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An Experimental Analysis of Couple Aggression Using a Response Choice Paradigm

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**AN EXPERIMENTAL ANALYSIS OF COUPLE AGGRESSION USING A
RESPONSE CHOICE PARADIGM**

by

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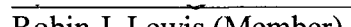
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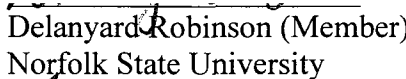
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ABSTRACT

AN EXPERIMENTAL ANALYSIS OF COUPLE AGGRESSION USING A RESPONSE CHOICE PARADIGM

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Research suggests that a majority of the violence reported by couples involves mutual, low-level acts of aggression; however, there is a dearth of research examining this “common couple violence” using a true experimental paradigm. The current study was designed to more closely approximate a naturalistic situation involving common couple violence by allowing participants to choose whether to retaliate in the face of provocation by their partner. Couples were randomly assigned to four conditions representing different patterns of provocation. Based on the assigned condition, participants received varying amounts of bad tasting juice allegedly poured for them by their partners across 5 experimental trials. Building on the response choice methodology of Zeichner, Parrott, and Frey (2003), participants had the option to respond to their partners' aggression by pouring either a neutral flavored beverage (water) or the bad juice. Of interest was the number of trials that would elapse prior to an individual's decision to retaliate (flashpoint latency) as well as the amount of bad juice poured (flashpoint intensity). Individual and relationship variables were examined as they related to a participant's decision to aggress and the intensity of the aggressive response. Flashpoint latency did not vary as a function of condition. Gender differences were not found with regard to overall aggression, although male participants aggressed earlier than

female participants. Participants in the Decreasing Provocation condition poured more juice on the flashpoint trial than those in the Increasing Provocation Condition. Partial support was obtained for the prediction that participants would respond in kind to the level of provocation received. Flashpoint latency did not vary as a function of individual or relationship variables. Increased irritability was related to increased flashpoint aggression. In addition, the greater the degree of irritability and emotional susceptibility reported by participants, the more aggression they displayed over the course of the experiment. Hypotheses regarding the relationship between trait anger and aggression were not supported. Flashpoint behavior did not vary as a function of relationship commitment or aggression levels. Implications of these and other findings, as well as methodological limitations and directions for future research are discussed.

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CHAPTER I

INTRODUCTION

The National Violence Against Women Survey (Tjaden & Thoennes, 2000a) revealed that approximately 1.5 million women and 835,000 men become victims of intimate partner violence in the United States each year. Findings indicating that 22% of women and 7% percent of men reported being physically assaulted by an intimate at some point in their lifetime highlight the pervasiveness of intimate partner abuse in the United States. Furthermore, Frieze (2005) posited that statistics regarding the prevalence of partner violence are likely to underestimate actual rates as a result of partners' reluctance to report such incidents accurately.

Studies examining the occurrence of violence in intimate relationships have produced varying results. In a national study of married couples, Straus, Gelles, and Steinmetz (1980) found that 28% of couples reported having experienced some form of violence during their marriage. One-third of the violent incidents reported by those couples represented serious assaults, such as punching, biting, or assaults with a knife or gun. Bradbury and Lawrence (1999) examined aggression in a community sample of recently married couples and reported that 48% of these dyads indicated they experienced physical aggression in their relationship.

In a study comparing the rate of physical assault in married, cohabitating, and dating couples, Stets and Straus (1989) reported that the highest rate of assault and most

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severe forms of violence occurred among cohabitating couples, with 35% of those couples reporting a physical assault in their relationships during the previous year. Stets and Henderson (1991) examined conflict tactics in a random, national sample of dating couples. They reported a 30% prevalence rate for violent acts during the previous year. Makepeace (1981) conducted one of the first studies of dating violence in college students. He found that one in five students had personally experienced at least one incident of dating violence. Subsequent studies on dating aggression amongst high school and college students have indicated prevalence rates falling between 20 and 50 percent (Arias, Samios, & O'Leary, 1987; Bernard & Bernard, 1983; Stacy, Schandel, Flannery, Conlon, & Milardo, 1994; Watson, Cascardi, Avery-Leaf, & O'Leary, 2001).

Differences in prevalence rates may be understood when examining how violence is defined in these studies, the context within which the violent acts occur, and the methodological and sampling procedures employed. The National Violence Against Women Survey defined physical assault as "behaviors that threaten, attempt, or actually inflict physical harm" (p. 5, Tjaden & Thoennes, 2000a). This definition incorporated aggressive behaviors ranging from slapping and pushing to choking and using a weapon. Johnson (2005) argued that without making distinctions between the various modes of couple aggression, statistical relationships measured in studies of intimate partner violence may create serious misconceptions. Frieze (2005) contended that many studies examining prevalence rates of intimate partner violence consider any act of physical aggression "violent." Furthermore, prevalence studies have typically failed to report data regarding the circumstances surrounding the violent acts or the interaction between male and female violence within the relationship (Frieze, 2005).

When examining the results of the intimate partner abuse prevalence studies, the data suggest that a majority of the violence reported by couples is characterized by relatively minor, low-level acts of aggression. The results from the National Violence Against Women Survey (Tjaden & Thoennes, 2000a) demonstrated that most physical assaults committed by intimates consisted of pushing, grabbing, and slapping, while fewer respondents reported that their partner had thrown something that could have hurt them, kicked or beat them, or threatened them with a weapon. Additionally, very few respondents reported that their partner had used a knife or gun against them. Similar results reported in other studies (e.g., Archer, 2000; Johnson, 2001; Makepeace, 1981; Olson, 2002; Williams & Frieze, 2005) have also suggested that forms of violence ordinarily thought of as extreme were less common than milder forms of violence.

In response to the variance in aggressive behaviors reported in the literature on intimate partner violence, Johnson (1995) created broader definitions that accounted for qualitative differences among forms of violence in marital, dating, and other romantic relationships. Johnson (2005) differentiated three major types of intimate partner violence based on the context of control within which they occur. Intimate terrorism (IT), formerly referred to as patriarchal terrorism in the literature, refers to violence employed to exert control over one's partner. This type of violence occurs in the context of a general pattern of controlling behaviors in a close relationship (Johnson & Leone, 2005). The kind of violence characterized by IT is most commonly associated with "battered" or severely abused women in intimate relationships and is often referenced by the terms domestic violence or spousal abuse (Johnson & Leone, 2005). Johnson (2005) identified violent resistance as a second type of partner violence, which is enacted in

response to intimate terrorism. Finally, he described situational couple violence (SCV) (also referred to as "common couple violence" in the literature) as violence resulting from escalating conflict in the absence of an established pattern of power and control.

Johnson and Leone (2005) emphasized that IT and SCV are not defined by the nature or frequency of violence. For example, SCV may involve recurring violence perpetrated by partners in response to an unresolved area of conflict, whereas IT may be infrequent, but create a level of fear that allows the perpetrator to exert control over his or her partner through nonviolent means (Johnson & Leone, 2005). Thus, the authors posited that the context of control within which the violence is embedded is central to the differentiation of these two types of relationship violence. The concept of IT echoes Jacobson and Gottman's (1998) distinction between "battering" and other incidences of couple violence. Similarly, they argued that battering is an attempt to "control, intimidate, and subjugate one's intimate partner through the use or the threat of physical aggressions" (p. 35). Thus, IT and SCV represent two distinct forms of intimate partner violence that involve different psychological underpinnings, couple dynamics, and consequences for the victim (Johnson & Leone, 2005).

Johnson and Leone (2005) posited that due to a failure to operationalize the differences between IT and SCV, statistical relationships presented in domestic violence literature represent a combination of different types of violence that renders them meaningless. Johnson (2005) argued that studies using general community samples are dominated by SCV, as this type of violence is more common and more likely to be reported in a random sample than is IT. Contrastingly, he contended that samples drawn from domestic violence shelters, hospitals, police records, and the courts are likely to be

biased in favor of IT, as this form of violence involves repetitive acts of controlling violence that are more likely to escalate, causing a victim to seek help from outside agencies. Graham-Kevan and Archer (2003) tested the hypothesis that forms of violence vary by sample. They examined physical aggression and controlling behavior in three different samples comprised of students, women from a domestic violence refuge, and male prisoners. Their results supported Johnson's contention that recurrent, more controlling forms of violence are more likely to be reported in agency samples.

Although many researchers have acknowledged the importance of distinguishing various forms of violence in empirical studies of partner abuse, some have contended that methodology, rather than sampling, is responsible for capturing different types of violence and obtaining varying prevalence rates (e.g., Olson, 2002). Frieze (2005) reported that prevalence rates may be impacted by how questions are phrased and the degree of rapport between participants and researchers. Frieze (1979) conducted lengthy, face-to-face, qualitative interviews with women who were identified as victims of marital violence, as well as a control group of women from a general community sample. Interestingly, she found that 33% of the women in her control group had been victims of intimate partner abuse. Commenting on her earlier research, Frieze (2005) posited that as couples developed rapport with the researchers, they became more willing to disclose personal information about their relationships. Similarly, Olson (2002) reported that couples in his community sample disclosed more severe forms of violence during the interview portion of the study than they did in previously completed self-report measures of couple violence. These findings suggest that qualitative methodological procedures may elicit reports of more severe violence in community samples. Furthermore, they call

into question the use of standardized measurement as the sole method of data collection in studies of intimate partner violence (Olson, 2002).

Gender Differences in the Occurrence of Intimate Partner Violence

Decades of struggles on the part of the feminist movement have directed society's attention to the problem of gender-based violence in the United States (Hagemann-White & Lenz, 2004). Indeed, normative expectations for intimate partner aggression are rooted in the male as perpetrator, woman as victim dichotomy. In 2001, data from the National Crime Victimization Survey indicated that approximately 85% of violent crimes committed by intimate partners were against women (Rennison, 2003). Rennison (2003) noted that in 2000, approximately 34% of all female homicides were perpetrated by an intimate partner, whereas only 4% of male homicide victims were killed by intimate partners. Despite numerous statistics indicating a preponderance of male-perpetrated intimate partner violence, studies have emerged that report comparable, and, in some cases, higher rates of female-perpetrated partner abuse. A closer examination of this research is warranted.

One of the earliest studies that pointed towards comparable rates of female-perpetrated couple violence was published by Straus et al. (1980). Data was collected using a national sample of married couples who had reported some type of relationship violence. Nearly half of those couples reported violence perpetrated by both the husband and the wife. Twenty-seven percent of the couples reported husband-only violence and 24% of the couples reported wife-only violence. Similarly, Straus and Gelles (1986) noted that within families, women and men seem to aggress at similar rates. Stets and Straus (1989) also reported comparable levels of female-only violence and male-only

violence in married couples after controlling for differences in age. However, Dobash, Dobash, Wilson, and Daly (1992) argue that methodological limitations that ignore the context of the violence and the severity of its consequences must be considered in interpreting this trend. For example, one explanation is that the prevalence of female violence may be a result of women reacting in self-defense to aggression perpetrated by their male partners (Jacobson & Gottman, 1998; Saunders, 1986). Christopher and Lloyd (2000) posit that women are more likely to sustain injuries as the result of intimate partner violence due to the greater size and strength of men. Women are also more likely to be hospitalized and require medical care after being assaulted by their partner (Jacobson & Gottman, 1998). Therefore, acts of violence performed by men against women may inflict a greater amount of pain or injury than if similar acts were perpetrated by women (Straus & Gelles, 1986). Although women may be less likely to injure their male partners in a physical dispute, they are capable of causing physical injury and their aggressive behavior may result in an escalation of the aggression (Riggs, O'Leary, & Breslin, 1990).

Archer (2000) published an influential meta-analytic review of studies reporting sex differences in intimate partner violence. Although small effect sizes were reported, the results provided support for both sides of the previously discussed debate regarding the impact of methodology and sampling procedures on prevalence rates. Archer (2000) offered several explanations for reported gender differences. Notably, he concluded that when measures assessed specific acts of violence, women were more likely than men to have engaged in physical aggression toward their partner. However, when physical consequences were considered, men were more likely to have caused injury to their

partners. Archer (2000) also reported much higher effect sizes for male-perpetrated intimate partner violence in agency samples than in community samples; violence in community samples appeared to be more gender symmetric. This finding may be interpreted within Johnson's (2001) distinction between two forms of intimate partner violence, IT and SCV, as he presented data suggesting that IT is perpetrated predominately by men, while SCV appears to be perpetrated at roughly the same rates by men and women.

In 2009, Hamel proposed a “gender-inclusive” model of intimate partner violence, which de-emphasized distinctions between victims and perpetrators and focused on the systemic nature of intimate partner violence. In a critique of the existing literature, he contended that biased sampling in previous research resulted in a failure to report similar levels of dominance and control in males and females. Additionally, while positing that intimate partner violence is a human and relational problem, as opposed to a gender problem, Hamel (2009) highlighted the connection between characterological traits and attachment styles and the perpetration of intimate partner abuse.

Taken together, the literature addressing sex differences in intimate partner violence suggests that although men seem to engage in more severe forms of violence, many couples seem to participate in mutual, often low-level violence against each other (Frieze, 2005). However, methodological and sampling differences in much of the research have led some to argue that the distinction between IT and SCV is overly simplistic (Hamel, 2009; Olson, 2002; Williams & Frieze, 2005). For example, Olson (2002), through his use of both quantitative data and qualitative interviewing techniques, identified relationships that were characterized by high levels of violence, but lacked the

power imbalance of Johnson's description of IT. Olson (2002) posited that partners in those relationships engaged in reciprocal violence with the purpose of maintaining or re-establishing individual control, as opposed to control over their partner. In contrast, "aggressive" couples engaged in low-level, often mutual aggression. However, these couples appeared to be more egalitarian in their relationships and expressed lower tolerance for aggressive behavior and healthier communication patterns (Olson, 2002). This study underscored the complexity of variables at play, including reciprocity, power, and control, in understanding various types of intimate partner aggression.

