding). Then, participants were provoked by a confederate and given mitigating information to explain the provocation (i.e., “he’s really up-tight about his prelims”). Results showed that for both the prearoused and non-prearoused groups, provocation without mitigating information produced high levels of retaliation. However, the prearoused group maintained high levels of retaliation following the receipt of mitigating information whereas the non-prearoused group greatly reduced retaliation following mitigating information. In other words, at high levels of

physiological reactivity, mitigating information following provocation had a negligible impact on reducing retaliatory behavior.

More recently, Cosenzo and Franchina (In press) exposed male college students to an arousal inducing (serial subtraction by 7's) or a non-arousal inducing condition (serial subtraction by 1's) followed by immediate exposure to vignettes that depicted female partner behavior that was either provocative or non-provocative. Results showed that relative to men in the non-arousal inducing condition, men in the arousal inducing condition showed significantly greater increases in blood pressure and heart rate and reported more negative intent attributions to the female's behavior in the non-provocative vignettes.

Taken together, these findings suggest that at high levels of physiological reactivity, men may be more susceptible to negative appraisals and reappraisals during threat and interpersonal situations with their partners. Combined with Zillmann's contention that cognition and excitation are interdependent, these findings suggest that pre-arousal may lead to appraisals of threat which may lead to further physiological reactivity, and the cycle may repeat itself to exacerbate or maintain negative emotional states. In relation to the present study, these findings suggest that pre-arousal should increase men's cognitive, affective, and physiological responses to threatening situations, especially among high MGRS men who are more likely to appraise threat in a variety of gender relevant situations.

Integration and Rationale

Thus, the primary purpose of the present study was to determine the effects of MGRS differences on cognitive attributions, negative affect, anger, verbal conflict resolution tactics, and physiological reactivity in response to female partner behavior in masculine gender relevant and irrelevant situations. Based on Eisler and Skidmore's (1988) MGRS paradigm and Zillmann's

(1988) contention that excitation is dependent on cognition, if men's appraisal of threats to their identification with masculine gender roles increase the risk for partner violence, then it is reasonable to expect a relationship between men's tendency to appraise threat and their subsequent cognitive and physiological responses to masculine relevant threats.

The second purpose of the present study was to examine the independent and combined effects of pre-arousal and MGRS on men's cognitions, affect, and physiological reactivity to masculine gender relevant and irrelevant situations. Based on Zillmann's (1988) contention that cognition is dependent on excitation, it was expected that inducing physiological reactivity would have differential effects on high compared to low MGRS men's cognitions, affect, and physiological reactivity to masculine gender relevant compared to irrelevant situations.

Design and Hypotheses

The present study used a mixed factorial design. MGRS (high vs. low) and Pre-arousal condition (Arousal vs. Non-arousal) comprised the between-subjects variables. Participants randomly assigned to the Arousal condition were exposed to a cold-pressor task that should increase physiological reactivity. Participants assigned to the Non-arousal condition were exposed to room temperature water that should have a negligible impact on physiological reactivity. Thus, half of the participants were either in the Arousal or Non-arousal condition. All participants were exposed to 2 Masculine Gender Relevant and 2 Masculine Gender Irrelevant intimate conflict vignettes, which comprised the within-subjects variable of Gender Relevance. MGRS, Pre-arousal, and Gender Relevance were categorized as independent variables. Skin conductance level (SCL) and heart rate (HR) were obtained before, during, and after exposure to Pre-arousal condition and each vignette. Measures of anger, negative affect, and appraisal were obtained following Arousal and Non-arousal conditions, whereas measures of cognitive

attributions, anger, negative affect, and verbal conflict resolution tactics were obtained following each situation. SCL, HR, and self-report measures comprised the dependent measures. Based on this design, hypotheses were as follows:

Manipulation Check Hypothesis:

As a manipulation check that the Pre-arousal condition increased physiological reactivity, it was expected that relative to men in the Non-arousal condition, men in the Arousal condition would evidence greater HR and SCL during the Task segment than during the Baseline or Post-pressor Baseline segments.

Experimental Hypotheses:

1. It was expected that relative to low MGRS men, high MGRS men would report greater state anger to Masculine Gender Relevant than to Masculine Gender Irrelevant vignettes in the Arousal condition than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance).
2. It was expected that relative to low MGRS men, high MGRS men would report greater negative affect to Masculine Gender Relevant than to Masculine Gender Irrelevant vignettes in the Arousal condition than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance).
3. It was expected that relative to low MGRS men, high MGRS men would report greater negative intention attributions to Masculine Gender Relevant than to Masculine Gender Irrelevant vignettes in the Arousal condition than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance).
4. It was expected that relative to low MGRS men, high MGRS men would report greater verbally aggressive conflict resolution tactics to Masculine Gender Relevant than to

Masculine Gender Irrelevant vignettes in the Arousal condition than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance).

5. It was expected that relative to low MGRS men, high MGRS men would evidence greater HR, relative to baseline, to Masculine Gender Relevant than to Masculine Gender Irrelevant vignettes in the Arousal condition than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance x Time).
6. It was expected that relative to low MGRS men, high MGRS men would evidence greater SCL, relative to baseline, to Masculine Gender Relevant than to Masculine Gender Irrelevant vignettes in the Arousal condition than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance x Time).

Method

Screening Phase

Participants. The screening phase included 173 undergraduate college males. Right-handed participants, 18 years or older were recruited from the subject pool of students in psychology courses at Virginia Polytechnic Institute and State University. Participation was voluntary and was compensated with course credit.

Measures. Masculine Gender Role Stress Scale (MGRS; Eisler & Skidmore, 1987). The MGRS scale is a 40-item self-report inventory that measures the degree to which males cognitively appraise how stressful/threatening specific situations are for them. Responses on each item can range from 0 (not at all stressful) to 5 (extremely stressful), and are summed for a total possible score of 200. Exemplar items were: “Letting a woman take control of the situation, Being with a woman who is more successful than you, and Being perceived as having feminine traits.” Factor analysis revealed that MGRS items cluster around the following dimensions:

Physical Inadequacy, Emotional Inexpressiveness, Subordination to Women, Intellectual Inferiority, and Performance Failure. The test-retest reliability of the MGRS scale for a two-week interval yields a sufficient reliability ($r=0.93$) and good internal consistency (coefficient alpha = 0.90) (Eisler, Skidmore, & Ward, 1988). Support for the construct validity of the MGRS is adequate. Previous studies cited in Eisler (1995) have indicated significant positive correlations between MGRS and men's reports of anger, anxiety and engaging in risky health behavior (e.g., smoking).

The neurological screening form is a 16-item questionnaire designed to identify conditions within the individual that may negatively influence the accuracy of physiological measures. The questionnaire required participants to identify current or historically-relevant conditions, including stroke, alcohol abuse, head trauma, etc., and to provide detailed explanations of reported conditions.

Finally, a demographics questionnaire was used to obtain information such as age, academic level, marital status, family background, and intimate relationship history.

Procedure. Participants met in groups of approximately 20 in a designated classroom. Instructions were standardized and seating was arranged to minimize conversation and distraction among the men. Written informed consent was obtained from each participant. Participants were informed that they may be contacted to participate in the second phase of the study. Each participant was supplied an optional form allowing him to provide his name and phone number if interested in participating further. Once consent was obtained, participants were administered the MGRS scale, the neurological screening form, and the demographics questionnaire. Once completed, participants were thanked for their participation.

Experimental Phase

Participants. Eighty participants were selected for the experimental phase from the sample of men who completed the previous screening phase, met the necessary inclusion criteria, and indicated interest in participating. Participants in this study were required to be in a heterosexual relationship for a minimum of three months currently or within the preceding year. Inclusion also required that participants' MGRS scores fall below 85 (low MGRS; $n = 40$) or above 100 (high MGRS; $n = 40$) (cutoff scores approximate top and bottom thirds based on previous samples). Finally, participants were excluded if they reported any significant neurological conditions that would negatively affect physiological reactivity or potentially endanger participants, including head trauma, stroke, seizures, and heart or lung problems. Participation was voluntary and was compensated with course credit.

Measures. The State Anger Scale of the State-Trait Anger Expression Inventory (STAXI; Spielberger et al., 1985) is a ten-item scale that assesses state anger and anger-related emotions as well as state urges to express anger or become aggressive. Exemplar items were: "I am furious, I feel angry, I feel like yelling at somebody, and I feel like hitting someone." Responses could range from 1 (Not at all) to 4 (Very much so). Scores were averaged across items to provide an index of anger immediately following pre-arousal and the girlfriend's behavior in each vignette. The reliability and validity of the STAXI has been demonstrated (Spielberger et al., 1985).

The Negative Affect Schedule (NAS) of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a ten-item state inventory that assesses subjective distress and negative mood states. Exemplar items were: "Upset, Irritable, Distressed, and Hostile." Responses could range from 1 (Very Slightly) to 5 (Extremely). Scores were averaged

across items to provide an index of the level of negative affect experienced following pre-arousal and the girlfriend's behavior in each vignette, with higher scores indicating a greater amount of reported negative affect. The NAS has adequate internal consistency (Cronbach's alpha was .85 for affect reported at the present moment), item validity (factor loadings of the items range from .52 to .74), and convergent validity with other measures of negative affect (Watson, Clark, & Tellegen, 1988).

An Appraisal Questionnaire developed by Lash et al. (1990) assesses men's appraisal of stress resulting from the pre-arousal task. Responses could range from 1 (Very Little) to 7 (Very Much) for how painful, uncomfortable, physically stressed, important, and challenging the task was for them, and from 1 (Very Poorly) to 7 (Very Well) for how well they were able to cope with the task and how well other men would perform on the task. This measure was used as a manipulation check to ensure that both low and high MGRS males evidenced similar appraisals of the pre-arousal task. This questionnaire has not been formally validated.

The Negative Intentions Questionnaire (NIQ: Holtzworth-Munroe & Hutchinson, 1993) is a five-item inventory that assesses the specific attribution of negative intent regarding the girlfriend's behavior in the vignettes. Two exemplar items were: "She was trying to make me angry and She was trying to pick a fight." Responses could range from 1 (Strongly Disagree) to 6 (Strongly Agree). Scores were averaged across items to provide an index of the level of agreement that the female acted with malfeasance. Since the NIQ items assess only negative attributions, two positive attribution items (e.g., She was trying to please me) were included to reduce item bias, but were not included in averaging participants' responses. The NIQ has not been formally validated; however, it has been used in several studies and evidenced high internal

consistency (Cronbach's alphas = .95, .90, Holtzworth-Munroe & Hutchinson, 1993; Moore, 1998, respectively).

The Conflict Resolution Questionnaire was adapted from the Conflict Tactics Scale (CTS; Straus, 1979) which measures the frequency of behavioral strategies employed to resolve conflict in male-female interactions. The questionnaire includes 3 items, and responses could range from 1 (Strongly Disagree) to 6 (Strongly Agree). An exemplar item was: "I would resolve this conflict by yelling at my girlfriend." Scores were averaged across items to provide an index of verbally-aggressive strategies to resolve conflict following the girlfriend's behavior in each vignette. Since the items assess only negative conflict resolution strategies, 3 positive resolution items (e.g., I would resolve this conflict by discussing it with my girlfriend) were included to reduce item bias, but were not included in averaging participants' responses. The original CTS has relatively good reliability (.83 for male-to-female violence; Straus et al., 1980).