In concluding the discussion on gender differences, it is important to note that the prevalence rates for intimate partner violence in homosexual couples have been reported as comparable, and in some cases even greater than those reported for heterosexual dyads (Brand & Kidd, 1986; Tjaden & Thoennes, 2000b; Turell, 2000). Although this growing area of research is beyond the scope of this study, Olson (2002) noted that "patriarchal social traditions do not capture the motives for control" in same-sex relationships (p. 13). Interestingly, Archer (2000) predicted that even in heterosexual dyads, the norm of disapproval of male to female physical aggression will have a greater impact on the occurrence of intimate partner abuse than will traditional patriarchal values. Therefore, he concluded, patterns of aggression observed in couples may be more a product of individual and relationship variables and less influenced by patriarchal power.

Individual Risk Factors for Partner Aggression

Research in the area of intimate partner violence has traditionally emphasized sociodemographic and personality characteristics that might predict who is likely to engage in couple violence (Christopher & Lloyd, 2000). Although intimate partner abuse

research has focused increasingly on interpersonal variables, individual variables may predict couple aggression through their interaction with each other and with interpersonal variables. Several individual variables that have received increased attention in the literature, including family of origin violence, anger, and emotional reactivity, will be discussed. Finally, typologies of male batterers that have been proposed in the literature will be reviewed.

Intergenerational transmission of violence. One of the most widely researched correlates of intimate partner abuse is exposure to violence in one's family of origin. The literature suggests that children who either experience abuse firsthand or witness parental abuse are at greater risk of engaging in violent behavior in their families as adults (Hines & Saudino, 2002). Bernard and Bernard (1983) found that college students were more than twice as likely to be abusive in their romantic relationships if they had either experienced or witnessed abuse in their families of origin. Furthermore, they reported that these individuals tended to employ the same forms of abuse that occurred in their families as children.

The theory of intergenerational transmission of violence is rooted in the social learning theory of aggression. Children who observe violence in their families may learn to view violence in intimate relationships as an appropriate way to express anger and respond to conflict, thus precluding them from learning prosocial alternatives to solving family problems (Eron, 1997; Hines & Saudino, 2002; Kalmuss, 1984). Gelles (1997) contended that children exposed to familial violence not only observe aggressive techniques, but also learn the explanations adults offer to justify their violent behavior. If children believe that their family member's use of violence was justified, they will be

more likely to adopt similar aggressive behaviors and will learn that it is acceptable to retaliate with violence if they feel they have been wronged (Hines & Saudino, 2002). In support of social learning theory, Kinsfogel (2001) reported that an attitude of acceptance for relationship aggression predicted dating aggression in males who had experienced family of origin violence.

Although the intergenerational transmission of violence has been widely accepted as an explanation for intimate partner violence, one must consider that most children who experience family violence will not become violent adults (Widom, 1989). Several studies have suggested that the intergenerational theory may be limited in its ability to predict partner aggression and that the pathway from experiencing family of origin violence to perpetrating future intimate partner violence may be mediated by additional factors. In a multivariate analysis of adolescent dating violence, Kinsfogel (2001) found that an aggressive personality in males was related to family of origin abuse and trait anger. Furthermore, she reported that aggressive males were more likely to engage in partner violence in the presence of higher levels of relationship conflict.

The intergenerational transmission theory has also failed to consistently explain female-perpetrated partner violence. Arias (1984, as cited in Riggs et al., 1990) found that personality variables, but not family of origin conflict, contributed to the prediction of female dating violence. Additionally, Kinsfogel (2001) reported that a history of family violence appeared to be three times more important in predicting male dating aggression than female dating aggression. She found that dating aggression in females was predicted by emotional mediators, including trait anger, and situational factors, including level of commitment, relationship conflict, and having an aggressive partner.

Anger, irritability, and emotional susceptibility. Spielberger, Jacobs, Russell, and Crane (1983) defined anger as an "emotional state that consists of feelings that vary in intensity, from mild irritation or annoyance to fury and rage" (p. 162). As reviewed by Frieze (2005), chronically high anger has been cited in the literature as a risk factor for male-perpetrated marital violence. Schumacher, Feldbau-Kohn, Slep, and Heyman (2001) conducted a meta-analytic review of risk factors of male-to-female partner abuse. They found that anger was associated with male physical aggression in all studies that examined this personality construct. Barbour, Eckhardt, Davison, and Kassinove (1998) examined the experience and expression of anger in a community sample of violent and nonviolent men. Their results demonstrated that violent husbands experienced more frequent feelings of anger and had a greater tendency to act on those feelings in an aggressive manner. The findings also suggested that when compared with nonviolent men, men who used violence in their marriages did not attempt to use strategies that would serve to modulate or decrease angry feelings.

Beasley and Stoltenberg (1992) administered the State-Trait Anger Scale (Spielberger et al., 1983) to a clinical sample of men who were either abusive or non-abusive in their romantic relationships. State-Anger refers to the current emotional state of an individual, or the degree to which he or she may be experiencing subjective feelings of anger, such as annoyance or irritation, whereas Trait-Anger is defined as the extent to which individuals experience a more pervasive feeling of anger over time (Spielberger et al., 1983). Beasley and Stoltenberg (1992) reported that abusive spouses scored higher than did non-abusers on scales measuring both State- and Trait-Anger. The authors concluded that although abusers may have experienced higher State-Anger scores as a

result of the involuntary nature of their treatment, elevated Trait-Anger scores suggested that those men possessed greater levels of tension, irritability, and rage that likely reflected a stable personality trait. They also contended that these results may indicate that abusive men perceive a wide range of situations as anger-provoking. Similarly, Hammock and O'Hearn (2002) noted that the characteristic of trait anger is likely associated with a heightened sense of threat. They posited that individuals high in trait anger are easily offended and tend to perceive threat in their environments. Hammock and O'Hearn (2002) reported a significant relationship between a heightened sense of threat and the use of both physical and psychological aggression in relationships.

Hammock and O'Hearn (2002) suggested that individuals who are highly emotionally reactive may have a low threshold for anxiety. In turn, they may experience heightened physiological reactivity in threatening situations. Caprara, Renzi, Alcini, D'Imperio, and Travaglia (1983) examined the role of two similar personality constructs with respect to aggressive behavior. They defined irritability as "a stable tendency of the individual to react offensively to minimal provocation," whereas emotional susceptibility was described as "a stable tendency of the individual to experience states and feelings of inadequacy or distress" (p. 346, Caprara et al., 1983). The authors posited that individuals high in irritability may be quick to anger and demonstrate more offensive behaviors in the face of provocation. On the other hand, they reported that individuals high in emotional susceptibility may experience feelings of vulnerability and display more defensive behaviors when threat is perceived. Caprara et al. (1983) noted that both high irritability and high emotional susceptibility would result in less tolerance of provocation. Several experimental studies using non-couple participants have indicated

that individuals who score high on measures of these personality characteristics responded to provocation with higher levels of aggressive behavior than their low-scoring counterparts (Caprara, 1982; Caprara et al., 1983). However, the distinct constructs of irritability and emotional susceptibility have not been examined in relation to perpetration of intimate partner aggression. Hammock and O'Hearn (2002) posited that emotionally reactive individuals would likely use whatever means necessary to reduce threat in their environment in an attempt to minimize emotional discomfort. They suggested that in intimate relationships, this desire to control one's environment may manifest as physical or psychological aggression.

Typologies of abusive men. Acknowledging the heterogeneity of samples of abusive men, several researchers have attempted to identify various subtypes that account for differences among violent men. In a review of existing marital violence literature, Holtzworth-Munroe and Stuart (1994) identified three major dimensions along which male batterers may be distinguished: (a) the severity of violence employed, including the frequency and nature of the violent acts, (b) the generality of violence (i.e., violence restricted to the family versus violence displayed in other domains), and (c) the psychopathology or personality disorder of the abuser. Given these dimensions, the authors identified three subtypes of men who use violence against their wives. The first subtype, *family-only* batterers, includes men who generally do not have histories of violence or criminal activity outside of the home, though they do engage in violent acts against family members. The authors noted that men in this group likely use less severe forms of violence in their marriages when compared to men in the other subtypes (Holtzworth-Munroe & Stuart, 1994). Additionally, although these men may exhibit

dependency in their marriages, they do not tend to show evidence of serious pathology (Holtzworth-Munroe & Stuart, 1994). Holtzworth-Munroe and Stuart (1994) contended that family-only batterers could represent up to 50% of husbands who abuse their wives if researchers utilize community samples, in addition to recruiting men from treatment programs.

The second proposed subgroup of violent husbands is *dysphoric/borderline* batterers. These men employ moderate to severe forms of violence, which is generally restricted to their wives and may take the form of psychological and sexual abuse (Holtzworth-Munroe & Stuart, 1994). When compared to other types of batterers, these men would likely experience a greater degree of psychological distress, which may include characteristics of borderline or schizoid personality disorder, and may be viewed as emotionally unstable (Holtzworth-Munroe & Stuart, 1994). Men in this group may also exhibit substance abuse problems and have difficulty controlling their anger with their wives (Holtzworth-Munroe, Meehan, Herron, & Stuart, 1999). Finally, members of the third subtype of violent husbands, *generally violent/antisocial* batterers, were proposed to exhibit moderate to severe marital violence and demonstrate the most extensive history of criminal behavior and violent acts committed outside of the home. Men in this group are likely to abuse drugs or alcohol and most likely to meet criteria for antisocial personality disorder (Holtzworth-Munroe & Stuart, 1994).

Holtzworth-Munroe et al. (1999) examined the validity of Holtzworth-Munroe and Stuart's (1994) batterer typology. The authors recruited couples from both agency and community samples in a large metropolitan area and its surrounding suburbs. Men were assigned to either a *husband violent* group or a *nonviolent comparison* group based

on their responses on the Conflict Tactics Scale (Straus, 1979). The authors reported that three groups of violent men emerged corresponding to the three classifications of male batterers discussed above. These groups differed as predicted on the three descriptive dimensions. Additionally, a fourth "low-level antisocial" group was identified that was comprised of men who demonstrated intermediate levels of violence and psychopathology, falling in between family-only and generally violent/antisocial batterers on a continuum of violence severity and antisociality.

Holtzworth-Munroe et al. (1999) also compared the three batterer subtypes on measures of distal and proximal correlates of partner abuse and reported the following results. Generally violent/antisocial men reported the greatest levels of family-of-origin violence, criminal behavior, and substance abuse problems. These men were the most impulsive and reported the most accepting attitudes toward violence (Holtzworth-Munroe et al., 1999). Men in this group, as well as in the dysphoric/borderline group, displayed the highest levels of hostile attitudes towards women and a tendency to make negative attributions regarding their wives' behavior. Dysphoric husbands also reported the highest levels of childhood sexual trauma and demonstrated attachment-related problems. They scored the highest on measures of jealousy, dependency, and rejection sensitivity. Family-only batterers scored the lowest on all measures of distal and proximal correlates of partner violence. The authors posited that violence exhibited by men in this group may be a product of both marital distress and external stressors, which in combination with anger and poor relationship skills, might lead to physical aggression during escalating relationship conflicts (Holtzworth-Munroe et al., 1999). They noted that the

relative absence of psychopathology and the presence of positive attitudes toward women amongst family-only abusers would likely prevent their aggression from escalating.

Jacobson and Gottman (1998) developed a typology of male batterers based on their previous research examining the relationships between physiological correlates, aggression, and marital conflict. Gottman et al. (1995) examined this relationship amongst couples engaging in husband-to-wife violence. In a laboratory setting, couples were asked to discuss identified areas of conflict while physiological measures were recorded. The results indicated that 20% of the abusive men displayed a decrease in heart rate as their verbal aggression escalated (Gottman et al., 1995). This group, identified as Type I batterers, or *cobras*, were more angry, belligerent, and contemptuous at the start of the dispute, and displayed decreasing levels of emotional aggression as the interaction unfolded. However, physiological measures indicated that these men were calmer than when previously instructed to relax and close their eyes (Jacobson & Gottman, 1998). Jacobson and Gottman (1998) posited that the men's lowered heart rate may have been in the service of focusing attention on manipulating and instilling fear in one's wife, similar to a cobra "who becomes quite still and focused just before striking its victim" (p. 29). Cobras were also more severely violent towards their wives, showed evidence of antisocial traits, and were more likely to have been violent with people outside of their marriage (Gottman et al., 1995).

The second type of batterers identified by Jacobson and Gottman (1998) were labeled Type II batterers, or *pit bulls*. Unlike cobras, these men demonstrated increasing heart rates and levels of aggression over the course of a dispute. In contrast with cobras, pit bulls were less likely to demonstrate antisocial personal characteristics (Gottman et

al., 1995). Instead, they were more emotionally dependent, clingy, jealous, and insecure in their relationships. Jacobson and Gottman (1998) reported that a fear of abandonment by their partners, which may border on paranoia, motivates pit bulls to seek out control in their relationships and may produce jealous rages. Contrastingly, cobras are motivated to dominate their wives by a sense of entitlement and a desire for immediate gratification (Jacobson & Gottman, 1998).