Apparatus. Measures of physiological reactivity included skin conductance level (SCL) and heart rate (HR). Based on the suggestions of Gottman et al. (1995), in considering which measures of autonomic nervous system functioning to assess it seemed important to include more than one measure to describe physiological reactivity. HR was chosen because of its strong positive association with anger (see Gottman et al., 1995 for review), and research has found that men who are at risk for increased negative affect (e.g., high hostile men) evidenced a significant positive relationship between measures of negative affect and heart rate in response to a challenge compared to low hostile men (Suarez & Williams, 1989). SCL was particularly chosen for this study because of the well known fact that it reflects changes in electrical activity of the skin due to increased sweat gland activity in response to emotional stimuli and because SCL is one of few measures that are innervated only by the sympathetic nervous system

(Gottman et al., 1995; Levenson & Gottman, 1983; Raine, 1993). Thus, SCL and HR are influenced by independent systems, although heart rate is influenced by both sympathetic and parasympathetic activation.

However, SCL is typically used in measuring tonic or baseline skin conductance, which are levels taken in a resting state. On the other hand, skin conductance responses (SCR) are used to measure phasic or immediate changes in response to a discrete stimulus (e.g., noise burst). This presented a dilemma in the present study. Namely, the use of lengthy vignettes is not conducive for measuring SCR because any response during the vignette may reflect a reaction to a discrete event in the vignette or a reaction to some unknown stimulus (referred to as non-specific fluctuations: NSF). On the other hand, while SCL includes SCR, SCL during vignettes do not allow measurement of the potential responses to specific aspects or discrete events in the vignettes (e.g., female partner begins yelling at boyfriend). It was decided that because this study represented a first attempt at assessing skin conductance in response to vignettes, it was more important to examine general SCL across types of vignettes than to examine specific responses within vignettes.

SCL was obtained using electrodes connected to the distal phalanges of the second and third fingers of the non-dominant hand, ensuring that both electrodes recorded activity from nerves originating in identical segments of the spine (Hugdahl, 1995). Additionally, distal phalanges were used because they have been shown to produce mean SCL two times greater than SCL recorded from the medial phalanges (Scarpa-Scerbo, Weinstock-Freedman, Raine, Dawson, & Venebles, 1992). SCL, measured in micromhos or microsiemens, were obtained using the Coulbourn S71-23 Isolated Skin Conductance Coupler and recorded with the computer package MCA-CODAS.

HR was obtained using a finger plethysmograph connected to the tip of the first finger of the non-dominant hand. HR reflects both sympathetic and parasympathetic influences (Hugdahl, 1995). HR, measured in beats per minute (BPM), was obtained using the Coulbourn S71-40 Optical Pulse Coupler and recorded with the computer package MCA-CODAS. Physiological measures were obtained before (Cold-pressor Baseline), during (Cold-pressor Task) and after (Post-pressor Baseline) exposure to Pre-arousal conditions. Physiological measure were also obtained before (Baseline), during (Narrator and Conflict), and after (Post) each vignette.

Analyses of interexperimenter reliability of physiological measures showed no significant differences among experimenters ($n=4$) for self-report or heart rate responses to the pre-arousal task or any of the situations, p 's $> .10$. However, ANOVAs showed significant differences among experimenters for SCL measured with the exception of levels taken following the pre-arousal task (i.e., Post-pressor Baseline), p 's $< .05$. Modified LSD (Bonferroni) tests showed that experimenter 1 (Kirk) and experimenter 2 (Jeff) differed significantly from each other in SCL at the .05 level, with the other experimenters' measurements falling between these two outer points. This variability may be expected given that experimenters must adjust the "sensitivity" and "conductance adjustment" levels based on participants' baseline SCL and to avoid participants' reactivity extending beyond the measurement capabilities of the equipment (i.e., potential spikes in reactivity beyond the measurable range). Additionally, results showed no significant differences for mean sensitivity values or distribution of sensitivity values between low and high MGRS men. Thus, the results of the present study should not be adversely affected by differences in experimenter measurements of SCL.

The water used in the pre-arousal task was contained in a small ice cooler. Participants were randomly assigned to either the Arousal condition or the Non-arousal condition. For

participants in the Arousal condition, the water was maintained at 0 ± 3 degrees Celsius (Lash et al., 1990). For the participants in the Non-arousal condition, the water was maintained at 25 ± 3 degrees Celsius. Water temperature was monitored for accuracy using a standard mercury thermometer.

Vignettes. The four audio-taped vignettes of hypothetical interactions between dating partners were selected from a group of six that were developed and pilot-tested (Eisler et al., 2000) to assess men's cognitive and affective responses to conflict between dating partners. The vignettes were presented to a sample of college males ($n=22$) and females ($n=46$) who rated how stressful and anger-provoking each vignette would be for the male in the situation. The two vignettes selected as masculine gender relevant were those that males and females scored as highest on stress and anger for the male during pilot-testing, and that best differentiated low and high MGRS men on reports of negative attributions and negative affect. The two vignettes selected as masculine gender irrelevant were those that males and females scored as lowest on stress and anger for the male, and that least differentiated low and high MGRS men on reports of negative attributions and negative affect. Participants imagined themselves and their girlfriends as the couple portrayed in two vignettes depicting conflict between partners in which the female partner is threatening the males' identification and adherence to traditional masculine gender roles (Masculine Gender Relevant). Participants were also exposed to two vignettes depicting conflict between partners in which the female partner is threatening or challenging the males' masculinity in gender irrelevant contexts (Masculine Gender Irrelevant). Each vignette included a narrative segment (Narrator) followed by a conflict segment (Conflict). Presentation of each vignette was separated by approximately five minutes to ensure adequate time for HR and SCL to return to baseline levels.

Procedure. Each participant was instructed to meet at a designated location where he was greeted by one of four experimenters (three male and one female) who followed a standardized protocol for running participants. Written informed consent was obtained from each participant. Each subject was informed that the study involved listening to vignettes about how they may interact in their relationships and would involve measuring physiological reactivity. They were informed that they would hear the vignettes via headphones and would be required to provide written responses following each vignette. Each participant was then directed to sit in a chair located in an enclosed room with a one-way mirror positioned behind participants. Participants were informed that the experimenter would be located in the adjoining room and that additional instructions would be supplied via headphones and intercom. Participants were then fitted with the finger plethysmograph, skin conductance electrodes and headphones, and asked to remain still during the duration of the procedure. The experimenter addressed any questions or concerns posed by participants, reiterated the importance of remaining still during the experiment, and exited the room.

From the experimenter's room, participants were instructed to cough, count slowly from 1 to 10, and sneeze in order to ensure that the HR finger plethysmograph and SC electrodes were adequately connected to participants' fingers, changes in HR and SCL occurred in response to a stimulus, and HR and SCL did not extend beyond a measurable range. Participants were then instructed to remain quiet and still for five minutes to ensure enough time for HR and SCL to reflect resting/baseline levels. After five minutes, baseline HR and SCL (Cold-pressor Baseline) were recorded for 30 seconds. The experimenter then reentered the participant's room and placed the ice cooler on a crate located immediately adjacent to his right arm. This prevented participants from experiencing potentially adverse physiological reactions to water prior to

obtaining baseline measures. The experimenter returned to the experimenter's room and provided the following instructions:

“In a moment, I would like you to place your right hand in the container of water up to your wrist. After you have placed your hand in the container, I would simply like you to keep your hand in the water until I am able to get proper measurements. I will tell you when these are finished and when to remove your hand. I will be monitoring you while you have your hand in the water. Please don't move other parts of your body during this process.”

Participants were then instructed to place their right hand in the water cooler, and SCL and HR (Cold-pressor Task) were obtained for 30 seconds following immersion of each participant's hand. After 30 seconds, the experimenter instructed the participant to remove his hand, reentered the participant's room, and dried his hand with a towel. The experimenter then provided the participant with a clipboard and pencil and instructed him to use his only his right hand to complete the State Anger, Negative Affect, and Appraisal questionnaires. The experimenter removed the ice cooler during this period. Once completed, the experimenter instructed the participant to place the clipboard on his lap until further notice and reentered the experimenter's room.

The experimenter then instructed participants to remain still to ensure that hand temperature returned to normal and HR and SCL returned to baseline. Participants remained in a resting period for two minutes unless HR and SCL appeared significantly above baseline based on visual inspection. If so, the resting period was extended to four minutes, which was sufficient for those subjects who were slower in returning to baseline. Following the rest period, baseline HR and SCL were recorded for 30 seconds. This served as a recovery measure for the cold-

pressor task (i.e., Post-pressor Baseline) and a baseline measure for the first vignette (i.e., Baseline).

Vignettes were then presented in a semi-counterbalanced order (i.e., 2 orders of presentation). Specifically, presentation of vignettes alternated between masculine gender relevant and masculine gender irrelevant vignettes. Half of the participants began with a masculine gender relevant vignette and the other half began with a masculine gender irrelevant vignette. Participants were instructed to remain still during and following the presentation of the vignette and to imagine he and his girlfriend as the persons portrayed in the vignette. The vignette was played over the headphones and SCL and HR were measured during the duration (Narrator and Conflict) and 30 seconds following each vignette (Post). Participants were then instructed to complete the State Anger, Negative Affect, NIQ, and Conflict Resolution questionnaires. Participants were then instructed to remain still for two minutes, followed by recording of baseline SCL and HR for the second vignette, and the procedures continued as previously discussed. After obtaining SCL and HR and self-report measures following the final vignette, the experimenter returned to the participant's room and removed the finger plethysmograph, skin conductance electrodes, and headphones. Participants were informed of the nature and purpose of the study and asked to keep study information confidential until the study had been completed. Participants were thanked for their efforts.

Ten participants were recruited to establish experimenter reliability and pilot test the proposed methodology. Pilot testing was supervised by the primary experimenter, who first modeled the proposed protocol on participants and then observed and provided feedback to the junior experimenters during and following their running of the protocol. Each junior experimenter was further required to demonstrate competency with the protocol by running the

procedures on the primary experimenter who acted as a relatively uncooperative participant. Pilot testing revealed that instructions were relatively easy to follow for participants. Participants did not appear to have difficulty keeping their hand immersed in cold water and completed self-report questionnaires without complication. Pilot testing also showed that participants were capable of remaining still throughout the lengthy protocol and that experimenters were able to observe and note any movements as they occurred in order to artifact movements during collection of physiological data.

Data Reduction and Analysis

Responses to Pre-arousal Conditions

Self-report Measures. Means and standard deviations were obtained for the dependent measures of self-reported negative affect, state anger, and appraisal in response to the pre-arousal conditions. The effects of the independent variables of MGRS status (low vs. high) and Pre-arousal condition (Arousal vs. Non-arousal) on the dependent variables were examined with a 2 (MGRS status) x 2 (Pre-arousal) analysis of variance (ANOVA).

Physiological Measures. For the dependent measures of SCL and HR, it was necessary to transform the raw wave-form data (i.e., the visual display of participant's heart rate and skin conductance levels) as recorded by MCA-CODAS into microsiemens and beats per minute, respectively. For SCL, this was achieved in two steps. First, the wave-form data was highlighted with "event markers" by each experimenter as they ran each participant through the study. Specifically, these markers highlighted the beginning and ending points for each of the respective segments of the Pre-arousal condition (e.g., Cold-pressor Baseline). MCA-CODAS was then used to calculate the average volts for each segment. Second, mean volts for each segment were transformed into microsiemens, which was achieved by multiplying mean volts by

1000 to derive mean millivolts. Mean millivolts were then divided by the “sensitivity” value (100, 500, or 1000 millivolts/micromho) and added with the “subject conductance” value (range = 0 to 30 micromhos) set by each experimenter while testing participants’ SCL to stimuli (e.g., coughing) and resulted in mean microsiemens for each segment. This equation was provided by technical support staff at DATAQ Instruments, Inc. and verified by technical staff at Coulbourn Instruments, Inc.