Relationship Dynamics

Margolin, John, and Gleberman (1988) underscored the importance of examining interactional variables and communication factors in understanding the dynamics of spousal abuse. Researchers using laboratory observations of couple interactions have sought to understand the interpersonal dynamics that may be unique to violent, as opposed to nonviolent, couples. Margolin et al. (1988) observed the affective responses of physically abusive, verbally abusive, withdrawing, and nonviolent couples during a 10-minute conflictual discussion. Physically abusive men demonstrated higher levels of both overt and subtle violence cues, using higher levels of threat, blame, signs of dismissal, and negative physical contact (Margolin et al., 1988). The authors contrasted these blatant displays of anger and irritation with defensive negative behaviors, such as withdrawing, avoiding eye contact, and head hanging, which were exhibited by both physically abusive and non-abusive men. Furthermore, the authors noted that the patterns of negative affect displayed by physically abusive men were not constructive approaches to managing conflict and could increase the likelihood of more severe forms of aggression (Margolin et al., 1988).

In the Margolin et al. (1988) study, nonviolent husbands displayed more positive affect, such as smiling and positive body language, and fewer offensive behaviors than aggressive husbands. Other research has demonstrated that aggressive partners tend to respond aversively to conflict and are less likely to engage in behaviors that might facilitate a resolution (Cordova, Jacobson, Gottman, Rushe, & Cox, 1993). Burman, Margolin, and John (1993) reported that although nonviolent couples may initially respond to their partner's hostile behavior with reciprocal negative behaviors, they are able to abandon these negative strategies for more constructive ones more quickly than violent couples. The authors posited that anger plays an important role in explaining the inability of violent couples to deescalate negative behavior. In their study, violent couples demonstrated anger-reactivity during conflicts, which once activated, decreased the likelihood that positive, neutral, or nonhostile negative behaviors would be displayed.

Research has shown that violent couples are more likely to engage in reciprocal negative behavior than their nonviolent counterparts (Burman et al., 1993; Cordova et al., 1993; Margolin et al., 1988). Burman et al. (1993) reported that for both husbands and wives, angry and contemptuous behavior by one spouse is likely to elicit similar behavior by the other spouse. Similarly, Cordova et al. (1993) reported that among violent couples in their study, wives were just as likely as their husbands to persistently reciprocate negative behavior during conflicts, even when these wives reported histories of significant physical abuse. These results are contrary to research (Jacobson & Gottman, 1998) that has suggested that battered women attempt to initiate a "withdrawal ritual" in order to placate their violent husbands and neutralize conflict. In a somewhat similar pattern, wives who reciprocated aggression in the Margolin et al. (1988) study tended to

display more negative behavior in the middle of the conflict than women in nonviolent relationships, with evidence of de-escalation toward the end of the dispute. It is important to note, however, that the conflicts observed in the above studies occurred during the course of discussions that couples were instructed to engage in based on their self-reports of personally conflictual topics. Although partners may have "held back" aggressive responses in the presence of observers, it may also be likely that the observers afforded the wives a sense of protection during the conflict (Burman et al., 1993). These discrepant results underscore the need to conduct research using a more naturalistic paradigm when examining interactional variables that contribute to patterns of partner violence.

One variable that has been shown to be related to spousal abuse is the presence of marital distress. In the literature, the term marital distress is often associated with low levels of marital satisfaction and has frequently been assessed using the Short Marital Adjustment Test (Locke & Wallace, 1959). Additionally, "distressed couples" are often recruited from marital therapy treatment centers. These couples may be seeking marital counseling for various reasons, such as general dissatisfaction with their relationship, maladaptive demand-withdrawal patterns of interaction, or other relationship difficulties, and they may or may not experience marital violence (Holtzworth-Munroe, Smutzler, & Stuart, 1998). Holtzworth-Munroe et al. (1998) reported that violent-distressed couples were most likely to display negative behaviors and high levels of conflict, whereas violent-nondistressed couples tended to exhibit a more mixed presentation of conflict strategies, including the use of both constructive and destructive behavior. In an attempt to factor out the effects of marital distress in the study of couple violence, Cordova et al.

(1993) matched violent-distressed and nonviolent-distressed couples on their reported level of marital satisfaction. They found that increased aggressive behavior in violent-distressed couples was not related to levels of marital distress. Therefore, some couples may report the presence of violence in spite of high levels of marital satisfaction (Christopher & Lloyd, 2000).

In a review of the literature on marital distress, Christopher and Lloyd (2000) noted that marital distress may be a consequence, rather than a cause, of couple violence. They also posited that marital distress may lead to violence through interaction with other variables, such as hostility. Holtzworth-Munroe et al. (1998) suggested that violence in distressed and nondistressed couples may be qualitatively different "in ways related to marital satisfaction," as violent-nondistressed couples in their study engaged in less frequent violence than did couples in the violent-distressed group (p. 740). They hypothesized that common couple violence, or situational couple violence as discussed previously, is less likely to be associated with marital distress than is intimate terrorism. As discussed earlier in this review, intimate terrorism occurs in the context of a pattern of controlling behaviors over the course of one's relationship. This violence is similar to that displayed by the cobras in Jacobson and Gottman's (1998) typology of batterers. Cobras seek to dominate and control their wives by any means necessary: they display an intimidating interactional style that produces fear and sadness in their wives that tends to suppress their wives' expressions of anger (Jacobson & Gottman, 1998).

Gelles (1997) reported that homes within which the decision-making power is held exclusively by either the husband or the wife have the highest rates of violence. In a study of couples in a community sample, Olson (2002) investigated the profile of

common couple violence, including the way in which such couples navigate issues of power and control. The author reported that aggression was more likely to be bidirectional in couples where a balance of power and control existed between the partners. In essence, these couples displayed a symmetrical escalation of aggression during conflicts with the goal of reestablishing individual control (Olson, 2002). On the contrary, aggression was less likely to be reciprocated in relationships characterized by power imbalance. Olson (2002) concluded that partners who lack power may be at greater risk of being abused than individuals in egalitarian relationships.

Accommodation Processes in Intimate Relationships

Rusbult and Verette (1991) reported that the ability to diffuse cycles of negative interaction is an essential component of effective couple functioning. Based on research by Hirschman (1970), Rusbult and Zembrodt (1983) identified four categories that characterized responses to dissatisfaction in close relationships: exit, voice, loyalty, and neglect. These categories differ along the dimensions of constructiveness/destructiveness and activity/passivity. For example, exit responses are destructive and active and might involve separating from one's partner or abusing one's partner (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Discussing a problem or seeking help from a therapist are types of voice responses, which represent constructive, active strategies for responding to dissatisfaction (Rusbult et al., 1991). Finally, loyalty and neglect represent more passive responses, such as supporting one's partner in the face of criticism (constructive) or avoiding discussing problems (destructive, Rusbult et al., 1991). Rusbult, Johnson, and Morrow (1986) examined the relationship between the nature of partners' responses to dissatisfaction and the presence or absence of distress in dating

relationships. They found that increased couple distress was related to the degree that participants used destructive responses and failed to respond constructively when their partners utilized destructive problem-solving responses. Interestingly, the use of constructive responses was only weakly related to couple functioning (Rusbult et al., 1986). Rusbult et al. (1991) posited that in order to maintain relationship health, avoiding destructive behaviors may be more important than attempting to maximize constructive responses.

Rusbult and her colleagues have attempted to understand what makes individuals more willing to inhibit retaliatory impulses and respond constructively to their partners' negative behaviors. *Accommodation* refers to "an individual's willingness, when a partner has engaged in a potentially destructive behavior, to (a) inhibit tendencies to react destructively in turn and (b) instead engage in constructive reactions" (Rusbult et al., 1991, p. 53). When individuals engage in "pro-relationship transformation of motivation," they are more likely to accommodate to their partner's negative behavior (Rusbult & Verette, 1991). This transformation process involves a shift in motivation from the pursuit of one's own self-interests to an alternative purpose (Rusbult, Olsen, Davis, & Hannon, 2001). In close relationships, willingness to accommodate will increase when one's motivation shifts toward pro-relationship behaviors, such as considering the needs of one's partner. In other words, individuals will seek to obtain good outcomes for both themselves and for their partners, even if it requires them to sacrifice their own needs (Rusbult et al., 1991).

Several factors have been proposed as possible determinants of one's willingness to accommodate. Drawing on interdependence theory (Kelley & Thibaut, 1978), Rusbult

(1980) proposed the Investment Model of relationship commitment. Interdependence theory proposes that individuals are motivated to maximize rewards and minimize costs in a given situation. The outcome value of a relationship is a function of the estimated value of and subjective importance of both positive (reward) and negative (cost) attributes available in that relationship. Rusbult (1980) suggested that potentially important attributes might include intelligence, sexual satisfaction, and similarity of attitudes. The attractiveness of one's relationship and level of satisfaction is evaluated by comparing one's own relationship outcome to expectations of relationship value based on the quality of one's previous relationships and the relationships of similar others (Rusbult, 1980). Relationship satisfaction will likely be high when one has love and respect for one's partner and overall positive feelings about the relationship (Rusbult & Verette, 1991).

Whereas attractiveness and satisfaction level refer to the positive affect associated with a relationship, Rusbult (1980) proposed that relationship commitment is related to the probability that one will leave his or her relationship. Rusbult et al. (2001) posited that commitment reflects a long-term orientation toward one's relationship as well as a subjective feeling of attachment and intent to continue the relationship. Commitment is a function of the outcome value of one's relationship, the quality of the best available alternative to the relationship, and the magnitude of one's investment in the relationship. For example, commitment would increase when: (a) a relationship becomes more valuable (more rewards, fewer costs), (b) a partner has invested a great deal of resources into his or her relationship that would be lost if the relationship ended, and (c) an individual's relationship alternatives, such as an alternative partner or the prospect of

being uninvolved, were deemed poor (Rusbult & Verette, 1991). Thus, the Investment Model proposes that commitment level will increase as relationship satisfaction increases, the quality of alternatives decrease, and one's investment level increases (Rusbult, 1980).

The Investment Model discussed above, including its predictive power as a determinant of why individuals stay in relationships, has been consistently supported in the literature (e.g., Rusbult, 1983; Rusbult et al., 1986; Rusbult et al., 1991; Rusbult & Martz, 1995). For example, Rusbult and Martz (1995) examined factors that contribute to the decision to remain in an abusive relationship. They reported that battered women who sought refuge from their partners in a shelter were more likely to return to their partners to the degree that they had poor quality relationship alternatives and a greater degree of relationship investment. Additionally, the decision to return to their battering partners, as well as the time within which this decision was made, was strongly related to commitment levels.

In a series of studies, Rusbult et al. (1991) investigated whether the Investment Model may also predict a partner's willingness to accommodate, or react constructively to their partner's destructive behavior. Participants in these studies either self-reported their tendencies toward accommodation through completing surveys, or they were asked to read a vignette and assume the role of a protagonist who was treated inconsiderately by a stranger, acquaintance, dating partner, or serious intimate partner. The authors reported that, in general, accommodation appears to involve some social cost and is more likely to occur in more interdependent relationships. They found support for the Investment Model, reporting that individuals were more likely to accommodate to the degree that

they were more satisfied, subjectively estimated their alternatives to be poor, and had more invested in their relationships. The authors noted that willingness to accommodate was primarily mediated by commitment level. They posited that commitment represents a central component in understanding relationship endurance and that concern for the future of one's relationship and the desire for enhanced relationship stability are critical constructs involved in the motivation to accommodate.

Rusbult et al. (1991) also hypothesized that partners in non-distressed relationships would be more likely to accommodate than partners in distressed relationships. They tested this hypothesis using several procedures, including self-report measures of relationship distress, an interaction task in which couples were instructed to re-create a disagreement, and participation in matrix games (e.g., Prisoner's Dilemma) in which points were earned based on the combined choices of each partner. The matrix games required participants to make either a constructive choice, which would benefit both partners, or a destructive choice, which would either provide a disproportionate outcome for each partner (i.e., earning high outcomes while one's partner earns low points) or low outcomes for both partners. Participants completed these games in separate rooms and were provided false information about their partners' choices. On some trials, participants were informed that their partners made destructive choices before they made their own choice. On other trials, participants believed they made the first selection, and they were informed that their partners had responded in kind. Rusbult and her colleagues measured "reactive accommodation," or how frequently participants choose a response that benefited their partner at some personal cost when their partner chose first and chose destructively (p. 71). They also measured "initiative

accommodation,” which they identified as a participant’s willingness to begin a trial with a constructive response when his or her partner had reacted destructively at the start of the previous trial (p. 71).

Rusbult et al. (1991) reported several findings. They found that willingness to accommodate, as measured by self-reports, was reliably related to observed accommodative behaviors. Additionally, couples who mutually engaged in high levels of destructive responses reported greater couple distress. A significant interaction indicated that "relationships were most distressed when partners mutually exhibited strong joint tendencies toward destructive reactions" (Rusbult et al., 1991, p. 74). Finally, they noted a descriptive trend that indicated men's willingness to accommodate may impact couple functioning more than that of their female partners. This series of studies represents the only known experimental laboratory analysis of accommodative behavior in couples. Furthermore, although these studies examined partners' tendency to make decisions that could potentially deprive their partner of "points," these points had no actual value, which calls into question the generalizability of this measure of accommodation. However, these results, along with previous research documenting the role of commitment in remaining in abusive relationships, suggest that individuals may demonstrate accommodative responses even in the face of their partner's aggressive behavior. Thus, laboratory research is warranted to examine the utility of the Investment Model in predicting one's willingness to accommodate in response to provocation by one's partner.

Laboratory Studies of Aggression

As discussed previously, the use of self-report as the sole method of data collection in studies of couple aggression may produce misleading results regarding

prevalence rates, gender comparisons, and forms of aggression. Victims of abuse may be hesitant to disclose such personal information. Additionally, objective measures of relationship behaviors may fail to elicit information related to the context and course of the aggression, such as whether an aggressive act was provoked or if a dispute involved mutual aggression (Imbraguglio, 2005). Cordova et al. (1993) noted a scarcity of research that systematically examines patterns of physically aggressive couples. Moreover, laboratory studies of couple interactions have typically utilized procedures in which couples were instructed to predict how they would respond to hypothetical aggressive behaviors, reenact prior disputes, discuss a problematic topic, or engage in activities such as the Prisoner's Dilemma game (e.g., Jacobson & Gottman, 1998; Margolin et al., 1988; Rusbult et al., 1991), which are limited in their generalizability to genuine incidences of intimate partner aggression.

In a laboratory study examining provoked aggression in dating couples, Imbraguglio (2005) validated a paradigm that operationalized aggression as the amount of a bad tasting juice poured for one's partner. A cover story presented to participants indicated the purpose of the study was to examine the influence of taste on visual perception. Dating couples were instructed to allot an amount of bad tasting juice for their partner to drink prior to completing a visual task. Couples were randomly assigned to four conditions that paralleled patterns of aggressive responding couples may experience during a disagreement: low provocation, increasing provocation, decreasing provocation, and high provocation. Imbraguglio found that partners responded in kind to the level of aggressive behavior they received regardless of the pattern of aggression. In addition, higher levels of initial, unprovoked aggression were positively correlated with

past aggressive behavior and the use of dominating conflict management tactics (Imbraguglio, 2005). Interestingly, men and women displayed similar levels of aggressive behavior.

Experimental aggression research with non-couple participants has traditionally involved delivering and receiving electric shocks as a measure of aggression. One of the most well-known procedures for studying physical aggression was developed by Buss (1961) and has been utilized in hundreds of laboratory studies (Baron & Richardson, 1994). The Buss procedure involves a teacher-learner paradigm presented under the guise that the researchers are examining the effects of punishment on learning. A participant is informed that he or she will act as the teacher and present stimulus materials to another participant, actually a confederate (e.g., Bernstein, Richardson, & Hammock, 1987). If the learner responds incorrectly, the participant is told to administer an electric shock as a form of punishment. The variables of interest in the Buss paradigm are the intensity and duration of the shock chosen (Bernstein et al., 1987). Bernstein et al. (1987) noted that an advantage of using this paradigm is the fact that no electric shocks are actually administered. However, this procedure is limited in that there is no opportunity for retaliation by the "learner." Additionally, the participant may deliver shocks, not in an effort to harm the other participant, but rather to facilitate his or her learning so as to avoid future mistakes (Baron & Richardson, 1994).

The Taylor paradigm (1967) eliminated the teacher-learner method and instead incorporated a reaction time task. During this procedure, a participant is instructed to choose an intensity of shock that will be administered to his or her opponent should the opponent produce a slower reaction time (Baron & Richardson, 1994). The participant is

also informed that he or she will receive a shock if he or she loses a trial. The experimenter manipulates the wins and losses, as well as the intensity of the shock delivered. When employing the Taylor paradigm, the first trial represents a measure of unprovoked aggression, as the participant chooses a shock intensity for his or her alleged opponent prior to having received any shocks (Bernstein et al., 1987). Although the Taylor paradigm more closely resembles a natural situation in which individuals may be subjected to retaliatory aggression in response to their own aggressive behavior, critics have suggested that participants' behaviors may be viewed as competitive, rather than aggressive (Baron & Richardson, 1994). Furthermore, painful shocks are administered during this procedure, which raises ethical considerations regarding the treatment of human subjects. Nevertheless, Bernstein et al. (1987) reported some evidence for the convergent and discriminant validity of the Taylor reaction-time paradigm.

Tedeschi and Quigley (1996) contended that aggression paradigms like the ones developed by Buss and Taylor are limited in that they do not assess a participant's intent or motivation to aggress. In other words, participants are instructed to deliver electric shocks and are not given alternative options for responding to provocation (Tedeschi & Quigley, 1996). More recently, Zeichner, Frey, Parrott, and Butryn (1999) responded to this concern by developing a procedure that allowed participants to choose whether to respond aggressively to provocation during a competitive reaction-time task utilizing electric shocks as a measure of aggression. Participants were given the option to deliver shocks to a same-sex confederate following trials they won and trials they lost. However, participants were also told that they could refrain from delivering any shocks. The authors measured each participant's aggression "flashpoint," which represented how

many trials elapsed before a participant delivered an initial shock, or, in other words, how much aggression a participant would endure before retaliating. Additionally, Zeichner et al. measured the intensity and duration of the first shock administered as well as the mean frequency, intensity, and duration of shocks used across trials. Their results indicated that 90% of men "flashed" (i.e., delivered any shocks) compared to only 57% of women who did. Analyses also revealed that men consistently responded with higher levels of aggression than women. The authors noted an interesting finding: individuals who responded with a greater frequency of shocks across trials also displayed higher intensity and longer duration shocks on the flashpoint trial. This finding suggests that, when provoked, aggressive individuals may display intense, prolonged aggressive behavior upon reaching the point when they are no longer willing to refrain from retaliation (Zeichner et al., 1999).

A subsequent study of flashpoint aggression (Zeichner, Frey, & Parrot, 2003) sought to identify specific attributes that might contribute to flashpoint behavior. Zeichner et al. (2003) measured trait aggression and irritability of participants in a response-choice aggression paradigm similar to the one described above. Results indicated that participants who exhibited a longer delay of aggressive responding displayed lower levels of shock intensity and duration upon initiating this behavior. Zeichner et al. (2003) also reported that longer delays in aggressive responding were related to lower trait aggression and irritability. Participants who reported a high degree of trait anger delivered shocks at higher frequencies and displayed higher flashpoint duration. Interestingly, regardless of response latency, flashpoint intensity and duration was positively correlated with subsequent aggression. This finding suggests that

individuals who initially aggress at high levels sustain this behavior for the duration of the aggression interaction (Zeichner et al., 2003). In a similar study by the same authors (Zeichner, Parrott, & Frey, 2003), men exhibited more frequent and intense aggression than did women. In contrast, women initiated aggression at lower levels and waited longer before deciding to aggress. However, women in this study steadily increased their level of aggression following flashpoint, whereas men tended to alternate aggressive and non-aggressive behaviors. The authors suggested that the women in their study may have been more affected by social sanction than men, thus delaying their aggressive responding. They also considered the possibility that men's occasional non-aggressive responses may have represented an attempt to probe for a truce. Additional research using a response-choice paradigm is needed to explore the factors that contribute to the decision to respond aggressively in the face of provocation.

The Current Study

Although it has been proposed that milder forms of couple aggression may be more common than recurrent, controlling acts of intimate partner abuse, few laboratory studies have examined the dynamics of common couple violence. In an attempt to better understand the variables involved in the occurrence of this more prevalent form of partner aggression, couples in the current study were directly observed in a laboratory setting while exposed to experimentally manipulated levels of provocation. Manipulation of the pattern of aggression allowed for a more thorough understanding of the dynamics at play during an aggressive exchange amongst partners. For example, how did the level of provocation (i.e., high- versus low-level aggression) or the pattern with which aggression is delivered (i.e., escalating aggressive behavior versus gradually withdrawing

aggressive behavior) affect one's response to provocation? Did participants tend to respond in kind to their partners' levels of provocation? Might a consistently high level of aggression have provoked a withdrawal ritual from one's partner? Information regarding the context and pattern of aggression is difficult to elicit from objective, self-report measures of past aggressive behavior. However, by manipulating these patterns of aggression in a laboratory setting, the current study allowed partners' responses to varying levels of provocation to be observed directly.

The current study was the first known laboratory investigation of couple aggression to measure flashpoint aggression and use the response-choice paradigm employed by Zeichner and his colleagues (1999). Drawing on the theory of accommodation processes (Rusbult et al., 1991), the current paradigm provided an opportunity to examine both individual and relationship variables that may contribute to a partner's willingness to delay an aggressive response, refrain from retaliation, or even make attempts at reconciliation. Although only one known series of laboratory studies has examined couples' willingness to accommodate during conflictual interactions (Rusbult et al., 1991), participants in those studies engaged in reenactments of conflictual interactions, participated in matrix games, and engaged in a moral dilemma task, which required partners to come to a consensus regarding a moral dilemma presented in a vignette. Although such methods are useful with regard to their ability to examine accommodation processes, they are limited in their ability to replicate the fundamental nature of an *aggressive* conflict. In contrast, the current paradigm more closely approximated a realistic, aggressive dispute during which participants were the recipients

of physically aversive provocation from their partners and had the option to respond either aggressively or non-aggressively in response to their partners' provocation.

Building on the methodologies of Zeichner et al. (1999) and Imbraguglio (2005), participants in the current study were able to choose between allotting water (accommodative response) or bad juice (aggressive response) for their romantic partner in response to provocation. Of interest was the number of trials that occurred before participants chose to pour the bad juice (flashpoint latency), as well as the amount of bad juice poured (flashpoint intensity). In addition to analyzing flashpoint behavior, the intensity of aggression across trials was examined in relation to the individual difference variables of trait anger, irritability, and emotional susceptibility. Participants' willingness to accommodate in response to their partners' aggressive behavior was also assessed in relation to their level of relationship commitment as determined by the Investment Model (Rusbult, 1980).

Hypotheses

Flashpoint behavior and gender differences in aggression levels. It was hypothesized that flashpoint latency and intensity would vary as a function of the provocation condition. For example, a partner in the High Provocation condition was expected to aggress sooner and at a higher intensity than a partner in the Low Provocation condition. Based on the research findings of Zeichner, Parrott, et al. (2003), it followed that male participants in the current study would aggress at a higher intensity than female participants and that females would show a longer latency before engaging in aggressive behavior. However, it is important to note that Zeichner and colleagues' participants were delivering shocks to same-sex strangers. In their laboratory studies of

accommodation processes in couples, Rusbult et al. (1991) failed to obtain consistent gender differences in accommodative behavior across studies; however, when sex differences were obtained, women tended to display more accommodative behavior than men. Additionally, when examining provoked aggression among couples who were not given the opportunity to respond constructively, Imbraguglio (2005) found no sex differences in aggression levels. Considering those findings, it was predicted that although females might exhibit longer flashpoint latencies than their male partners, no gender differences in overall aggression levels would be obtained.

Aggression across trials. Generally, patterns of aggression similar to those observed by Imbraguglio (2005) were expected. That is, once a partner "flashed," or made the decision to aggress in response to the alleged provocation by his or her partner, it was predicted that he or she would respond in kind to the intensity of the aggression by the partner (i.e., the amount of bad juice received). As discussed above, gender differences in overall aggression levels were not expected.

Temperament variables. It was expected that scores on measures of trait anger, irritability, and emotional susceptibility would be positively related to flashpoint intensity and negatively related to flashpoint latency. In other words, those who experienced greater levels of baseline anger, irritability, and emotional susceptibility would aggress sooner and at a greater intensity. These individual difference variables were also hypothesized to predict mean aggression intensity across trials such that higher levels of anger, irritability, and emotional susceptibility would be related to increased overall aggression levels.

Investment Model variables. It was expected that an individual's flashpoint behavior would be predicted by Investment Model variables. Thus, greater levels of relationship commitment, satisfaction, and investment, and poorer quality relationship alternatives would be associated with increased flashpoint latency, or delay of aggression, and decreased flashpoint intensity.

Prior relationship aggression. It was predicted that both flashpoint intensity and latency would vary as a function of self-report of aggressive relationship behaviors. Thus, it was predicted that individuals who reported higher levels of relationship aggression would aggress earlier and at a greater intensity. Additionally, increased levels of negative relationship behaviors were expected to be related to increased overall aggression levels in the current study.

CHAPTER II

METHOD

Participants

Sixty-eight couples were recruited for this study. At least one member of each couple was enrolled in the Introductory Psychology course at the College of William & Mary and received one and a half hours of research participation credit for participating in the study. The majority of participants identified their racial background as Caucasian (71%), while 10% identified as Asian/Pacific Islander, 9% identified as Hispanic, 6% identified as bi-racial or “other” race, and 4% identified as African American. The age of participants ranged from 18 to 23 years with a mean age of 19.27 and standard deviation of 1.27. The duration of participants’ current relationships ranged from 1 month to 97 months, and the resulting distribution was positively skewed and leptokurtic. Within the sample, 73% of participants reported that they had been dating for one year or less. Ninety-six percent of participants indicated that they were dating their current partner exclusively.

Materials

Participants completed several questionnaires that assessed individual difference variables, including trait anger, irritability, and emotional susceptibility. Relationship variables, including commitment level, and past experience of psychological and physical relationship aggression were also measured. These factors were examined as they related to an individual's decision to retaliate when seemingly provoked by his or her partner.

Additionally, participants were asked to provide information regarding their experience in the study and their feelings for their partner following the manipulation.

Subtle and Overt Psychological Abuse Scale (SOPAS). The SOPAS (Marshall, 1999) was developed to assess subtle forms of psychological abuse that had previously been excluded from measures assessing women's experiences of abuse. Marshall (1999) posited that subtle acts, as opposed to obvious or overt displays of aggression, may not be readily perceived as harmful by an observer. Furthermore, subtle psychological abuse may be hard to describe by the victim and may be presented by the perpetrator in a loving or caring way (Marshall, 1999). This type of abuse may be related to negative adjustment variables, such as low self-esteem and rumination, which can result in significant psychological distress (Marshall, 1999). Marshall's original scale contained 68 items that assessed both overt and subtle psychological abuse. For the purpose of this study, an abbreviated, 35-item version of the SOPAS was used (L. L. Marshall, personal communication, September 29, 2004; see Appendix A). The scale is divided into two parts, with an initial section instructing participants to rate 15 items preceded by the statement, "How often does he..." The second section begins with the statement "In a loving, joking, or serious way, how often does he..." followed by 20 items assessing psychological abuse. Items in both sections are rated on a 6-point, Likert-type scale anchored by *never* (0) and *a great many times* (5). Sample items assessing subtle abuse include "make you worry about whether you could take care of yourself" and "make you feel guilty about something you have done or have not done." Overt psychological abuse is assessed through items including "remind you of times he was right and you were wrong" and "make you feel like nothing you say will have an effect on him." Because

the current study examines the aggressive behavior of both men and women, a version of the SOPAS developed by Imbraguglio (2005) to assess the subtle and overt psychological abuse of men was administered to male participants (see Appendix B).