Heart rate was calculated by manually counting the number of “peaks” during each segment. This value was divided by the length of time that commenced between the maximum voltage of the first peak and last peak within each segment, and multiplied by 60 to determine beats per minute. The effects of MGRS status (low vs. high) and Pre-arousal condition (Arousal vs. Non-arousal) on SCL and HR were examined with a 2 (MGRS status) x 2 (Pre-arousal condition) x 3 (Cold-pressor task) repeated measures ANOVA. For both SCL and HR, it was necessary to remove portions of physiological recordings when participants engaged in any moderate movements (e.g., sneezing). Experimenters entered separate event markers to highlight participant movements. The primary investigator then determined the duration of influence of this movement on participants’ raw wave-form and removed it prior to averaging physiological responses.

Responses to Vignettes

Self-report Measures. In the second class of analyses, means and standard deviations were obtained for self-report measures of negative affect, state anger, negative intent attributions, and conflict resolution tactics in response to the vignettes. These values were derived by combining mean scores in response to each of the two vignettes that depicted Masculine Gender Relevant and Masculine Gender Irrelevant situations, respectively. The effects of MGRS status,

Pre-arousal condition, and Gender Relevance on the dependent variables were examined with a 2 (MGRS status) x 2 (Pre-arousal condition) x 2 (Gender Relevance) repeated measures ANOVA.

Physiological Measures. For the dependent measures of SCL and HR, means and standard deviations were obtained using the method described earlier. Additionally, means and standard deviations were obtained for each segment of the vignettes (i.e., Baseline, Narrator, Conflict, and Post). These values were entered as the within-subjects variable of Time. The effects of MGRS status, Pre-arousal condition, Gender Relevance, and Time on the dependent variables were examined with a 2 (MGRS status) x 2 (Pre-arousal condition) x 2 (Gender Relevance) x 4 (Time) repeated measures ANOVA.

Independent Sample and Paired Sample t-tests were conducted to solve for interactions and main effects. Independent Sample t-tests were also used to examine potential differences between dating and non-dating males on the dependent variables and between low and high MGRS males for demographic data.

Results

Sample Characteristics

Table 1 shows demographic characteristics of the study sample (N = 80). The demographic data showed that the average age of participants was 19.39 years. Participants were 47.5% freshmen, 36.3% sophomores, 11.3% juniors, and 3.8% seniors. The sample was predominately Caucasian (80%). All participants reported their marital status as single, and 57 or 71.3% of participants reported being currently involved in an intimate heterosexual relationship, with an average duration between 6 and 12 months. For participants not currently in a dating relationship, all indicated that their last relationship terminated within one year of participation.

Table 2 shows mean state anger, negative affect, NIQ, appraisal, conflict resolution tactics and baseline HR and SCL for dating and non-dating males. T-test comparisons showed that dating status (i.e., currently dating versus not dating) did not significantly influence anger, negative affect, appraisal or baseline HR and SCL to the Pre-arousal condition, and did not significantly influence attributions, anger, negative affect, and conflict resolution responses to partner behavior in any of the situations, p 's > .20. Thus, the present results are not attributable to participant's dating status.

Table 3 displays demographic data for low and high MGRS males. Additional analyses of demographic data showed no significant differences between low and high MGRS groups for age, academic level, ethnicity, current dating/marital status, and length of longest relationship, p 's > .10.

Responses to Pre-arousal Conditions/Manipulation Check

As a manipulation check that the cold-pressor task had the intended effect of increasing physiological reactivity, it was expected that relative to baseline and post-pressor baseline segments, men in the Arousal condition would produce greater HR and SCL compared to men in the Non-arousal condition during the cold-pressor task segment.

Heart Rate. In order to assess participants' initial physiological reactivity to the cold-pressor task, repeated measures ANOVAs were conducted. HR and SCL during the cold-pressor baseline, cold-pressor task, and post-pressor baseline were entered as the within-subjects variable labeled Time, and Pre-arousal condition and MGRS group were entered as the between-subjects variables. Table 4 shows mean HR during the cold-pressor baseline, cold-pressor task, and post-pressor baseline for high and low MGRS groups in the Non-arousal and Arousal conditions. An interaction was found for Pre-arousal and Time, $F(2,152) = 7.36, p < .01$. T-test comparisons

showed that the Arousal condition produced a significant increase in HR from the cold-pressor baseline to the cold-pressor task, $t(39) = 3.09$, $p < .01$, compared to the Non-arousal condition, $t(39) = 1.09$, $p > .10$. Results revealed no other interaction or main effects for MGRS status or Pre-arousal condition.

Skin Conductance Level. Table 5 shows mean SCL during the cold-pressor baseline, cold-pressor task, and post-pressor baseline for high and low MGRS groups in the Non-arousal and Arousal conditions. An interaction was found for MGRS and Time, $F(2,152) = 6.69$, $p < .01$. T-test comparisons showed that low MGRS men evidenced a significant decrease in SCL from the cold-pressor task to the post-pressor baseline, $t(39) = 3.48$, $p < .01$, compared to high MGRS men, $t(39) = .035$, $p > .10$. This finding remained significant after controlling for cold-pressor baseline differences, $F(1,77) = 6.16$, $p < .05$. T-test comparisons also showed that high MGRS men evidenced a significant increase in SCL from the cold-pressor baseline to the post-pressor baseline, $t(39) = 3.52$, $p < .01$, compared to low MGRS men, $t(39) = 1.28$, $p > .10$.

Ratings of State Anger, Negative Affect, and Appraisal. Table 6 shows mean state anger, negative affect and appraisal scores for low and high MGRS groups in the Non-arousal and Arousal conditions. Results showed that state anger was reported more in the Arousal condition than in the Non-arousal condition, $F(1,76) = 7.28$, $p < .01$. High MGRS men reported more negative affect than did low MGRS men, $F(1,76) = 4.26$, $p < .05$. For appraisal, results showed an interaction for Pre-arousal and MGRS, $F(1,75) = 11.38$, $p < .01$. T-test comparisons showed that relative to low MGRS men, high MGRS men reported more negative appraisal in the Arousal condition, $t(38) = 3.35$, $p < .01$, but not in the Non-arousal condition, $t(38) = .86$, $p > .05$. Results revealed no other interaction or main effects for MGRS status or Pre-arousal condition.

Responses to Vignettes – Self-report Measures

It was expected that relative to low MGRS males, high MGRS males would report greater state anger, negative affect, negative intent attributions, and verbally-aggressive conflict resolution strategies in response to Masculine Gender Relevant versus Masculine Gender Irrelevant vignettes in the Arousal than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance).

Ratings of State Anger (hypothesis 1). Table 7 shows mean state anger scores of low and high MGRS in the Non-arousal and Arousal conditions for Masculine Gender Relevant and Masculine Gender Irrelevant situations. Results of repeated measures ANOVA showed that high MGRS men reported more state anger than did low MGRS men, $F(1,76) = 14.98, p < .001$. This result remained significant after statistically controlling for participants' state anger, negative affect, and appraisal responses to the pre-arousal conditions, $F(1,72) = 11.05, p < .01$. Additionally, state anger was reported more in the Masculine Gender Relevant than in the Masculine Gender Irrelevant situations, $F(1,76) = 137.90, p < .001$. However, this result no longer remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 2.31, p > .10$. Results revealed no interaction effects for MGRS status, Gender Relevance, and Pre-arousal condition, and no main effects for Pre-arousal condition.

Ratings of Negative Affect (hypothesis 2). Table 8 shows mean negative affect scores of low and high MGRS groups in the Non-arousal and Arousal conditions for Masculine Gender Relevant and Masculine Gender Irrelevant situations. Results showed that negative affect was reported more in Masculine Gender Relevant than in Masculine Gender Irrelevant situations, $F(1,76) = 102.97, p < .001$. However, this result no longer remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = .56, p > .10$. Results revealed no

interaction effects for MGRS status, Gender Relevance, and Pre-arousal condition, and no main effects for MGRS or Pre-arousal condition.

Attributions of Negative Intent (hypothesis 3). Table 9 shows mean NIQ scores of low and high MGRS groups in the Non-arousal and Arousal conditions for Masculine Gender Relevant and Masculine Gender Irrelevant situations. Results showed that high MGRS men reported more negative intent attributions than did low MGRS men, $F(1,76) = 9.60, p < .01$. This finding remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 6.80, p < .05$. Results also showed that negative intent attributions were reported more in Masculine Gender Relevant than in Masculine Gender Irrelevant situations, $F(1,76) = 144.89, p < .001$. This finding also remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 12.41, p < .01$. Results revealed no interaction effects for MGRS status, Gender Relevance, and Pre-arousal condition, and no main effects for Pre-arousal condition.

Conflict Resolution Tactics (hypothesis 4). Tables 10 shows mean verbal aggression conflict resolution tactics scores for low and high MGRS groups in the Non-arousal and Arousal conditions for Masculine Gender Relevant and Masculine Gender Irrelevant situations. Results showed that high MGRS men reported more verbal aggression tactics than did low MGRS men, $F(1,76) = 12.76, p < .01$. This finding remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 8.90, p < .01$. Results also showed that verbal aggression tactics were reported more in Masculine Gender Relevant than in Masculine Gender Irrelevant situations, $F(1,76) = 73.02, p < .001$. This finding no longer remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 2.12, p > .10$. Results

revealed no interaction effects for MGRS status, Gender Relevance, and Pre-arousal condition, and no main effects for Pre-arousal condition.

Responses to Vignettes - Physiological Measures.

For measures of HR and SCL, it was expected that relative to low MGRS males, high MGRS males would evidence greater HR and SCL, relative to baseline, in response to Masculine Gender Relevant versus Masculine Gender Irrelevant vignettes in the Arousal than in the Non-arousal condition (MGRS x Pre-arousal x Gender Relevance x Time).

Heart Rate (hypothesis 5). Table 11 shows mean HR of low and high MGRS groups in the Non-arousal and Arousal conditions during Baseline, Narrator, Conflict, and Post segments for Masculine Gender Relevant and Masculine Gender Irrelevant situations. Results showed no differences in Baseline HR based on MGRS status or Pre-arousal condition in Masculine Gender Relevant or Masculine Gender Irrelevant situations, $p's > .10$. An interaction was found for Gender Relevance and Pre-arousal, $F(1,76) = 4.366, p < .05$. Paired t-test comparisons showed that HR was greater during Masculine Gender Irrelevant than during Masculine Gender Relevant situations in the Arousal condition, $t(39) = 3.67, p < .001$, but not in the Non-arousal condition, $t(39) = .35, p > .50$. However, this finding no longer remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 1.60, p > .10$. Results also showed a main effect for Time, $F(3,228) = 28.77, p < .001$. Specifically, pairwise comparisons, using Bonferroni's adjustment for multiple comparisons, showed that Narrator (75.24) and Conflict (74.42) HR was significantly greater than Baseline (72.55) and Post (73.01) HR at the .05 level. Narrator HR was also significantly greater than Conflict HR, $p < .05$. However, this finding also no longer remained significant after controlling for self-report responses to the pre-arousal conditions, $F(3,216) = .84, p < .10$. Results revealed no other interaction effects for MGRS status,

Gender Relevance, Time, and Pre-arousal condition, and no main effects for MGRS or Pre-arousal condition.