In the current study, good internal consistency ($\alpha = .96$) was obtained for the 35-item SOPAS, which is consistent with the alpha coefficient of .93 reported by Imbraguglio (2005). Jones, Davidson, Bogat, Levendosky, and von Eye (2005) reported large intercorrelations between the scales measuring subtle and overt psychological abuse. They concluded that the constructs were not independent and that SOPAS items may represent a unidimensional assessment of psychological abuse. These findings call for further research into the measurement of psychological abuse. Hammock and O'Hearn (2002) reported that several variables related to physical abuse, including threat susceptibility, relationship length, and emotional commitment, also predicted the use of psychologically harmful behavior in dating relationships. These results suggest a strong relationship between physical and psychological aggression and warrant the inclusion of a measure of psychological abuse in the current study to more fully assess the occurrence of couple aggression.

Combined CTS-2 and SVAW/MS. This measure is a combined version of the Revised Conflict Tactics Scale (CTS2, Straus, Hamby, Boney-McCoy, & Sugarman, 1996) and the Severity of Violence Against Women/Men Scales (SVAWS, Marshall, 1992a; SVAMS, Marshall, 1992b). The CTS2 is comprised of 39 pairs of items (78 total items) assessing the extent to which partners in intimate relationships engage in psychological and physical attacks against each other and use negotiation to deal with conflict. Items on the CTS2 are organized within the following five scales: Negotiation,

Psychological Aggression, Physical Assault, Sexual Coercion, and Injury. Participants are instructed to indicate on an 8-point scale how frequently they and their partners have engaged in specific acts during the past year (*once, twice, 3-5 times, 6-10 times, 11-20 times, more than 20 times, never, not in the past year but it did happen before*). Sample items include "I insulted or swore at my partner," "I went to a doctor because of a fight with my partner," and "My partner agreed to try a solution to a disagreement I suggested."

Straus et al. (1996) reported internal consistency of the CTS2 scales ranging from .79 to .95, as well as preliminary evidence of construct and discriminant validity. The authors also posited that because the CTS2 was conceptually and methodologically equivalent to the original Conflict Tactics Scale (CTS, Straus, 1979) from which it was developed, the extensive research supporting the validity of the CTS would apply to the CTS2. Several studies published since the development of the CTS2 have reported adequate internal consistency, though studies addressing factor solutions have yielded mixed solutions (Calvete, Corral, & Estévez, 2007). Calvete et al. (2007) reported confirmatory factor analyses supporting the five broad scales of the CTS2, as well as strong internal consistency among the scales.

The Severity of Violence Against Women/Men Scales (SVAW/MS) (Marshall, 1992a, 1992b) each include 46 items assessing threats of violence and actual violence as they occur in intimate relationships. Directions are similar on both scales and ask participants to rate the frequency with which their partners have performed each of the 46 behaviors within the past 12 months. Sample items include "threw, smashed or broke an object" and "threatened someone you care about." Items are rated on a 4-point, Likert-

type scale anchored by *never* (1) and *many times* (4). Gist et al. (2001) reported an alpha of .91 for the Threats of Abuse dimension, and .94 for the Actual Abuse dimension.

Due to similarities in item content, the current study utilized a combined version of the CTS2 and the SVAWS/MS developed by Imbraguglio (2005, see Appendix C). Eighty-two (82) items are included that assess different aggressive acts, offering breadth and efficiency to the combined measure. Items are rated on the same 8-point frequency scale employed by the CTS2 (see description above). For the purposes of the current study, items assessing sexual coercion on the CTS2 and sexual violence on the SVAWS/MS were excluded, as this topic exceeded the scope of the current investigation. In the current study, good internal consistency ($\alpha = .94$) was obtained for the 82-item scale.

Investment Model Scale. Research on the Investment Model provides evidence for the claim that commitment is strengthened under conditions of high satisfaction and investment and poor alternatives (Rusbult, Martz, & Agnew, 1998). Furthermore, commitment has been shown to directly mediate tendencies to persist in relationships and to engage in relationship maintenance behaviors (Rusbult et al., 1998). The Investment Model Scale was developed by Rusbult et al. (1998) to measure the four key constructs of the Investment Model: commitment level, satisfaction level, quality of alternatives, and investment size (see Appendix D). This 25-item measure is comprised of four subscales that represent each of these constructs. Two types of items are included within the satisfaction level, quality of alternatives, and investment size subscales: (a) *facet items*, which provide concrete examples of the parent construct, and (b) *global items*, which serve as general measures of each construct (Rusbult et al., 1998). The authors noted that

they included facet items to serve as concrete illustrations that would activate thoughts about the construct, thereby preparing participants to answer global items. Facet items were included to obtain good global measures of each construct by enhancing participants' understanding of the global items, thus increasing their reliability and validity; therefore, only global items are typically utilized in statistical tests of Investment Model hypotheses and were analyzed in the current study (Rusbult et al., 1998).

Facet items on the Satisfaction Level subscale include "My partner fulfills my needs for intimacy (sharing personal thoughts, secrets, etc.)" and "My partner fulfills my needs for security (feeling trusting, comfortable in a stable relationship, etc.)." Sample facet items on the Investment Size subscale include "My sense of personal identity (who I am) is linked to my partner and our relationship" and "My partner and I share many memories." Participants' responses to facet items are measured along a 4-point, Likert-type scale ranging from "*don't agree at all*" to "*agree completely*." Global items are measured on a 9-point, Likert-type scale that ranges from *do not agree at all* (0) to *agree completely* (8). Global items on the Satisfaction Level subscale include "I feel satisfied with our relationship" and "Our relationship makes me happy." Examples of global items on the Investment Size subscale are "I have put a great deal into our relationship that I would lose if the relationship were to end" and "My relationships with friends and family members would be complicated if my partner and I were to break up (e.g., partner is friends with people I care about)."

Rusbult et al. (1998) reported good reliability for the global items measuring each construct. Alphas ranged from .92 to .95 for Satisfaction Level, .82 to .88 for Quality of Alternatives, .82 to .84 for Investment Size, and .91 to .95 for Commitment Level. The

authors also reported acceptable reliability for the facet items, with alphas ranging from .73 to .93. Factor analyses revealed four factors, corresponding to each independent construct, with no significant cross-factor loadings. Additionally, the authors reported evidence of good convergent and discriminant validity of the Investment Model Scale. In the current study, good reliability was found for Satisfaction Level global items ($\alpha = .87$), Quality of Alternatives global items ($\alpha = .87$), and Commitment Level items ($\alpha = .87$). Acceptable reliability was found for Investment Size global items ($\alpha = .77$). Cronbach's alphas for facet items ranged from .68 to .83.

State-Trait Anger Scale (STAS). Spielberger et al. (1983) contended that anger may be conceptualized as both a relatively stable personality trait and an emotional state that can vary in intensity. As previously developed anger scales tended to "confound the experience of anger with aggressive behavior and anger-provoking situations" (p. 168, Spielberger et al., 1983), Spielberger and colleagues developed the STAS as a means to assess the state-trait distinction. The STAS contains 10 State-Anger items including "I feel angry" and "I feel like yelling at somebody." Participants are instructed to indicate the intensity of their feelings "right now" on a 4-point, Likert-type scale ranging from *not at all* (1) to *very much so* (4). Ten Trait-Anger items on the STAS require respondents to rate themselves according to how they "generally feel." Sample items include "I am quick-tempered" and "I get angry when I'm slowed down by others' mistakes." Trait-Anger items are measured on a 4-point, Likert-type scale ranging from *almost never* (1) to *almost always* (4). Spielberger et al. (1983) reported a high degree of internal consistency for the STAS, with alpha coefficients for the State-Anger scale ranging from .88 to .95, and those for the Trait-Anger scale ranging from .81 to .92. In the current

study, a Cronbach's alpha of .86 was obtained for the State-Anger scale, and an alpha of .78 was found for the Trait-Anger scale.

Irritability and Emotional Susceptibility Scales. These scales were developed by Caprara (1983) to examine manifestations of aggression that involve an impulsive and emotional component (see Appendix F). Although they rely on different items, both the Irritability and Emotional Susceptibility Scales examine constructs that are related to an individual's capacity to tolerate frustration and manage excitation, as well as his or her reactions in the face of actual or perceived attack (Caprara, Cinanni, D'Imperio, Passerini, Renzi, & Travaglia, 1985.) Derived from the Irritability subscale of the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957), Caprara's Irritability Scale is a 30-item measure (20 effective items and 10 control items) that similarly assesses an individual's "greater or lesser tendency to react impulsively, controversially or rudely at the slightest provocation or disagreement" (Caprara et al., 1985, p. 667). Sample items include "Sometimes I really want to pick a fight" and "I don't think I am a very tolerant person." Items are measured along a 6-point, Likert-type scale ranging from *completely false for me* (0) to *completely true for me* (5). The 20 effective items are summed to obtain a total irritability score, with higher values indicating a greater degree of irritability. The author reported satisfactory internal consistency ($\alpha = .81$), test-retest reliability ($\alpha = .83$), and split-half reliability ($\alpha = .90$). Good internal consistency was obtained in the current study ($\alpha = .84$).

In an effort to further understand the possible connections between the offensive and defensive components of the aggressive reaction, Caprara (1983) developed the Emotional Susceptibility scale. Caprara et al. (1985) defined emotional susceptibility as

"the tendency of the individual to experience feelings of discomfort, helplessness, inadequacy, and vulnerability" (p. 667). The Emotional Susceptibility scale contains 40 items (30 effective and 10 control) measured on the same 6-point, Likert-type scale used in the Irritability scale. Items include "I am too sensitive to criticism" and "I often feel vulnerable and defenseless." The author reported good internal consistency ($\alpha = .88$), test-retest reliability ($\alpha = .84$), and split-half reliability ($\alpha = .94$). A Cronbach's Alpha of .91 was obtained in the current study. Previous research (Caprara et al., 1983) demonstrated that highly irritable and highly emotionally susceptible participants were more likely to choose higher levels of shocks in response to provocation than participants low in irritability and low in emotional susceptibility.

Demographic Data Sheet. This 7-item measure was developed to obtain background information from participants (see Appendix G). Items assess demographic variables, including gender, age, and race, as well as information regarding each participant's relationship with his or her partner. Participants were asked to indicate how long they have been involved in their current relationship and whether this relationship is exclusive. This measure also includes three items rated on a 7-point, Likert-type scale ranging from *a little* (1) to *a lot* (7) assessing participants' general feelings towards their partners. These items include "In general, how much do you love your partner" and "In general, how much do you trust your partner."

Post-Juice Feelings Questionnaire. This 11-item measure was developed by Miller (2003) to serve as a manipulation check and to assess participants' feelings towards their partners following the bad juice paradigm (see Appendix H). Items are scored on a 7-point Likert-type scale and assess how participants feel immediately

following the manipulation. Items include questions about the participant's perceptions of the visual tasks they performed and the juice they consumed. Six items are included that assess participants' current feelings toward their partners. Questions include "How much do you like your partner right now," "How angry are you with your partner right now," and "How wronged do you feel by your partner right now." These items are answered along a 7-point, Likert-type scale ranging from a *little* (1) to a *lot* (7).

Bad Juice. The juice that was used to operationalize aggression in the current study was developed by Miller (2003) and consists of 2 quarts of Lemon-Lime Gatorade, 2 quarts of Lemon-Lime soda, and $\frac{1}{4}$ cup of Texas Pete hot sauce. Miller (2003) tested this juice on a group of participants who rated the taste of the juice on a 7-point, Likert-type scale ranging from *good tasting* (1) to *one of the worst things ever tasted* (7). The average rating of the taste of the juice was 5.08. The amount of juice received by a participant to drink was used as a measure of provocation, whereas the amount of juice a participant poured for his or her partner to drink was used as a measure of aggression.

Procedure

The current study utilized the "bad juice" paradigm modeled from Miller (2003) and validated by Imbraguglio (2005) in which bad juice is substituted for electric shocks in examining provoked aggression in dating couples. Each couple was tested separately. The participants were told that the study was testing "Intersensory Interference," which was defined as how experiences in one sensory system affect the performance of another sensory system (see Appendix I for verbatim script). Specifically, participants were told the focus of the study was to observe the effects of taste and touch on vision. They were also informed that their participation as a couple was necessary because the researchers

were concerned that being touched by a stranger would be uncomfortable. Participants were asked about any known food allergies and informed consent (see Appendix J) was obtained from each participant at that time.