Skin Conductance Level (hypothesis 6). Table 12 shows mean SCL of low and high MGRS groups in the Non-arousal and Arousal conditions during Baseline, Narrator, Conflict, and Post segments for Masculine Gender Relevant and Masculine Gender Irrelevant situations. Results showed no differences in Baseline SCL based on Pre-arousal condition in Masculine Gender Relevant or Masculine Gender Irrelevant situations, $p's > .10$. Results showed, however, that relative to high MGRS males, low MGRS males evidenced greater SCL during Baseline in Masculine Gender Relevant and Masculine Gender Irrelevant situations, $t's(78) = 2.37$ and 2.71 , respectively, $p's < .05$.

Results showed that compared to high MGRS men, low MGRS men evidenced greater SCL, $F(1,76) = 7.26$, $p < .01$. This finding remained significant after controlling for self-report responses to the pre-arousal conditions, $F(1,72) = 5.14$, $p < .05$. A main effect was also found for Time, $F(3,228) = 18.88$, $p < .001$. Pairwise comparisons, using Bonferroni's adjustment for multiple comparisons, showed that Baseline (14.62) levels were significantly lower than Narrator (15.68), Conflict (15.62), and Post (15.18) levels at the .05 level. Narrator and Conflict levels were also significantly greater than Post levels, $p < .05$. This finding also remained significant after controlling for self-report responses to the pre-arousal conditions, $F(3,216) = 4.15$, $p < .01$. Results revealed no interaction effects for MGRS status, Gender Relevance, and Pre-arousal condition, and no main effects for MGRS or Pre-arousal condition. Results from an ANCOVA revealed that differences in SCL between low and high MGRS men remained significant after controlling for Baseline difference in SCL, $F(1,75) = 5.37$, $p < .05$. Results also showed that the

effect for Time remained significant after controlling for baseline differences in SCL, $F(2,152) = 4.15, p < .05$.

Discussion

The primary purpose of the present study was to examine the independent and combined effects of MGRS and pre-arousal on men's cognitions, affect, and physiological reactivity to masculine relevant and irrelevant intimate conflict situations. In general, it was expected that high MGRS men who were pre-aroused would be most likely to appraise intimate conflict situations as threatening, resulting in elevated reports of negative attributions, negative affect, anger, verbal aggression, and physiological reactivity.

Unexpectedly, analyses revealed no significant interaction effects based on combining MGRS and pre-arousal. One interpretation for the lack of significant interaction effects may be that inducing physiological reactivity produced a similar effect on high versus low MGRS males' cognitive, affective, or physiological responses to partner behavior. On the other hand, since results failed to show any main effects for pre-arousal conditions, a more likely interpretation is that inducing physiological reactivity in one moment had minimal, if any, impact on subsequent performance for high or low MGRS men. I contend, however, that methodological limitations of the present study may partly explain the lack of significant interaction effects.

For example, the latency period between pre-arousal conditions and exposure to the vignettes was approximately 5 minutes, nearly 2.5 times the latency period in related studies (Cosenzo & Franchina, In press; Zillmann et al., 1975). Since results from this study showed that HR was similar for both pre-arousal conditions during the post-prior baseline, it may be that excitation transfer failed to occur, resulting in the non-significant findings for responses to the vignettes based on pre-arousal conditions. Moreover, if the transfer of excitation failed to

occur, it partly explains why high and low MGRS did not differ in response to the vignettes following the arousal and non-arousal conditions.

Additionally, while this study was able to assess Zillmann's excitation-transfer theory using heart rate, a visual overview of the heart rate data (i.e., Table 4) clearly indicates that the pre-arousal task did not produce dramatic increases in heart rate. In fact, the cold-pressor task produced an increase in heart rate of 5.5 beats per minute. On the other hand, research showed that riding a stationary bicycle for a brief period increased heart rate by an average of 53 beats per minute (e.g., Zillmann et al., 1975). This type of stimulus is clearly an advancement over cold water because it produces large changes in heart rate, which better promotes testing Zillmann's theory because it successfully transfers excitation to subsequent challenge or threat.

Given these limitations, it is premature to draw any definitive conclusions about the validity of Zillmann's excitation-transfer theory or examining the combined effects of pre-arousal and appraisal of threat. Future research in this area should aim to more closely replicate Zillmann's methodology in order to substantiate the theory of excitation transfer. For example, by exposing high and low MGRS men to an arousal-inducing task (e.g., bike-riding) or to a control group, followed immediately by a task (e.g., hand-grip test) in the presence of a rude confederate who berates the men, it may be possible to determine if high and low MGRS men evidence differential cognitive, affective, and physiological responses to the confederate based on pre-arousal conditions.

Effects of Pre-Arousal on Self-Reports and Physiological Reactivity

This study tested Zillmann's excitation-transfer theory by pre-arousing men, thus increasing their physiological reactivity, prior to exposure to intimate conflict situations. Based on this theory, it was expected that being pre-aroused would decrease men's ability to inhibit

cognitive and emotional responses, resulting in greater self-reported cognitive, affective, and behavior responses as well as greater physiological reactivity to intimate conflict situations. Results showed that heart rate was greater during masculine gender *irrelevant* than masculine gender relevant situations in the Arousal condition but not in the Non-arousal condition. In other words, exposure to cold water in the first phase of the study, which produced increased heart rate, led to greater subsequent increases in heart rate in response to masculine gender irrelevant situations but not to masculine gender relevant situations. This finding suggests that pre-arousal attenuated heart rate responses to masculine gender relevant situations. Overall, the results of the present study do not support Zillmann's excitation-transfer theory. In fact, the results tend to support an opposite perspective because results showed that pre-arousal led to reduced reactivity to threatening situations.

One explanation for the unexpected interaction for pre-arousal and gender relevance for heart rate may be that the arousal condition served to cognitively prime participants' mood and led to increased heart rate responses to the gender irrelevant situations. Since anger was reported more in response to the arousal than to the non-arousal condition, the pre-existing anger may have subsequently influenced men's interpretations of relatively gender irrelevant female partner behavior, which resulted in increased heart rate responses.

Limitations of the Present Study for Pre-Arousal

The results of the present study may be somewhat complicated by unexpected results from the pre-arousal task. It was expected that the task would produce greater SCL and HR in the Arousal condition compared to the Non-arousal condition during the Task segment than during the Baseline or Post-pressor Baseline segments. Results supported this hypothesis for HR but not for SCL. Specifically, HR was greatest during the Task segment in the Arousal

condition. In other words, HR was greatest when men's hands were submerged in cold water. In fact, Table 4 shows that HR was approximately 5.5 beats-per-minute greater during the Task segment of the Arousal condition compared to the Non-arousal condition. Thus, even though HR did not increase dramatically as discussed earlier, given that the arousal condition produced expected increases in HR, this study directly tested Zillmann's excitation-transfer theory by examining the relative importance of pre-arousal on subsequent responses to masculine relevant threats.

On the other hand, results showed that SCL was greatest during the Task condition as expected, but this occurred during both the Arousal and Non-arousal conditions. Thus, exposure to cold water did not differentially influence SCL. This is an unexpected finding given that the cold-pressor task has been shown to produce marked increases in other measures of autonomic nervous system activity (e.g., heart rate and blood pressure). For the present study, this finding meant that direct testing of Zillmann's theory would be impossible for SCL. However, one potential explanation for the lack of differences between arousal conditions is that skin conductance may be influenced by cognitive processes more than affective ones. Specifically, researchers have concluded that "electrodermal lability" (i.e., increased skin conductance responses to stimuli) reflects a heightened capacity to process information in the environment (Dawson, Schell, & Filion, 2000; Katkin, 1975; Lacey & Lacey, 1958). Therefore, it may be that the presentation of the water following the initial baseline resulted in increased allocation of information processing resources in an attempt to anticipate and prepare for the demands of the experiment, regardless of water temperature, which led to an increase in SCL.

Moreover, the notion of electrodermal lability may explain why low MGRS men evidenced increased SCL in response to the vignettes compared to high MGRS men.

Specifically, researchers have found that some individuals evidenced trait electrodermal lability, and these individuals maintained attention and focus on tasks and performed better than did “electrodermal stabiles” (see Dawson et al., 2000 for review). Based on these findings, the results of the present study suggest that low MGRS men’s heightened SCL may have served to increase their ability to focus and process information from the vignettes compared to high MGRS men.

As mentioned earlier, SCL was chosen over skin conductance responses (SCR) because it was more important to examine general SCL across types of vignettes than to examine specific responses within vignettes. Given the results of the present study, however, future research that employ vignettes may benefit from using SCR instead of SCL. Although this measure has a major limitation, some research suggests that SCR may be greater to verbal or socially relevant stimuli than to a noise burst (see Scarpa & Raine, 1997 for review). Moreover, using SCR may allow for a more precise examination of Zillmann’s theory, since the cold-pressor task may produce dramatic SCR while only minimally impacting SCL.

Effects of MGRS on Self-Reports of Negative Attributions, Affect, and Verbal Aggression

Results of this study were consistent with those of Eisler et al. (2000) and Franchina et al. (2001) which showed that for both MGRS groups masculine gender relevant situations produced more negative attributions, anger, negative affect, and verbal aggression than did masculine gender irrelevant situations. However, results showed that relative to low MGRS men, high MGRS men reported greater anger, negative attributions and verbal aggression in response to masculine gender relevant and irrelevant situations. The findings for negative affect and verbal aggression corroborate those of Eisler et al. (2000). However, this study differed from the Eisler et al. study in that high MGRS men reported greater attributions of negative intent to partner

behavior in masculine gender relevant and irrelevant situations. Interestingly, the findings for attributions and anger corroborate those of Franchina et al. (2001) suggesting that the female's behavior in both masculine gender relevant and irrelevant situations challenged the male's feelings of dominance and control. Based on the findings of Franchina et al. and the current study, it may be that high MGRS men are particularly sensitive to appraising intimate conflict situations as threatening their understanding and ability to enact masculine gender role imperatives even in situations that are viewed by most men as irrelevant or unimportant in this regard. Eisler et al. (2000) concluded that high MGRS men may feel threatened when female partners act assertively in all situations, irrespective of its gender relevance. These results suggest that improving men's ability to inhibit their appraisals of threat may reduce the potential for becoming angry and aggressive during conflict situations.

Effects of MGRS on Physiological Reactivity

Results also showed that heart rate was differentially influenced by the gender relevance of the situations. However, contrary to expectations, heart rate was greater during masculine gender irrelevant than masculine gender relevant situations. This finding contradicts previous research that has shown that men are more likely to evidence increased heart rate during interactions with partners or situations that involve a high achievement challenge relative to a low achievement challenge (e.g., Smith, Gallo, Goble, Ngu, & Stark, 1998), a high masculine challenge relative to a low masculine challenge (e.g., Lash et al., 1990), and wife belligerence relative to wife acquiescence (Gottman et al., 1995). One potential explanation for the non-significant findings in the present study may be that listening and responding to hypothetical vignettes does not produce changes in physiological reactivity. Researchers studying couples' interactions have typically used audio or video-taped hypothetical vignettes to assess *self-reports*

of constructs, including anger (e.g., Dutton & Browning, 1988), hostility and irritability (e.g., Maiuro et al., 1988), jealousy, rejection, and abandonment (e.g., Holtzworth-Munroe & Hutchinson), and verbal and physical coping (e.g., Holtzworth-Munroe & Anglin, 1991). In contrast, researchers interested in physiological reactivity have typically used actual couples interacting in the lab setting (e.g., conflict discussions/disagreements) (Gottman et al., 1995; Meehan & Holtzworth-Munroe, 1998; Smith & Gallo, 1998). Thus, it may be that studies which assess physiological reactivity require “actual” exposure to threatening stimuli relative to vignette studies which assess attitudes, perceptions, and feelings.