The couple was then separated into different rooms for the first part of the experiment - testing “the effects of taste on vision.” Participants were informed that there were four possible beverages that they might receive, including sweet, salty, tart, and neutral flavored beverages. Each partner was told that he or she had been randomly assigned two of these beverages, depending upon the condition to which the couple had been assigned. Participants were then asked to taste each of the beverages. They were also asked not to disclose which beverages they had been assigned so that the researcher would remain blind to the study condition. All participants were given bad juice and water as their two beverages. Each participant was given a pitcher labeled "A" (containing water) and a pitcher labeled "B" (containing bad juice). The participants were told that in an effort to make the study unbiased, they would choose the type and amount of beverage to be allotted to their partners. Participants were asked to fill one-ounce cups with their beverage of choice and pour them into a larger opaque cup to be given to their partners. They were instructed to cover the larger cup with foil in order to assure that the researcher was unaware of the type of beverage and the amount poured. Participants were asked to write down which beverage they chose and the number of one-ounce cups they poured. The researcher then removed the cup from the room under the premise that it would be given to the participant's partner. Participants were then asked to wait while the beverage that their partner had allotted for them was retrieved.

While the participants were waiting, the researcher gave their partners an amount of bad juice predetermined by the condition to which the couple had been randomly assigned (see descriptions below). Participants were asked to drink the juice that their partner has supposedly allotted for them. They were asked not to reveal which beverage they consumed in order to avoid bias. Each partner was then administered the "visual task," which involved completing a puzzle maze (see Appendix K) during a three-minute period. The participants were instructed to complete the maze without lifting their pencil or looking ahead to the end of the maze. They were told that their scores would be based on how far they got to the completion of the maze, the number of times they departed from the correct route, and the type of departures they took. After the three-minute visual task, participants were given crackers and water to cleanse the palate. They were then asked to pour another beverage for their partner for the next trial. This entire procedure was performed four more times for a total of five trials. The researcher measured and recorded the amount and type of beverage participants poured for their partners on each of the five trials.

A trial was defined as including (a) pouring juice for one's partner (the measure of aggression against one's partner), (b) drinking juice allotted "by a partner" (the manipulation of provocation), and (c) completing a maze (a filler task). All trials included these three components, with the exception of Trial 5. On Trial 5, participants poured a beverage for their partners as a final measure of aggression, but they did not receive a beverage to consume. It should also be noted that Trial 1 represented a measure of unprovoked aggression.

There were four conditions in this study, which corresponded to four different patterns of aggression couples may experience during a disagreement. The first condition was a control, or Low Provocation condition, which represented a consistently low level of aggression from a partner during an argument. Participants in this condition received 1 ounce of bad juice on all four trials. In the second condition, Increasing Provocation, participants received increasing amounts of bad juice (1 ounce, 3 ounces, 5 ounces, and 7 ounces, respectively) on each trial, which paralleled a steadily increasing level of aggression from a partner over the course of a dispute. Participants in the third condition, Decreasing Provocation, received decreasing amounts of bad juice across conditions (7 ounces, 5 ounces, 3 ounces, and 1 ounce, respectively). This condition represented a partner who withdraws aggression over the course of an argument. Finally, the fourth condition, steady High Provocation, characterized a partner who initiates and maintains a high level of aggression throughout the course of an argument. Participants in this condition received 7 ounces of bad juice across all four trials.

After completion of Trial 5, participants were informed that it was necessary to allow some time before beginning the next part of the experiment so that the effects of the beverages would not interfere with their sense of touch during the next task. They were asked to complete the STAS, Post-Juice Feelings Questionnaire, Demographic Data Sheet, SOPAS, Combined CTS-2 & SVAWMS, Investment Model Scale, and Irritability and Emotional Susceptibility Scales. The STAS and Post-Juice Feelings Questionnaire were administered first, followed by the Demographic Data Sheet, and then the remaining measures in a randomized order. Participants were then debriefed and informed of the true purpose of the study. In the event that any difficult feelings arose as a result of

participation in this study, all participants were provided with information regarding services provided at the William & Mary Counseling Center. A follow-up e-mail (see Appendix L) was sent to all participants encouraging them to respond with any questions or concerns that may have arisen during or following their participation in the study. They were also asked to provide some information regarding their experience of the study and their likelihood of recommending participation in this study to others.

CHAPTER III

RESULTS

Prior to running the main analyses, the data were examined for potential problems and descriptive statistics were conducted for all dependent variables. No outliers were present in the data. Manipulation checks were included to ensure that the bad juice was a valid operationalization of provoked aggression. Participants were asked to rate the flavor of the beverage on a 7-point, Likert-type scale ranging from *very bad* (1) to *very good* (7). The average rating of the taste of the juice on this scale was 1.69 with a standard deviation of .99 and scores ranging from 1 to 6, which suggested that, on average, participants found the taste of the bad juice aversive.

Flashpoint Behavior and Gender Comparisons Across Conditions

Hypotheses addressing flashpoint behavior and gender differences were tested using 2 (sex) X 4 (condition) factorial ANCOVAs with flashpoint latency and flashpoint intensity as the dependent variables. As discussed by Cohen and Cohen (1975), the measures obtained from partners in a given couple in this design were not independent. Therefore, couple number was included as a covariate in order to control for the fact that responses obtained from partners in a given couple in this design were not independent. With regard to flashpoint latency, condition did not yield a significant main effect, $F(3, 126) = .89, ns$. In other words, the trial during which participants first displayed aggression did not vary as a function of condition. A significant main effect was obtained for sex, $F(1, 126) = 6.24, p < .05$, partial $\eta^2 = .05$, power = .70. On average, male participants ($M = 1.53, SD = 1.09$) aggressed earlier than female participants ($M =$

2.01, $SD = 1.14$). However, 97% of women aggressed at some point during the manipulation while only 85% of men chose to aggress, Mann Whitney $U = 2011.00$, $p < .05$.

With regard to flashpoint intensity, a significant main effect was obtained for condition, $F(3, 126) = 3.17$, $p < .05$, partial $\eta^2 = .07$, power = .72. A Sidak correction (Field, 2005) was used to ascertain where the differences lie. Participants in the Decreasing condition ($M = 3.68$, $SD = 2.84$) poured significantly more bad juice on the flashpoint trial than participants in the Increasing condition ($M = 2.14$, $SD = 1.86$, see Figure 1). Sex did not yield a significant main effect for flashpoint intensity, $F(1, 126) = .09$, *ns*. Men and women displayed similar levels of aggression on the flashpoint trial.

Interestingly, a significant positive correlation was found between flashpoint intensity and flashpoint latency, $r(131) = .26$, $p < .01$. The longer a participant waited to aggress, the more aggression he or she displayed on the flashpoint trial. Additionally, flashpoint intensity was positively correlated with overall aggression, $r(131) = .44$, $p < .001$. The more aggression displayed on the flashpoint trial, the more total aggression displayed across all trials.

Aggression Across Trials

The independent variables gender, provocation condition, and trial number were examined in relation to the amount of aggression displayed across trials. A 2 (sex) X 4 (condition) X 5 (trial) repeated measures ANCOVA was run to examine differences in aggression across trials. Couple number was again used as the covariate due to the fact that partners within each couple were not statistically independent of each other. The data used in this analysis violated the sphericity assumption; therefore, Greenhouse-

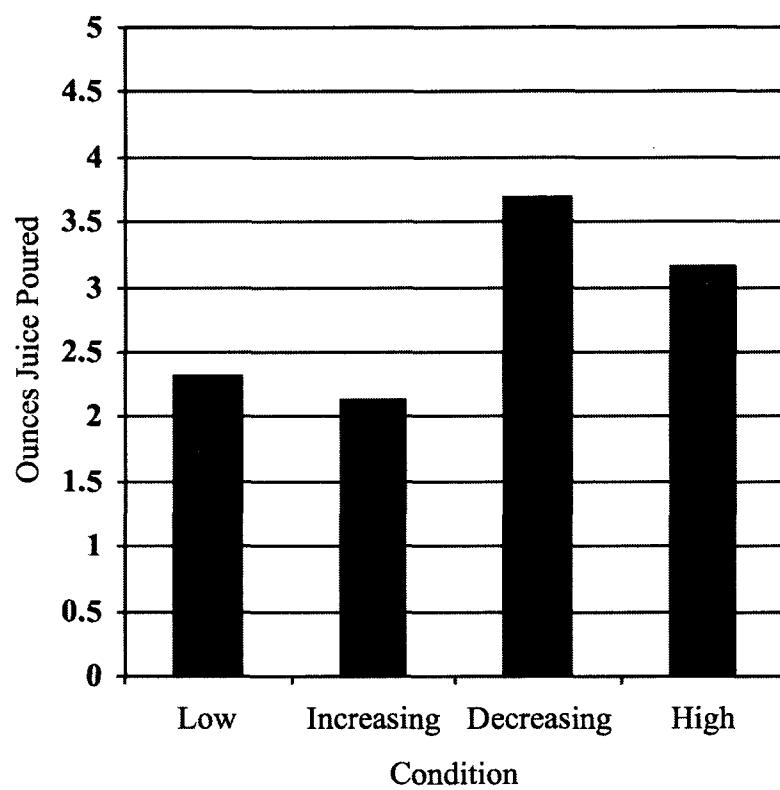


Figure 1. Amount of juice poured on flashpoint trial by provocation condition.

Geisser corrected F -statistics were used. Main effects were not obtained for sex,

$F(1,126) = 1.89$, *ns*, condition, $F(3, 126) = 2.25$, *ns*, or trial, $F(4, 416) = .88$, *ns*.

However, a significant interaction effect was obtained between condition and trial, $F(10, 416) = 2.00$, $p < .05$, partial $\eta^2 = .05$, power = .88. This interaction is depicted in Figure 2.

Simple effects analyses were conducted to examine the mean differences among all levels of the independent variables. When conducting simple effects analyses, the pooled error term from the original repeated measures ANCOVA was used to determine significance in order to control the experiment-wise error rate. For participants in the Low Provocation condition, no significant differences were found in aggression levels across trials, $F(3, 107) = .18$, *ns*. In other words, participants in the Low Provocation condition poured similar amounts of bad juice on each trial.

Participants in the Increasing Provocation condition poured significantly more juice on the last trial, Trial 5 ($M = 3.01$, $SD = 4.25$), than they did on Trial 1 ($M = .60$, $SD = 1.14$), $F(1, 33) = 12.03$, $p < .01$; Trial 2 ($M = 1.47$, $SD = 1.96$), $F(1, 33) = 4.93$, $p < .05$, and Trial 3 ($M = 1.40$, $SD = 2.41$), $F(1, 33) = 5.41$, $p < .05$. No other significant differences were found between trials.

In the Decreasing Provocation condition, participants poured significantly more juice on Trial 2 ($M = 3.69$, $SD = 3.36$) than on all other trials: Trial 1 ($M = .75$, $SD = 1.42$), $F(1, 33) = 17.88$, $p < .01$; Trial 3 ($M = 1.57$, $SD = 2.41$), $F(1, 33) = 9.27$, $p < .01$; Trial 4 ($M = 1.56$, $SD = 2.45$), $F(1, 33) = 9.40$, $p < .01$; Trial 5 ($M = 1.37$, $SD = 2.93$), $F(1, 33) = 11.16$, $p < .01$. No other significant differences were found between trials.

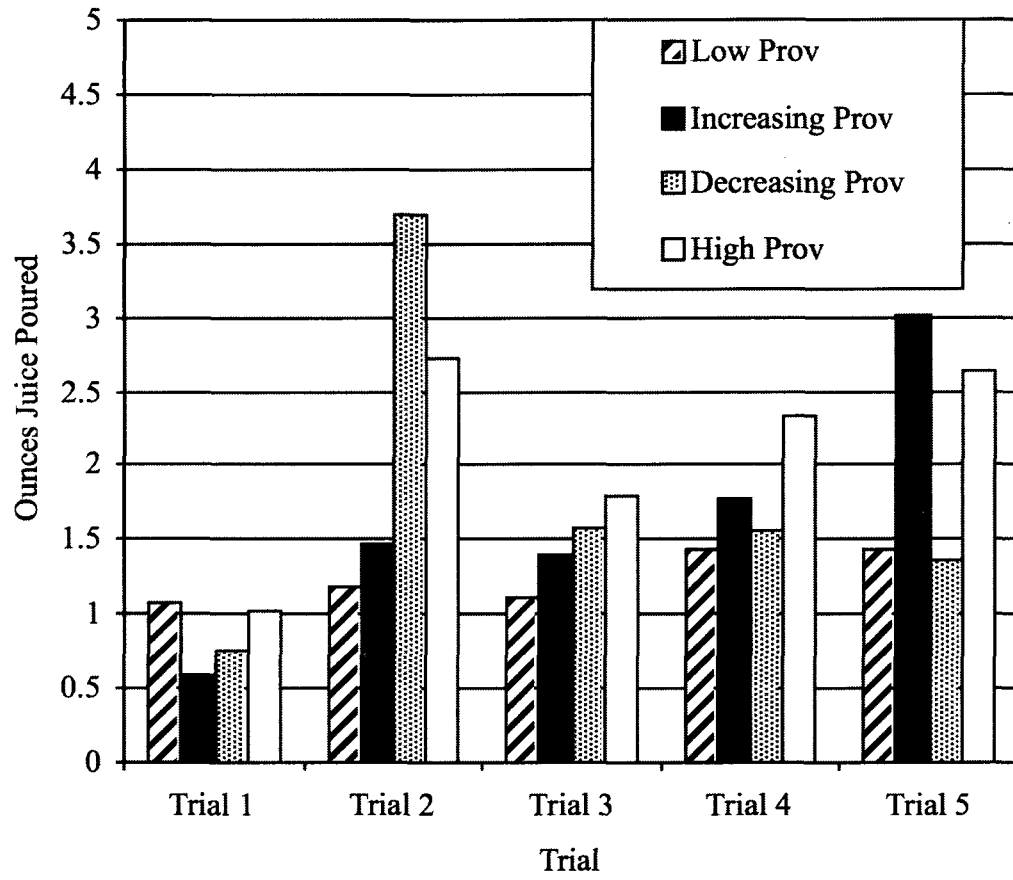


Figure 2. Amount of juice poured as a function of provocation level and trial.