In addition to HR, this study also examined SCL during conflict situations and found that low MGRS men evidenced greater SCL than did high MGRS men. This finding also contradicts expectations based on previous research which showed elevated SCL in men in challenging situations (e.g., Lovallo & Pishkin, 1980). However, Scarpa and Raine (1997) reviewed the literature on SCL in relation to anger and violence and found support for underarousal or low SCL in antisocial individuals. Since research indicates that MGRS scores are positively correlated with high risk health behaviors (e.g., smoking and alcohol consumption) (e.g., Eisler, Skidmore, & Ward, 1988) and moderately associated with Type A behavior and hostility (e.g., Watkins, Eisler, Carpenter, Schechtman, & Fisher, 1991), elevated scores on the MGRS scale may also be associated with antisociality. This interpretation should be viewed with caution, but suggests that high MGRS men experience underarousal in response to partner behavior.

Taken together, the findings of the present study suggest that high MGRS men may be more susceptible to appraising conflict situations as threatening, resulting in increased self-reported negative attributions, anger and verbal aggression and possibly decreased physiological reactivity compared to low MGRS men. In combination these responses may function to prepare

high MGRS men to regain or secure their control and power in conflicts in intimate relationships by becoming aggressive.

Limitations of the Present Study for MGRS

The results of the present study may have been complicated by MGRS differences during the pre-arousal task. Specifically, it was hypothesized that physiological reactivity during the pre-arousal condition would not be differentially influenced by MGRS status. This hypothesis was supported in relation to HR, but not for SCL. Results showed that low MGRS men evidenced greater SCL during the Cold-pressor baseline and Task segments than did high MGRS men, regardless of Pre-arousal condition. Moreover, the differences during the Task segment remained significant after statistically controlling for baseline differences. Even though MGRS groups did not differ during the Post-baseline segment of the cold-pressor task, low MGRS men evidenced greater SCL during the subsequent baselines for the vignettes than did high MGRS men. Thus, it may be difficult to interpret the nature of MGRS differences during the vignettes. Yet, this finding may provide support for an underarousal hypothesis in high MGRS men.

The results of the present study may have also been complicated by MGRS differences on self-report responses to the pre-arousal task. It was expected that self-reported anger, negative affect, and appraisal would not be differentially influenced by Pre-arousal condition or MGRS status. However, results showed that high MGRS men reported more negative affect than did low MGRS men, and high MGRS men reported more negative appraisal during the Arousal condition compared to low MGRS men. This finding was unexpected because neutral instructions were given for the Pre-arousal task. Specifically, participants were informed that the purpose of placing their hand in the water was to ensure that the equipment was working. Thus, the instructions were designed to minimize the likelihood of men perceiving the task as a

challenge. However, the fact that high MGRS men reported greater negative appraisals during the arousal condition suggests that they perceived the task as a challenge. This finding is contrary to those found by Lash and colleagues (1990), who found that low and high MGRS men did not differ in their appraisal of the cold-water following neutral instructions. However, results showed that after statistically controlling for self-reports to the pre-arousal conditions, the main effects for MGRS remained, while only some of the main effects for gender relevance remained. Thus, the main finding that high MGRS men differ from low MGRS men in their responses to female partner behavior remains robust.

General Discussion and Future Directions

Results from the present study suggest that if high MGRS men are prone to underarousal in response to intimate conflict situations, pre-arousal from any type of task may not influence physiological reactivity or their responses to threatening situations. Moreover, it may be that reduced heart rate and skin conductance improve men's ability to maintain dominance and control in situations. For example, Gottman et al. (1995) found that a proportion of violent men reduced their heart rate during marital interactions. They contend that these men perceived their wives as trying to control them, which led them "to begin manipulating their own physiology to affect calm and to begin manipulating their partner's emotions by becoming threatening, belligerent, and contemptuous" (p. 245). While the results of the present study did not indicate a statistically significant difference in heart rate between low and high MGRS men to conflict situations, a visual examination of Table 11 shows that high MGRS men generally evidenced somewhat lower heart rate than did low MGRS men. This difference suggests that high MGRS men may be somewhat more likely to reduce their heart rate in conflict situations where the female partner is perceived as challenging male power and control compared to low MGRS men.

In turn, decreased heart rate may serve to increase high MGRS men's ability to regain their sense of control and power in interpersonal situations through verbally or physically aggressive means. This explanation should be viewed with caution since studies have not assessed the relationship between MGRS and violence to determine if these variables relate to physiological responses in intimate conflict situations. Moreover, given this study's null findings for heart rate and MGRS status and potential limitations of vignettes in altering physiological reactivity, future studies may benefit from using actual couple interactions to determine whether a reliable relationship exists between reduced heart rate and MGRS status.

Overall, results from the present study suggest that some men's construals of their masculine gender role predispose them to appraise intimate conflict situations as threatening. Several studies, including the present study, have shown that these men typically respond to their appraisals of threat by attributing greater negative intent, reporting greater anger, and reporting greater verbal aggression (Eisler et al., 2000; Franchina et al., 2001). Results from this study also provided an initial but tentative avenue for further study; namely, that high MGRS men may experience underarousal in response to female partner threat. It seems the next programmatic step would be to examine the notion of underarousal by studying the effects of MGRS on men's cognitions, affect, and physiological reactivity in actual couple or marital interactions. However, the present study may have identified some dispositional and situations precursors to partner violence, and future studies should actively assess whether cognitive, affective, or physiological measures mediate the relationship between MGRS and partner violence.

References

- American Psychological Association. (1996). APA presidential task force on violence and the family report. Washington, DC: Author.
- Babcock, J., Waltz, J., Jacobson, N. S., & Gottman, J. (1993). Power and violence: The relation between communication patterns, power discrepancies, and domestic violence. Journal of Consulting and Clinical Psychology, 61, 40-50.
- Brooks, G. R., & Silverstein, L. S. (1995). Understanding the dark side of masculinity: An interactive systems model. In R. F. Levant & W. S. Pollack (Eds.), A new psychology of men (pp. 280-333). New York: Basic Books.
- Bryant, J., & Zillmann, D. (1977). The mediating effect of the intervention potential of communication on displaced aggressiveness and retaliatory behavior. In B. D. Ruben (Ed.), Communication Yearbook 1 (pp. 291-306). New Brunswick, NJ: ICA-Transaction Press.
- Cosenzo, K. A., & Franchina, J. J. (In press). The roles of cardiovascular activity and negative affect on the attributions of men to provocative and non-provocative female behavior. Journal of Men and Masculinity.
- David, D., & Brannon, R. (Eds.). (1976). The forty-nine percent majority: The male sex role. Reading, MA: Addison-Wesley.
- Dawson, M. E., Schell, A. M., & Filion, D. L. (2000). The electrodermal system. In J. T. Cacioppo, L. G. Tassinary, & G. G. Bemtson (Eds.). Handbook of psychophysiology (2nd ed.), pp. 200-223. New York, NY: Cambridge University Press.
- Department of Justice Report. (1995). Violence against women: Estimates from the redesigned survey. NCJ, 154348.
- Doyle, J. A. (1989). The male experience (2nd ed.) Dubuque, IA: William C. Brown.

Dutton, D. B., & Browning, J. J. (1988). Concern for power, fear of intimacy, and aversive stimuli for wife assault. In G. Hotaling, D. Finkelhor, J. T. Kirkpatrick, & M. A. Straus (Eds.). Family abuse and its consequences: New directions in research (pp. 163-175). Newbury Park, CA: Sage. 163-175.

Eisler, R. M. (1995). The relationship between masculine gender role stress and men's health risk: The validation of a construct. In R. F. Levant and W. S. Pollack (Eds.). A new psychology of men (pp. 207-228). New York: Basic Books.

Eisler, R. M., Franchina, J. J., Moore, T. M., Honeycutt, H., & Rhatigan, D. L. (2000). Masculine gender role stress and intimate abuse: Effects of gender relevance of the conflict situation on men's attributions and affective responses. Journal of Men and Masculinity, 1, 30-36.

Eisler, R. M., & Skidmore, J. R. (1987). Masculine gender role stress: Scale development and component factors in the appraisal of stressful situations. Behavior Modification, 11(2), 123-136.

Eisler, R. M., Skidmore, J. R., & Ward C. H. (1988). Masculine gender-role stress: Predictor of anger, anxiety and health-risk behaviors. Journal of Personality Assessment, 52, 133-141.

Franchina, J. J., Eisler, R. M., & Moore, T. M. (2001). Masculine gender role stress and intimate abuse: Effects of masculine gender relevance of dating situations and female threat on men's attributions and affective responses. Journal of Men and Masculinity, 2(1), 34-41.

Gottman, J. M., Jacobson, N. S., Rushe, R. H., Shortt, J. W., Babcock, J., La Taillade, J. J., & Waltz, J. (1995). The relationship between heart rate reactivity, emotionally aggressive behavior, and general violence in batterers. Journal of Family Psychology, 9(3), 227-248.

Holtzworth-Munroe, A., & Anglin, K. (1991). The competency of responses given by maritally violent versus nonviolent men to problematic marital situations. Violence and Victims, 6, 257-269.

Holtzworth-Munroe, A., Bates, L., Smutzler, N., & Sandin, E. (1997). A brief review of the research on husband violence. Part 1: Maritally violent versus nonviolent men. Aggression and Violent Behavior, 2(1), 65-99.

Holtzworth-Munroe, A., & Hutchinson, G. (1993). Attributing negative intent to wife behavior: The attributions of maritally violent versus nonviolent men. Journal of Abnormal Psychology, 102(2), 206-211.

Hugdahl, K. (1995). *Psychophysiology: The mind-body perspective*. London England: Harvard University Press.

Katkin, E. S. (1975). Electrodermal lability: A psychophysiological analysis of individual differences in response to stress. In I. G. Sarason & C. D. Spielberger (Eds.), Stress and Anxiety, vol. 2, pp. 141-176. Washington, DC: Aldine.

Lacey, J. E., & Lacey, B. C. (1958). Verification and extension of the principle of autonomic response-stereotypy. American Journal of Psychology, 71, 50-73.

Lash, S. J., Eisler, R. M., & Schulman, R. S. (1990). Cardiovascular reactivity to stress in men: Effects of masculine gender role stress appraisal and masculine performance challenge. Behavior Modification, 14(1), 3-20.

Levant, R. F., Hirsch, L., Celentano, E., Cozza, T., Hill, S., MacEachern, M., Marty, N., & Schnedeker, J. (1992). The male role: An investigations of norms and stereotypes. Journal of Mental Health Counseling, 14, 325-337.

Levenson, R. W., & Gottman, J. M. (1983). Marital interaction: Physiological linkage and affective exchange. Journal of Personality and Social Psychology, 45(3), 587-597.

Lovullo, W. R., & Pishkin, V. (1980). A psychophysiological comparison of type A and B men exposed to failure and uncontrollable noise. Psychophysiology, 17(1), 29-36.

Maiuro, R. D., Cahn, T. S., Vitaliano, P. P., Wagner, B. C., & Zegree, J. B. (1988). Anger, hostility, and depression in domestically violent versus generally assaultive men and nonviolent control subjects. Journal of Consulting and Clinical Psychology, 56, 17-23.

Margolin, G., John, R. S., & Gleberman, L. (1988). Affective responses to conflictual discussions in violent and nonviolent couples. Journal of Consulting and Clinical Psychology, 56, 24-33.

Margolin, G., Sibner, L., & Giberman, L. (1988). Wife battering. In V.B. Van Hasselt, R. L. Morrison, A. S. Bellack, & M. Hersen (Eds.), Handbook of family violence (pp. 89-113). New York: Plenum Press.

Mason, A., & Blankenship, V. (1987). Power and affiliation motivation, stress, and abuse in intimate relationships. Journal of Personality and Social Psychology, 52, 203-210.

Meehan, J. C., & Holtzworth-Munroe, A. (1998). Men's physiological reactivity in marital interactions: Is the Gottman et al. (1995) typology replicable? Poster presented at the 32nd annual meeting of the Association for the Advancement of Behavior Therapy, Washington, DC.

Moore, T. M. (1998). Attributions of negative intent and responsibility and anger arousal of abusive and nonabusive males to perceived negative dating partner behavior. Unpublished masters thesis. Virginia Polytechnic Institute and State University.

Moore, T. M., Eisler, R. M., & Franchina, J. J. (2000). Causal attributions to

provocative dating situations by abusive and non-abusive males. Journal of Family Violence, 15(1), 69-80.

Pleck, J. H. (1995). The gender role strain paradigm: An update. In R. F. Levant & W. S. Pollack (Eds.), A new psychology of men (pp. 11-32). New York: Basic Books.

Prince, J. E., & Arias, I. (1994). The role of perceived control and desirability of control among abusive and nonabusive husbands. The American Journal of Family Therapy, 22(2), 126-134.

Raine, A. (1993). The psychopathology of crime: Criminal behavior as a clinical disorder. Los Angeles: Academic Press.

Scarpa, A., & Raine, A. (1997). Psychophysiology of anger and violent behavior. Psychiatric Clinics of North America, 20(2), 375-394.

Scarpa-Scerbo, A., Weinstock-Freedman, L., Raine, A., Dawson, M. E., & Venables, P. H. (1992). A major effect of recording site on measurement of electrodermal activity. Psychophysiology, 29(2), 241-246.

Smith, T. W., & Gallo, L. C. (1999). Hostility and cardiovascular reactivity during marital interaction. Psychosomatic Medicine, 61(4), 436-445.

Smith, T. W., Gallo, L. C., Goble, L., Ngu, L. Q., & Stark, K. A. (1998). Agency, communion, and cardiovascular reactivity during marital interaction. Health Psychology, 17(6), 537-545.

Spielberger, C. D., Johnson, E. H., Russell, S. F., Crane, R. J., Jacobs, G. A., and Worden, T. J. (1985). The experience and expression of anger: Construction and validation of an anger expression scale. In Chesney, M. A., and Rosenman, R. H. (eds.), Anger and Hostility in Cardiovascular and Behavioral Disorders, Hemisphere, Washington, CD.

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. Journal of Marriage and the Family, 41, 75-88.

Straus, M. A., & Gelles, R. G. (1988). Violence in American families: How much is there and why does it occur? In E. W. Nunnally, C. S. Chilman, & F. M. Cox, Families in trouble series, (Vol. 3, pp. 141-162). Newbury Park, CA: Sage.

Straus, M. A., Gelles, R. G., & Steinmetz, S. K. (1980). Behind closed doors: Violence in the American Family. New York: Doubleday.

Suarez, E. C., & Williams, R. B. (1989). Situational determinants of cardiovascular and emotional reactivity in high and low hostile men. Psychosomatic Medicine, 51, 404-418.

Sugarman, D. B., & Frankel, S. L. (1996). Patriarchal ideology and wife-assault: A meta-analytic review. Journal of Family Violence, 11(1), 13-40.

Sugarman, D. B., & Hotaling, G. T. (1989). Dating violence: Prevalence, context, and risk markers. In M. A. Pirog-Good & J. E. Stets (Eds.), Violence in dating relationships: Emerging social issues. New York: Praeger.

Walker, L. E. (1999). Psychology and domestic violence around the world. American Psychologist, 54(1), 21-29.

Watkins, P. L., Eisler, R. M., Carpenter, L., Schechtman, K. B., & Fisher, E. B. (1991). Psychosocial and physiological correlates of male gender role stress among employed adults. Behavioral Medicine, 17, 86-90.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of a brief measure of positive and negative affect: The PANAS scales. Journal of Personality and Social Psychology, 54(6), 1063-1070.

White, J. W., & Koss, M. P. (1991). Courtship violence: Incidence in a national sample

of higher education students. Violence and Victims, 6(4), 247-256.

Zillmann, D. (1987). Cognition-excitation interdependencies in aggressive behavior. Aggressive Behavior, 14, 51-64.

Zillmann, D. (1971). Excitation transfer in communication-mediate aggressive behavior. Journal of Experimental Social Psychology, 7, 419-434.

Zillmann, D., Bryant, J., Cantor, J. R., & Day, K. D. (1975). Irrelevance of mitigating circumstances in retaliatory behavior at high levels of excitation. Journal of Research in Personality, 9, 282-293.

Zillmann, D., & Cantor, J. R. (1976). Effect of timing of information about mitigating circumstances on emotional responses to provocation and retaliatory behavior. Journal of Experimental Social Psychology, 12, 38-55.

Zillmann, D., & Johnson, R. C. (1973). Motivated aggressiveness perpetuated by exposure to aggressive films and reduced by exposure to nonaggressive films. Journal of Research in Personality, 7, 261-276.

Table 1. Demographic Data of Sample.

Mean Age: 19.39 years

Academic Level:

Freshmen	38 (47.5%)
Sophomore	29 (36.3%)
Junior	9 (11.3%)
Senior	3 (3.8%)

Ethnicity:

Caucasian	64 (80%)
Asian-American	6 (7.5%)
African-American	3 (3.8%)
Hispanic	2 (2.5%)
Other	5 (6.3%)

Religious Background:

Protestant	31 (38.8%)
Catholic	18 (22.5%)
Jewish	1 (1.3%)
Muslim	1 (1.3%)
Other	20 (25%)

Relationship Status:

Dating	57 (71.3%)
Single	23 (28.7%)

Length of Current Relationship (n=57):

Between 3 and 6 months	17 (30.4%)
Between 6 and 12 months	12 (21.4%)
More than 12 months	27 (48.2%)

Table 2. Mean State Anger, Negative Affect, Appraisal, NIQ, Conflict Resolution Tactics, and Baseline HR and SCL and (Standard Deviations) Made by Dating and Non-dating Males to Pre-arousal Condition, Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Measure	Dating (N=57)	Single (N=23)*
Pre-arousal Condition		
State Anger	1.09 (.25)	1.06 (.12)
Negative Affect	1.25 (.26)	1.21 (.22)
Appraisal	2.33 (1.18)	2.23 (1.11)
Baseline Heart Rate	76.01 (13.35)	73.38 (13.09)
Baseline SCL	11.29 (6.66)	11.15 (4.80)
Masculine Gender Relevant Situations		
State Anger	2.21 (.77)	2.25 (.68)
Negative Affect	2.00 (.66)	1.98 (.55)
Negative Intent Attributions	3.76 (1.22)	3.96 (.77)
Reasoning Tactics	3.63 (.89)	3.35 (.98)
Verbal Aggression Tactics	2.04 (.91)	2.30 (.96)
Masculine Gender Irrelevant Situations		
State Anger	1.40 (.43)	1.41 (.31)
Negative Affect	1.42 (.39)	1.51 (.35)
Negative Intent Attributions	2.35 (1.09)	2.58 (.88)
Reasoning Tactics	2.99 (.64)	3.17 (.72)
Verbal Aggression Tactics	1.36 (.61)	1.45 (.46)

* All t-test comparisons non-significant, $p's > .20$.

Table 3. Demographic Data Means and Distributions for Low and High MGRS men.

Demographic Variable		Low MGRS	High MGRS*
Age		19.46 (1.19)	19.33 (1.14)
Academic Level (n's)	Freshmen	17	21
	Sophomore	16	13
	Junior	5	4
	Senior	1	2
Ethnicity (n's)	Caucasian	33	31
	Asian-American	2	4
	African-American	1	2
	Hispanic	1	1
Religious Background (n's)	Protestant	16	15
	Catholic	11	7
	Jewish	1	0
	Muslim	1	0
Relationship Status (n's)	Dating	30	27
	Single	10	13
Length of Current Relationship (n's)			
	Between 3 and 6 months	9	8
	Between 6 and 12 months	6	6
	More than 12 months	14	13
Termination of Most Recent Relationship (n's)			
	Less than 3 months	5	6
	Between 3 and 6 months	0	5
	More than 12 months	6	1
Length of Most Recent Relationship (n's)			
	Between 3 and 6 months	3	7
	Between 6 and 12 months	4	2
	More than 12 months	3	3
Number of Relationships (n's)	1	11	12
	2	14	8
	3	9	7
	4	3	0
	5	1	2
	6	0	1
Length of Longest Relationship (months)		20.76 (13.91)	16.63 (10.32)

* All t-test comparisons based on means of variables were non-significant, $p's > .10$.

Table 4. Mean Heart Rate Levels and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for the Cold-pressor Baseline, Task, and Post-pressor Baseline.

MGRS Status	<u>Non-arousal</u>			<u>Arousal</u>		
	Baseline	Task	Post	Baseline	Task	Post
Low	75.39 (14.30)	74.77 (14.67)	72.57 (13.87)	76.37 (11.56)	81.85 (13.95)	73.64 (10.98)
High	72.99 (14.46)	72.02 (15.67)	69.61 (13.70)	76.28 (13.21)	78.97 (13.85)	73.80 (12.13)

Table 5. Mean Skin Conductance Levels and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for the Cold-pressor Baseline, Task, and Post-pressor Baseline.

MGRS Status	<u>Non-arousal</u>			<u>Arousal</u>		
	Baseline	Task	Post	Baseline	Task	Post
Low	12.75 (6.18)	14.63 (7.01)	12.67 (6.36)	12.70 (8.29)	16.17 (8.91)	13.75 (9.25)
High	9.42 (4.87)	10.15 (4.70)	10.35 (5.38)	10.13 (4.15)	11.24 (5.53)	11.02 (4.74)

Table 6. Mean State Anger, Negative Affect, and Appraisal Scores and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions.