Significant differences were found between trials amongst participants in the High Provocation condition. Participants poured significantly more bad juice on Trial 2 ($M = 2.72$, $SD = 3.57$) than they poured on Trial 1 ($M = 1.02$, $SD = 1.38$), $F(1, 31) = 5.64$, $p < .05$. Additionally, participants in the High Provocation condition poured more bad juice on Trial 5 ($M = 2.64$, $SD = 4.37$) than they did on Trial 1, ($M = 1.02$, $SD = 1.38$), $F(1, 31) = 5.14$, $p < .05$. No other significant differences were found between trials. After Trial 1, participants poured similar amounts of bad juice during Trials 2 through 5.

When comparing conditions, significant differences were not found with regard to the amount of juice poured on Trial 1, $F(3, 132) = .86$, *ns*; Trial 3, $F(3, 132) = .46$, *ns*; Trial 4, $F(3, 132) = .56$, *ns*, and Trial 5, $F(3, 132) = 1.88$, *ns*. However, on Trial 2, which was the first trial of provoked aggression, the amount of juice poured varied by condition, $F(3, 132) = 6.10$, $p < .01$, partial $\eta^2 = .12$, power = .96. A Bonferroni Correction showed that participants in the Decreasing Provocation condition ($M = 3.69$, $SD = 3.36$) poured significantly more juice on Trial 2 than participants in the Low Provocation ($M = 1.19$, $SD = 1.72$) and Increasing Provocation ($M = 1.47$, $SD = 1.96$) conditions.

Temperament Variables

Predictions regarding temperament variables were tested using partial correlational analyses. In these analyses, as well as the correlational analyses reported below, couple number was held constant to control for variance introduced as a result of the relationship between partners. It was expected that scores on measures of individual difference variables, including trait anger, irritability, and emotional susceptibility, would be positively related to flashpoint intensity and negatively related to flashpoint latency. A positive relationship was found between flashpoint intensity and characteristics of

irritability, $r(131) = .24, p < .01$. The greater the degree of irritability endorsed by a participant, the more juice he or she poured on the flashpoint trial, i.e., the first trial in which he or she opted to aggress. Flashpoint intensity was not significantly correlated with trait anger, $r(131) = .12, ns$, or emotional susceptibility, $r(131) = .09, ns$.

Hypotheses regarding flashpoint latency were not supported. A significant association was not found between flashpoint latency (the trial in which juice was first poured) and trait anger, $r(131) = .08, ns$, irritability, $r(131) = -.06, ns$, or emotional susceptibility, $r(131) = .11, ns$. Therefore, these temperament variables were not related to whether a partner retaliated quickly or delayed aggression after being provoked.

Overall aggression was positively associated with irritability, $r(131) = .25, p < .01$, and emotional susceptibility, $r(131) = .18, p < .05$. Trait anger was not significantly correlated with overall aggression, $r(131) = .12, ns$. Therefore, the greater the degree of irritability and emotional susceptibility endorsed by a participant, the more bad juice he or she poured across trials.

Investment Model Variables

Hypothesis 4 predicted that greater levels of relationship commitment would be related to delay of aggression and decreased aggression levels on the flashpoint trial.

Partial correlational analyses revealed that flashpoint latency was not significantly related to relationship satisfaction, $r(131) = .10, ns$, quality of relationship alternatives, $r(131) = .01, ns$, investment level, $r(131) = .07, ns$, or commitment level, $r(131) = .01, ns$.

Similarly, flashpoint aggression levels were not associated with relationship satisfaction, $r(131) = .01, ns$, quality of relationship alternatives, $r(131) = .05, ns$, investment level, $r(131) = .02, ns$, or commitment level, $r(131) = -.07, ns$.

The total amount of bad juice poured across trials was not significantly related to the investment model variables. Overall aggression was not significantly associated with relationship satisfaction, $r(131) = -.10$, *ns*, quality of relationship alternatives, $r(131) = .08$, *ns*, investment level, $r(131) = .06$, *ns*, or commitment level, $r(131) = -.07$, *ns*.

Prior Relationship Aggression

Hypothesis 5 predicted that flashpoint intensity and latency would vary as a function of past aggressive relationship behaviors as reported on the combined version of the CTS2 and SVAWS/MS. Participants' reports of their own aggressive relationship behaviors were not significantly related to the amount of juice they poured on the flashpoint trial, $r(131) = .16$, *ns*. Flashpoint latency was not significantly related to participants' reports of aggressive relationship behavior, $r(131) = -.05$, *ns*. Overall aggression was positively related to one's own past aggressive relationship behaviors, $r(131) = .17$, $p < .05$. The more previous intimate partner aggression engaged in by participants, the more aggression they displayed during the experiment.

Participants also reported how often their partners engaged in aggressive relationship behaviors. A significant correlation was not obtained between participants' reports of their partners' aggressive relationship behaviors and flashpoint behavior or overall aggression. Therefore, being the victim of previous intimate partner aggression was not associated with retaliation response latency, $r(131) = -.04$, *ns*, flashpoint trial aggression levels, $r(131) = .09$, *ns*, or overall aggression $r(131) = .16$, *ns*. However, a participant's report of his or her own aggressive relationship behaviors was positively correlated with his or her partner's negative relationship behaviors, $r(131) = .93$, $p <$

.001. That is, one's own relationship aggression varied as a function of one's partner's aggressive behavior.

Trial 1 Behavior: Unprovoked Aggression

Trial 1 provided an opportunity to observe whether participants would aggress toward their partners in the absence of provocation. Correlations were performed to determine what factors might be related to Trial 1 behavior. The more a participant reported having engaged in negative relationship behaviors, the more bad juice he or she poured on Trial 1, $r(131) = .22, p < .05$. Additionally, a significant positive relationship was found between the amount of bad juice a participant poured on Trial 1 and the frequency with which that participant reported his or her partner had displayed previous aggressive relationship behaviors, $r(131) = .23, p < .01$. Finally, Trial 1 behavior was positively correlated with total aggression levels, $r(131) = .36, p < .001$. Higher levels of aggression on Trial 1 were related to higher levels of aggression across trials.

Post-Manipulation Analyses

Participants were asked follow-up questions regarding their experience of the manipulation. Univariate ANCOVAs, holding couple number constant, were performed to ascertain whether participants' experiences varied as a function of gender or condition. With regard to the taste of the juice, a main effect was obtained for sex, $F(1, 126) = 9.90, p < .01, \text{partial } \eta^2 = .07, \text{power} = .88$. Females ($M = 1.42, SD = .74$) reported the taste of the juice as being more aversive than males ($M = 1.94, SD = 1.13$). Participants were also asked to report the extent to which they felt the amount and type of beverage they received influenced the amount and type of beverage they poured for their partners. A main effect was once again obtained for sex, $F(1, 125) = 14.50, p < .001, \text{partial } \eta^2 = .10$,

power = .97. Female participants ($M = 4.81$, $SD = 1.81$) reported that their behavior was influenced to a greater degree by the amount of juice they received as compared to male participants ($M = 3.60$, $SD = 1.85$).

Participants were also asked to assess their feelings toward their partners following the manipulation. Univariate ANCOVAs, holding couple number constant, were performed to ascertain whether participants' feelings varied as a function of gender or condition. As relationship commitment was significantly correlated with post-experiment reports of positive feelings toward one's partner, commitment level was also held constant to control for variance associated with this variable. A significant main effect was obtained for sex with regard to participants' ratings of how much they liked their partners following the experiment $F(1, 125) = 9.67$, $p < .01$, partial $\eta^2 = .07$, power = .87. Male participants ($M = 5.54$, $SD = 1.71$) reported liking their partners more than female participants ($M = 4.81$, $SD = 1.67$). Additionally, a main effect was obtained for condition, $F(3, 125) = 8.88$, $p < .001$, partial $\eta^2 = .18$, power = 1.00 (see Figure 3). Participants in the Low Provocation ($M = 5.78$, $SD = 1.44$) and Decreasing Provocation ($M = 5.88$, $SD = 1.53$) conditions reported liking their partners more than participants in the Increasing Provocation condition ($M = 4.26$, $SD = 1.62$). Participants in the Decreasing Provocation condition ($M = 5.88$, $SD = 1.53$) reported liking their partners more than participants in the High Provocation condition ($M = 4.75$, $SD = 1.78$).

A significant interaction effect was obtained between gender and condition when analyzing participants' reports of love for their partners following the experiment, $F(3, 124) = 4.07$, $p < .01$, partial $\eta^2 = .09$, power = .83. Male participants' responses regarding how much they loved their partners were not impacted by condition, $F(3, 61) =$

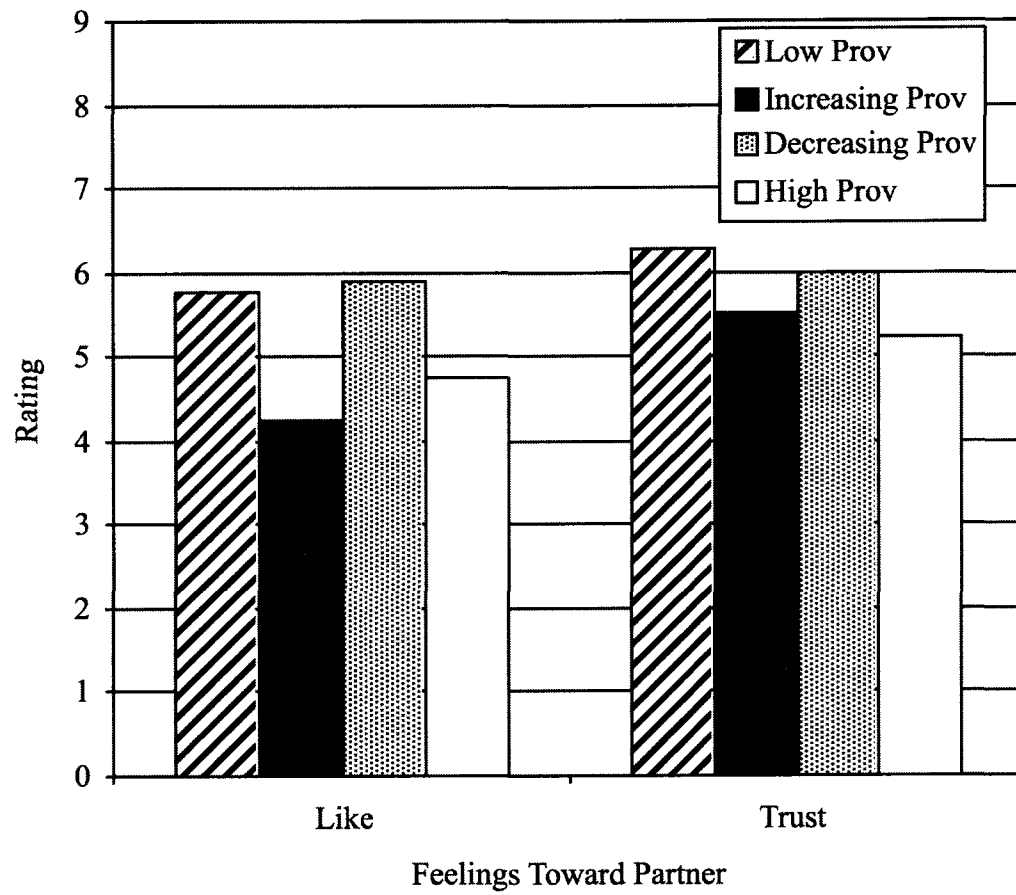


Figure 3. Condition main effects for liking and trusting one's partner.

.90, *ns*. Female participants in the Increasing Provocation condition ($M = 5.00$, $SD = 1.59$) rated their degree of love for their partners lower than females in the Decreasing Provocation condition ($M = 6.29$, $SD = 1.36$), $F(3, 61) = 3.70$, $p < .05$, partial $\eta^2 = .15$, power = .78. A significant condition main effect, as depicted in Figure 3, was found for trust, $F(3, 130) = 3.42$, $p < .05$, partial $\eta^2 = .07$, power = .76. Participants in the Low Provocation condition ($M = 6.28$, $SD = 1.00$) reported trusting their partners more than participants in the High Provocation condition ($M = 5.22$, $SD = 1.68$).

Participants were asked to rate their anger toward their partners, as well as how wronged they felt by their partners. Trait anger was positively correlated with these variables, and was therefore partialled out of the ANCOVA to control for unwanted variance. Significant sex and condition main effects were obtained for anger and feeling wronged. Female participants ($M = 2.93$, $SD = 1.81$) were angrier with their partners than were male participants ($M = 2.10$, $SD = 1.51$), $F(1, 125) = 7.57$, $p < .01$, partial $\eta^2 = .06$, power = .78. Additionally, participants in the Increasing Provocation ($M = 3.15$, $SD = 1.60$) and High Provocation ($M = 2.88$, $SD = 1.90$) conditions reported more anger toward their partners than did participants in the Decreasing Provocation condition ($M = 1.82$, $SD = 1.31$), $F(3, 125) = 5.02$, $p < .01$, partial $\eta^2 = .11$, power = .91 (see Figure 4). Similarly, female participants ($M = 3.12$, $SD = 1.96$) reported feeling more wronged by their partners than did male participants ($M = 2.18$, $SD = 1.58$), $F(1, 125) = 8.36$, $p < .01$, partial $\eta^2 = .06$, power = .82. Participants in the High Provocation condition ($M = 3.41$, $SD = 1.93$) reported feeling more wronged than did participants in the Decreasing Provocation condition ($M = 1.85$, $SD = 1.31$), $F(3, 125) = 4.90$, $p < .01$, partial $\eta^2 = .11$, power = .90 (see Figure 4).