Pre-arousal Condition	<u>State Anger</u>		<u>Negative Affect</u>		<u>Appraisal</u>	
	Low	High	Low	High	Low	High
Non-arousal	1.00(.00)	1.04(.11)	1.16(.17)	1.26(.29)	1.70(.70)	1.54(.42)
Arousal	1.11(.31)	1.20(.28)	1.21(.20)	1.33(.29)	2.45(1.10)	3.58(.99)

Table 7. Mean State Anger Scores and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Masculine Gender Relevance	<u>Low MGRS</u>		<u>High MGRS</u>	
	Non-arousal	Arousal	Non-arousal	Arousal
Relevant	1.77(.57)	2.17(.71)	2.38(.82)	2.56(.65)
Irrelevant	1.19(.17)	1.33(.31)	1.56(.61)	1.54(.25)

Table 8. Mean Negative Affect Scores and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Masculine Gender Relevance	<u>Low MGRS</u>		<u>High MGRS</u>	
	Non-arousal	Arousal	Non-arousal	Arousal
Relevant	1.70(.44)	2.16(.66)	2.04(.65)	2.10(.67)
Irrelevant	1.21(.23)	1.45(.41)	1.61(.46)	1.53(.28)

Table 9. Mean NIQ Scores and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Masculine Gender Relevance	<u>Low MGRS</u>		<u>High MGRS</u>	
	Non-arousal	Arousal	Non-arousal	Arousal
Relevant	3.24(1.35)	3.88(1.03)	3.97(1.11)	4.18(.71)
Irrelevant	1.87(.67)	2.25(1.13)	2.77(1.07)	2.78(.99)

Table 10. Mean Verbal Aggression Scores and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Masculine Gender Relevance	<u>Low MGRS</u>		<u>High MGRS</u>	
	Non-arousal	Arousal	Non-arousal	Arousal
Relevant	1.75(.88)	1.88(.77)	2.38(.96)	2.39(.95)
Irrelevant	1.17(.40)	1.19(.38)	1.61(.75)	1.58(.56)

Table 11. Mean Heart Rate Levels and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for Baseline, Narrator, Conflict, and Post Segments for Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Gender Relevance	<u>NON-AROUSAL</u>				<u>AROUSAL</u>			
	Baseline	Narrator	Conflict	Post	Baseline	Narrator	Conflict	Post
<u>Relevant</u>								
Low MGRS	71.69 (13.68)	73.83 (13.72)	71.92 (13.14)	71.21 (13.60)	74.80 (9.85)	77.98 (12.08)	76.77 (12.94)	76.17 (10.93)
High MGRS	69.05 (13.01)	72.27 (14.36)	71.26 (14.01)	69.23 (13.70)	74.05 (12.29)	75.96 (11.06)	74.57 (11.06)	73.86 (11.52)
<u>Irrelevant</u>								
Low MGRS	71.61 (13.73)	73.83 (13.94)	72.97 (13.25)	71.74 (13.66)	75.89 (10.76)	79.32 (11.14)	79.29 (13.39)	76.90 (10.85)
High MGRS	69.32 (12.86)	72.03 (14.48)	71.41 (13.91)	69.64 (13.18)	73.43 (11.55)	76.54 (11.50)	76.54 (11.73)	74.71 (12.20)

Table 12. Mean Skin Conductance Levels and (Standard Deviations) for Low and High MGRS Men in the Non-arousal and Arousal Conditions for Baseline, Narrator, Conflict, and Post Segments for Masculine Gender Relevant and Masculine Gender Irrelevant Situations.

Gender Relevance	<u>NON-AROUSAL</u>				<u>AROUSAL</u>			
	Baseline	Narrator	Conflict	Post	Baseline	Narrator	Conflict	Post
<u>Relevant</u>								
Low MGRS	14.81 (6.15)	16.20 (8.57)	17.00 (8.80)	15.73 (8.19)	17.90 (9.92)	19.76 (10.65)	19.67 (10.80)	19.18 (10.70)
High MGRS	12.32 (5.01)	12.94 (5.85)	12.93 (5.90)	12.73 (5.76)	13.34 (5.28)	13.92 (5.75)	13.88 (5.65)	13.56 (5.59)
<u>Irrelevant</u>								
Low MGRS	15.17 (6.98)	16.89 (9.22)	15.96 (7.85)	15.49 (7.68)	18.54 (9.92)	19.60 (10.61)	19.62 (10.56)	19.21 (10.42)
High MGRS	12.62 (5.37)	12.93 (5.93)	12.78 (5.82)	12.54 (5.64)	12.75 (5.00)	13.83 (5.92)	13.69 (5.49)	13.56 (5.64)

CURRICULUM VITAE

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Date of Birth December 18, 1970

Education

1999- **Doctoral Candidate, Psychology (Clinical)**
Virginia Polytechnic Institute and State University

Dissertation Project (In Progress): Effects of Masculine Gender Role Stress and Physiological Reactivity on Men's Cognitive and Affective Responses to Intimate Conflict Situations (anticipated defense date: April, 2001)
Major Advisor: Dr. Richard M. Eisler

Preliminary Examination Project: Masculine Gender Role Stress: Aggressive Male Behavior in Intimate Contexts.
Major Advisor: Dr. Richard M. Eisler

1995-1998 **Masters of Science, Psychology (Clinical)**
Virginia Polytechnic Institute and State University

Thesis Project: Responsibility Attributions and Anger Arousal of Abusive and Nonabusive Males to Perceived Negative Dating Partner Behavior
Major Advisor: Dr. Richard M. Eisler

1992-1995 **Bachelor of Arts, Psychology (Clinical and Counseling)**
San Jose State University, San Jose, CA
Senior Honors Thesis Project: Psychological Effects of Raising Children with Autism: A Comparison of Mothers of Singleton and Multiplex Families
Major Advisor: Dr. Michael Alessandri

1990-1992 **Associate of Arts**
Sierra College, Rocklin, CA

Awards/Honors

1997-2000 Panel Member: Graduate Honor System, Virginia Tech
 1997-1998 Graduate Student Representative – Department of Psychology
 1995 San Jose State University College of Social Sciences Foundation Research Grant:
 Senior Honors Thesis
 1995 San Jose State University Center for Autism Research and Educational Services'
 Scholarship for Excellence in Research
 1995 Who's Who Among Students In American Universities & Colleges
 1994-1995 Psi Chi Recruitment Officer, San Jose State University Chapter
 1994 Golden Key National Honors Society
 1993 Psi Chi National Honor Society in Psychology

Society Membership

1999 Division 51 of APA: Men and Masculinity, Student Member
 1999 Division 35 of APA: Psychology of Women, Student Member
 1998 Association for the Advancement of Behavior Therapy, Student Member
 1994 American Psychological Association, Student Affiliate

Professional Activities

Invited Addresses

Moore, T. M., & Scarpa, A. (April, 1999). Understanding and treating public speaking anxiety. Invited address at the Communications Department of Virginia Tech, Blacksburg, VA.

Moore, T. M. (November, 1998). Understanding and assisting the domestically-violent male manage anger. Invited address at the New River Valley Community Action-Head Start Program, Pearisburg, VA.

Moore, T. M., & Rhatigan, D. L. (April, 1998). Models of interpartner violence and treatment of domestically-violent males. Invited address at the Women's Resource Center, Radford, VA.

Editorial Services

1999 Guest Reviewer-Psychology of Men and Masculinity
 1997 Guest Reviewer-Journal of Gender, Culture, and Health

Clinical Training2000-Present Psychology Intern

Duke University Medical Center

Responsibilities include conducting inpatient (n=2 daily) and outpatient (n=12 weekly) psychotherapy, co-leading a weekly Dialectical Behavior Therapy (DBT) group (n=8) for individuals diagnosed with borderline personality disorder, co-leading and participating in a social phobia group (n=8) using an empirically validated treatment, conducting intake assessments and providing brief hospital-based psychotherapy to men presenting with erectile dysfunction (n=10 weekly), and conducting neuropsychological evaluations (n=1 weekly). Currently treating diverse populations, including individuals diagnosed with Major Depressive Disorder, Borderline Personality Disorder, Schizotypal Personality Disorder, Post-Traumatic Stress Disorder, Obsessive Compulsive Disorder, and Panic Disorder using predominately cognitive-behavioral techniques. Also participating in weekly DBT case consultation meetings, receiving didactic instruction on implementing DBT techniques, writing intake and discharge reports, working with a multidisciplinary treatment team to determine treatment strategies for inpatients, and attending weekly individual supervision.

Supervisors: Clive J. Robins, Ph.D. and Thomas R. Lynch, Ph.D.

1999

Summer Graduate Clinician and Supervisor

Psychological Services Center and Child Study Center, Virginia Tech.

Duties included attending bi-weekly practicum meetings, providing supervision to 2nd year graduate clinicians, and conducting therapy with adults and families.

Received group supervision on a weekly basis. Treated an adult with anger control problems, and families with adolescents diagnosed with Social Phobia, Separation Anxiety Disorder, ADHD, and Oppositional Defiant Disorder. Also conducted full psychodiagnostic and educational assessments of children and adults, wrote reports, made recommendations for treatment, provided feedback to individuals and families, and attended case conference meetings.

Supervisors: Lee Cooper, Ph.D. and Thomas H. Ollendick, Ph.D.

1998 - 1999

Graduate Clinician and Supervisor: 4th Year Practicum

Psychological Services Center, Virginia Tech

Attended weekly practicum and supervision meetings, provided supervision to 1st and 2nd year graduate clinicians, and conducted therapy with adolescents and adults. Treated an adult male with anger control problems and conducted group co-therapy with adolescents labeled Seriously Emotionally Disturbed in a local high school and with college students labeled Social Phobic.

Supervisors: Richard M. Eisler, Ph.D. and Angela Scarpa, Ph.D.

1997- 1998

Graduate Clinician: Neuropsychological Practicum Team

Psychological Services Center, Virginia Tech

Conducted individual neuropsychological assessments of a variety of difficulties, including head injury and stroke. Assisted other graduate students in completing

neuropsychological assessments and observed numerous neuropsychological assessments, including administration of Quantitative Electroencephalographs (QEEGs). Administered and interpreted tests, wrote reports, made recommendations for services and treatment, provided feedback to clients, and attended weekly supervision.

Supervisor: David W. Harrison, Ph.D., L.C.P., DABVN, DABFE

1997- 1998 Women's Shelter Volunteer

Volunteered at the Women's Resource Center shelter for abused women. Answered crisis line, offering empathy and problem-solving to anonymous callers. Managed shelter during evenings, providing support and counseling to women and children.

Supervisor: Mary Forti, M.S.W.

1997 Summer Graduate Clinician

Psychological Services Center and Child Study Center, Virginia Tech. Attended weekly practicum meetings and conducted therapy with adults and couples. Received group supervision on a weekly basis. Treated a couple with marital difficulties, a woman with Panic Disorder, and a woman with Major Depressive Disorder. Completed full psychodiagnostic assessments of children, wrote reports, made recommendations for services and treatment, provided feedback, and attended case conference meetings.

Supervisor: Thomas H. Ollendick, Ph.D.

1995-1997 Graduate Clinician: 1st and 2nd Year Practicum

Psychological Services Center, Virginia Tech. Attended weekly practicum meetings and conducted therapy with children, adults, couples and families. Received individual and group supervision on a weekly basis. Treated children and adults with diagnoses of Panic Disorder, Major Depressive Disorder, PTSD, ADHD, and Oppositional Defiant Disorder. Conducted full psychodiagnostic and educational assessments of children and adults, wrote reports, made recommendations for services and treatment, provided feedback to individuals and families, and attended case conference meetings.

Supervisors: Richard M. Eisler, Ph.D., Cynthia P. Lease, Ph.D., Robert S. Stephens, Ph.D., and advanced graduate students

1996 Psychology Extern

Veterans Affairs Palo Alto Health Care Center, Palo Alto, CA Conducted individual assessments and treatment of a variety of psychological and interpersonal difficulties, including Major Depression, Generalized Anxiety Disorder, PTSD, and life adjustment problems. Acted as a co-therapist to the outpatient anger control group for male veterans. Observed weekly grand rounds and individual therapy of patients with HIV and AIDS. Observed weekly check-up sessions with smoking cessation outpatients. Attended and presented weekly case conferences and received weekly supervision.

Supervisor: Gary T. Miles, Ph.D., L.C.P.

- 1995-1996 Group Cotherapist: Anger Control Group for Men
Psychological Services Center, Virginia Tech.
Conducted individual intake interviews to determine the appropriateness of potential new members, planned and presented didactic instruction on controlling anger, facilitated group discussions of various aspects of men's anger, documented progress of individual group members, and attended weekly supervision meetings.
Supervisor: Richard M. Eisler, Ph.D.
- 1994-1995 Behavior Modification Therapist
San Jose State University, San Jose, CA
Conducted therapy utilizing behavior modification techniques with twin boys with autism and a child diagnosed Pervasive Developmental Disorder.
Supervisor: Michael Alessandri, Ph.D.
- 1994-1995 Crisis Hotline Counselor
Contact Crisis Hotline, San Jose, CA
Answered a crisis line, offering empathy, problem-solving and suicide prevention to a variety of anonymous callers.

Research Experience

- 7/00-Present Principal Investigator. Duke University Medical Center. "Psychological predictors of erectile dysfunction." Responsibilities will include project development, data collection and analysis, and manuscript preparation.
Co-Principal Investigator: Steve Herman, Ph.D.
- 8/99-Present Principal Investigator. Virginia Tech. "A meta-analysis of serotonin metabolite 5-HIAA and antisocial behavior." Responsibilities include project development, literature search, selection of studies for meta-analysis, data analysis, and manuscript preparation.
Co-Principal Investigator: Angela Scarpa, Ph.D.
- 1/99-Present Principal Investigator. Virginia Tech. "Masculine gender role stress and intimate abuse: Effects of masculine gender relevance of dating situations and female threat on men's attributions and affective responses." Responsibilities include project development, data collection and analysis, and manuscript preparation.
Co-Principal Investigators: Richard M. Eisler, Ph.D.; Joseph, J. Franchina, Ph.D.
- 8/98-3/99 Principal Investigator. Virginia Tech. "Masculine gender role stress and intimate abuse: Effects of gender relevance of the conflict situation on men's attributions and affective responses." Responsibilities included project development, data collection and analysis, and manuscript preparation.
Co-Principal Investigators: Richard M. Eisler, Ph.D.; Joseph J. Franchina, Ph.D.

- 3/98-5/98 Research Assistant. Virginia Tech. "Accuracy of self-reports II: Determining individuals' adherence to telephone protocol and accuracy of their report." Responsibilities included serving as confederate in interviewing process. Principal Investigator: Jack W. Finney, Ph.D.
- 1/98-10/98 Research Assistant. Virginia Tech. "Effects of abuse history and provocative female verbal behavior on women's attributions about abusive male behavior." Responsibilities included assisting graduate student in data input and analysis. Principal Investigator: Deborah L. Rhatigan, M.S.
- 8/97-5/98 Research Assistant. Virginia Tech. "Testing a social-cognitive model of intimate abusiveness among substance dependent males." Responsibilities included assisting graduate student in coding the competency of violent males' written responses to hypothetical conflictual situations involving their intimate partners. Principal Investigator: Michael Copenhaver, M.S.
- 8/96-5/98 Principal Investigator. Virginia Tech. "Responsibility attributions and anger arousal of abusive and nonabusive males to perceived negative dating partner behavior." Responsibilities included project development, data collection and analysis involving physiological measures, and manuscript preparation. Masters Thesis Project
Supervisor/Chair: Richard M. Eisler, Ph.D.
- 8/96-12/96 Research Assistant. Virginia Tech. "Relationship between early attachment style and psychopathology." Responsibilities included conducting 2-4 hour interviews with students who endorsed some developing psychopathology and administering Anxiety Disorder Interview Schedule and the Adult Attachment Interview. Principal Investigator: Cynthia Lease, Ph.D.
- 1/94-5/95 Principal Investigator. San Jose State University. "Psychological effects of raising children with autism: A comparison of mothers of singleton and multiplex families." Responsibilities included project development, literature review, research design, and data collection, input, and analysis. Senior Honors Thesis
Co-Principal Investigator/Supervisor: Michael Alessandri, Ph.D.
- 1/94-5/95 Research Assistant. San Jose State University. "Mentorship as a prevention of juvenile delinquency." Responsibilities included coordinating and conducting child, parent, and teacher interviews. Principal Investigator: Lisa Keating, M.S.

- 5/94-3/95 Research Assistant. San Jose State University. "Effects of orthographic neighborhood rhyming on lexical access." Chiefly responsible for preparing experimental stimuli.
Principal Investigator: Laree Huntsman, Ph.D.
- 2/94-5/94 Research Assistant. San Jose State University. "A direct test of the direct-access model:DUT does not prime TUD." Responsible for coordinating and running subjects, data collection, and data entry.
Principal Investigator: Laree Huntsman, Ph.D.
- 4/93-3/94 Research Assistant. San Jose State University. "A cluster analytic study of feminist self-identification and feminist attitudes among undergraduates." Responsibilities included the coordination and administration of a measure on feminist identity development,conducting literature reviews, data collection, and data analysis.
Principal Investigator: Sheila Bienenfeld, Ph.D.
- 4/93-3/94 Research Assistant. San Jose State University. "A qualitative study of sources of resistance to feminism." Primary responsibilities included the development and administration of a structured interview, conducting literature reviews, evaluation of data, and data analysis.
Principal Investigator: Sheila Bienenfeld, Ph.D.

Teaching and Administrative Experience

- 1/00-5/00 Intellectual and Personality Assessment Assistant Instructor (Graduate Course)
Department of Psychology, Virginia Tech
Duties included supervising 2nd year graduate students in the administration of intellectual and personality tests and providing feedback to clients, grading assessment reports and exams, and providing individual supervision.
Supervisors: George A. Clum, Ph.D., David Crews, Ph.D.
- 8/99-12/99 Personality Psychology Instructor
Department of Psychology, Virginia Tech.
Duties included preparing and delivering lectures regarding basic theories of personality, providing students with oral and written feedback on class projects, and creating, administering, and grading course examinations.
Supervisor: Jack W. Finney, Ph.D.
- 7/99-8/99 Personality Psychology Instructor – Summer Course
Department of Psychology, Virginia Tech.
Duties included preparing and delivering lectures regarding basic theories of personality, providing students with oral and written feedback on class projects, and creating, administering, and grading course examinations.
Supervisor: Jack W. Finney, Ph.D.

- 1/99-5/99 Behavior Modification Instructor
 Department of Psychology, Virginia Tech.
 Duties included preparing and delivering lectures providing students with a basic understanding of behavioral principles and methodologies and treatment methods involved in behavior change. Responsibilities also included providing written feedback to students on class projects, and developing, administering, and grading course examinations.
 Supervisor: Jack W. Finney, Ph.D.
- 8/98-12/98 Principles of Psychological Research Instructor
 Department of Psychology, Virginia Tech.
 Duties included preparing and delivering lectures providing students with an understanding of various principles and procedures involved in conducting research in the social sciences, including control, measurement, research designs, and communication in research. Responsibilities also included providing written and oral feedback to students on class projects, as well as creating, administering, and grading course examinations.
 Supervisor: Jack W. Finney, Ph.D.
- 8/96-5/98 Undergraduate Advisor.
 Department of Psychology, Virginia Tech.
 Responsibilities included advising undergraduate psychology students regarding course recommendations, preparation for graduating and post-baccalaureate careers, as well as assisting faculty members in advising students.
 Supervisor: Jack W. Finney, Ph.D.
- 8/95-5/96 Introductory Psychology Laboratory Instructor
 Department of Psychology, Virginia Tech.
 Duties included presenting material and facilitating discussions on various psychological topics in four recitation sections, proctoring exams, and developing and administering weekly quizzes and essays.
 Supervisor: Rebecca Colombus, Ph.D.

Publications

Moore, T. M., Scarpa, A., & Raine, A. (**In Press**). A meta-analysis of serotonin metabolite 5-HIAA and antisocial behavior. Aggressive Behavior.

Shenal, B. V., Rhodes, R. D., **Moore, T. M.**, Higgins, D. A., & Harrison, D. W. (2001). Quantitative electroencephalography (QEEG) facilitates neuropsychological syndrome analysis: An alternative to the nomothetic approach. Neuropsychology Review, 11(1), 31-43.

Franchina, J. J., Eisler, R. M., & **Moore, T. M.** (2001). Masculine gender role stress and intimate abuse: Effects of masculine gender relevance of dating situations and female threat on men's attributions and affective responses. Psychology of Men and Masculinity, 2(1), 34-41.

Eisler, R. M., Franchina, J. J., **Moore, T. M.**, Honeycutt, H. G., & Rhatigan, D. L. (2000). Masculine gender role stress and intimate abuse: Effects of gender relevance of the conflict situation on men's attributions and affective responses. Psychology of Men and Masculinity, 1, 30-36.

Moore, T. M., Eisler, R. M., & Franchina, J. J., (2000). Causal attributions to provocative dating situations by abusive and non-abusive males. Journal of Family Violence, 15(1), 69-80.

Moore, T. M., Shenal, B. V., Rhodes, R. D., & Harrison, D. W. (1999). Forensic neuropsychological evaluations and quantitative electroencephalography (QEEG). The Forensic Examiner, March/April, 12-15.

Paper and Poster Presentations

Moore, T. M., Franchina, J. J., & Eisler, R. M. (2000). Effects of masculine gender relevance and threatening partner behavior on men's attributions, affect, and verbal aggression. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy, New Orleans, LA.

Moore, T. M., Honeycutt, H. G., Rhatigan, D. L., Eisler, R. M., & Franchina, J. J. (1999). Effects of masculine relevance on men's responses to intimate conflict situations. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy, Toronto, Canada.

Copenhaver, M. M., **Moore, T. M.**, & Rhatigan, D. L. (1999). Testing a social-cognitive model of intimate abusiveness among substance dependent males. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy, Toronto, Canada.

Rhatigan, D. L., **Moore, T. M.**, Eisler, R. M., & Franchina, J. J. (1999). Effects of abuse history and provocative female verbal behavior on women's attributions about abusive male behavior. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy, Toronto, Canada.

Chandler, H. K., Rhatigan, D. L., **Moore, T. M.**, & Eisler, R. M. (1999). Effect of abuse history on women's behavioral responses to male threat. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy, Toronto, Canada.

Moore, T. M., Rhatigan, D. L., Cosenzo, K. A., Franchina, J. J., & Eisler, R. M. (November, 1998). Attributional and physiological responses of abusive males to intimate partner conflict. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy, Washington, DC.

Moore, T. M., Eisler, R. M., Franchina, J. J., & Burke, R. S. (May, 1998). Attributional responses of abusive males to intimate partner conflict. Poster presented at the annual meeting of the American Psychological Society, Washington, DC.

Moore, T. M., Doane, C., Sachs, B. L., Franchina, J. J., & Eisler, R. M. (April, 1998). Abusive and non-abusive college males' interpretations and blood pressure reactivity to provocative partner behavior. Poster presented at the annual meeting of the Virginia Collegiate Psychology Conference, Blacksburg, VA.

Shenal, B. V., Rhodes, R. D., **Moore, T. M.,** Higgins, D. A., & Harrison, D. W. (April, 1998). Quantitative Electroencephalography (QEEG) facilitates neuropsychological syndrome analysis: An alternative to the nomothetic approach. Paper presented at the annual meeting of the Virginia Psychological Association, Wintergreen, VA.

Moore, T. M. (April, 1995). Psychological effects of raising children with autism: A comparison of mothers of singleton and multiplex families. Paper presented at the annual meeting of the Western Psychological Association, Los Angeles, CA.

Huntsman, L. A., **Moore, T. M.,** & Skinner, J. (April, 1995). A direct test of the direct access model: DUT does not prime TUD. Poster presented at the annual meeting of the Western Psychological Association, Los Angeles, CA.

Apodaca, X., Faber, B., Jensen, S., **Moore, T. M.,** Prull, S., Raye, B., Tretyl, K., West, C., & Bienenfeld, S. (March, 1994). A cluster analytic study of feminist self Identification and feminist attitudes among undergraduates. Paper presented at the annual meeting of the Association for Women in Psychology, Oakland, CA.

Apodaca, X., Faber, B., Jensen, S., **Moore, T. M.,** Prull, S., Raye, B., Tretyl, K., West, C., & Bienenfeld, S. (March, 1994). A qualitative study of sources of resistance to feminism. Paper presented at the annual meeting of the Association for Women in Psychology, Oakland, CA.

Personal References

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