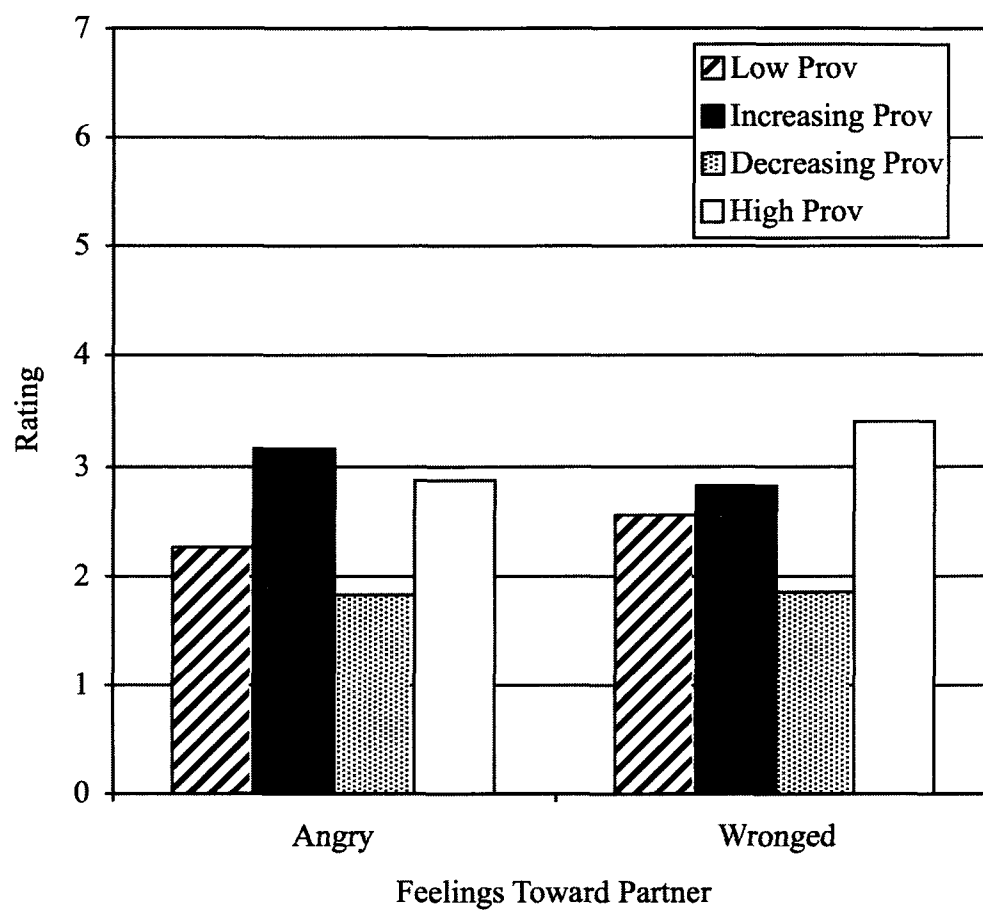


Figure 4. Condition main effects for feeling angry with and wronged by one's partner.

CHAPTER IV

DISCUSSION

This study was the first of its kind to examine common couple aggression using a response choice paradigm, thus creating a laboratory setting that more closely resembled a realistic dispute between partners. Through experimental manipulation of patterns of aggression, this study allowed partners' responses to provocation to be directly observed. Variables of interest included flashpoint latency, or the number of trials that occurred prior to a participant's decision to aggress, as well as the intensity of the aggressive response. Individual and relationship variables were analyzed as they related to participants' responses to provocation.

Flashpoint latency did not vary as a function of condition. However, as predicted, male participants aggressed earlier than female participants. Gender differences were not found with regard to overall aggression. Partial support was obtained for the prediction that flashpoint intensity would vary as a function of condition: participants in the Decreasing Provocation condition poured more juice on the flashpoint trial than those in the Increasing Provocation Condition. Partial support was obtained for the prediction that participants would respond in kind to the level of provocation received. Significant differences in aggression levels were not found between Trials 1, 3, 4, and 5. Aggression levels varied by condition on Trial 2, the first trial of provoked aggression, with participants in the Decreasing Provocation condition having poured more juice than those in the Low and Increasing Provocation conditions. Analyses were also conducted that compared how participants in the varying conditions responded on each trial.

Participants in the Low Provocation condition poured similar amounts of juice on each trial. Individuals in the Increasing Provocation condition poured significantly more juice on Trial 5 than they poured on the first 3 trials. Participants in the Decreasing Provocation condition poured more juice on Trial 2 than on all other trials. Finally, participants in the High Provocation condition poured significantly less juice on Trial 1 than on the remaining trials.

Flashpoint latency was not related to levels of irritability, emotional susceptibility, or trait anger. However, increased irritability was related to increased flashpoint aggression. In addition, the greater the degree of irritability and emotional susceptibility reported by participants, the more aggression they displayed over the course of the experiment. Hypotheses regarding the relationship between trait anger and aggression were not supported. Flashpoint behavior did not vary as a function of investment model variables or previous negative relationship behaviors. These results, as well as the results of additional analyses, are discussed below.

Summary of Flashpoint Behavior Results

Contrary to expectations, a participant's flashpoint trial did not vary as a function of the provocation condition. Although it was originally hypothesized that participants in conditions receiving higher initial levels of provocation would be influenced to aggress sooner, this was not observed. This finding may be considered in light of participants' perceptions that their partners had the opportunity to pour a non-aversive beverage and instead poured bad juice. Therefore, any amount of juice received likely would have been viewed as an aggressive response and thus may have triggered immediate retaliation. This line of reasoning may be strengthened by the fact that the flashpoint

latency distribution was positively skewed: 82% of participants who flashed did so on or before the second trial.

As predicted, male participants aggressed earlier than female participants. This finding is consistent with findings reported by Zeichner, Parrott, et al. (2003), which demonstrated that women waited significantly longer than men before retaliating in response to provocation. This result suggests that, during a dispute, women may initially demonstrate more accommodative behavior than men. Similar findings have been reported by Rusbult et al. (1991) in their laboratory studies of couple aggression. However, contrary to trends reported in flashpoint studies conducted by Zeichner and colleagues, significantly more women than men chose to aggress in the current study. This disparity requires further discussion.

In the response choice aggression paradigm studies conducted by Zeichner et al. (1999, 2003), participants were paired with same-sex strangers who were visible to the participants while the participants were administering shocks. The authors suggested that women might have been more impacted by social sanction than men, thus influencing them to delay aggressive responding. In contrast, the current study offered participants a degree of anonymity, as they poured juice without being observed by the researcher or their partners, which may have allowed participants to feel less accountable for their aggression. Moreover, the fact that the current study was examining couple aggression introduced numerous relationship dynamics that are not present in stranger aggression paradigms. For example, norms that exist in Western cultures disapproving of male to female aggression may have influenced men in the current study to refrain from retaliation and endure provocation from their female partners (Archer, 2002). Results

reported by Miller and Simpson (1991, as cited in Archer, 2002) indicated that both male and female college students tended to minimize aggression perpetrated by females and that males felt more at risk of being sanctioned for physical aggression toward a partner than did women.

Partial support was obtained for the prediction that flashpoint intensity would vary as a function of condition. Participants in the Decreasing Provocation condition, who received 7 ounces of juice on Trial 2, followed by 5 ounces, 3 ounces, and 1 ounce, poured more juice on the flashpoint trial than those in the Increasing Provocation condition, who received increasing amounts of juice beginning with 1 ounce and ending with 7 ounces. Although comparisons between the other conditions did not reach statistical significance, mean difference comparisons also suggested that participants in the High Provocation condition tended to respond with increased aggression on their flashpoint trial when compared with individuals in the Low and Increasing Provocation conditions. Thus, higher levels of initial provocation during a conflict may in fact elicit a more intense, initial aggressive reaction from one's partner.

Flashpoint intensity was positively correlated with flashpoint latency. That is, the longer an individual delayed his or her aggressive response, the greater the degree of aggression he or she displayed when they retaliated. This is an interesting finding, as Zeichner, Frey, et al. (2003) reported that the ability to delay aggression was related to lower flashpoint aggression, which they suggested represented participants' hesitancy to become aggressive. However, participants in that study were not exposed to varying levels of provocation and were responding to provocation from a stranger, not from a partner. Additionally, participants in the Zeichner, Frey, et al. (2003) study may have

been more impacted by social sanction, as they could view their opponent while they were giving and receiving shocks. The present findings suggest that participants may have experienced growing anger or frustration while remaining passive in the face of provocation from their partners, which culminated in an aggressive retaliation.

Flashpoint intensity was also positively correlated with overall aggression. In other words, individuals who were aggressive at flashpoint also tended to sustain high levels of aggression toward their partners. This is consistent with findings by Zeichner, Frey, et al. (2003), who concluded that it is not surprising that highly aggressive individuals would flash at high aggression. This finding is also consistent with the literature on couple aggression, which indicates that aggressive and emotionally reactive partners tend to respond aversively to conflict and are less likely to engage in behaviors that might facilitate a resolution once aggression is activated (Burman et al., 1993; Cordova, et al., 1993).

Although predictions were not made with regard to gender differences and flashpoint intensity, results showed no significant differences between the amounts of juice poured by men and women on the flashpoint trial. Therefore, once they had made the decision to retaliate, men and women aggressed at similar levels in their first aggressive reaction. This finding is contrary to results reported by Zeichner, Frey, et al. (2003) in which men demonstrated higher flashpoint intensity than females. These results lend support to the argument that the occurrence of common couple violence is gender symmetric and underscore the need for additional laboratory studies of couple aggression.

Summary of Aggression Across Trials Results

Partial support was found for the prediction that participants would respond in kind to the amount of provocation received. A significant interaction effect was obtained between condition and trial with regard to the amount of aggression displayed.

Comparisons between trials were first analyzed. As was reported by Imbraguglio (2005), significant differences were not found between conditions with regard to the amount of juice poured on Trial 1, the trial of unprovoked aggression. This result was expected, as participants' experiences, regardless of condition, did not differ on Trial 1. Significant differences similar to those found by Imbraguglio were obtained on Trial 2. Participants in the Decreasing Provocation condition poured significantly more juice on Trial 2 than participants in the Low Provocation and Increasing Provocation conditions, but responded similarly to participants in the High Provocation condition, who were subject to the same amount of provocation. Unlike Imbraguglio's findings, significant differences in aggression between conditions were not detectable after the second trial. This discrepancy is likely due to the fact that participants in the current study were not forced to engage in an aggressive response during each trial, as the option of refraining from aggressing was provided. Therefore, mean aggression levels may have been deflated by results of individuals who refrained from retaliation on a particular trial.

Patterns of aggression were further analyzed within each condition by comparing how participants in the varying provocation conditions responded on each trial.

Participants in the Low Provocation condition poured similar amounts of bad juice on each trial. As the provocation level remained consistently low for these participants, it is not surprising that significant differences were not found in their pattern of responding

across trials. Participants in the Increasing Provocation condition poured significantly more juice on the last trial, Trial 5, than they did on Trials 1, 2, and 3. They poured similar amounts of juice on Trials 4 and 5. This finding suggests that individuals who were subject to gradually increasing levels of provocation may have reached a “breaking point” and taken advantage of their final opportunities to aggress. An opposite trend was observed in the Decreasing Provocation condition. Participants poured significantly more juice on trial 2 than on all other trials. Thus, after an immediate, considerably aggressive reaction to the high level of provocation they received on Trial 2, participants in the Decreasing Provocation condition began to respond in kind to the gradual withdrawal of provocation. Finally, participants in the High Provocation poured similar amounts of bad juice on Trials 2 and 5, which were significantly greater than the amount they poured on Trial 1. However, after Trial 1, participants in the High Provocation condition received a consistently high level of provocation and poured similar amounts of bad juice during Trials 2 through 5.

As predicted, no gender differences emerged with regard to overall aggression levels. This finding is supported by the literature reviewed earlier, which suggests that couple violence in community samples tended to be characterized by reciprocal, low-level acts of aggression, as opposed to intimate terrorism which is predominately perpetrated by men.

Summary of Findings on Temperament Variables

This study represents the first known study of couple aggression to examine the constructs of irritability and emotional susceptibility. Hypotheses regarding the relationship between trait irritability and aggression were supported. The greater the

degree of irritability reported by a participant, the more juice he or she poured on the flashpoint trial and over the course of the experiment. These results are similar to those reported in non-couple studies of provoked aggression (Caprara, 1982; Caprara et al., 1983). Individuals high in irritability may be quick to anger and report an increased tendency to respond impulsively and demonstrate offensive behaviors in response to provocation (Caprara et al., 1983). Therefore, it is not surprising that participants high in irritability flashed at high aggression and continued to display high levels of aggression when provoked.

Additionally, as predicted, a higher degree of emotional susceptibility was also related to increased levels of overall aggression, though emotional susceptibility was not significantly related to flashpoint aggression. Individuals high in emotional susceptibility may feel powerless and become easily distressed in the face of provocation (Caprara et al., 1983). Caprara et al. (1983) reported that these individuals might act more defensively when threat is perceived. However, studies of couple aggression have demonstrated a significant relationship between a heightened sense of threat and the use of aggression in relationships (Hammock & O'Hearn, 2002). In the current study, although individuals high in emotional susceptibility may not have flashed at high levels, their increased aggression levels over the course of the experiment may have represented an attempt to obtain a sense of control and minimize anxiety in the midst of a conflictual interaction with their partners.

Hypotheses predicting that scores on a measure of trait anger would be positively related to aggression were not supported. However, overall aggression was correlated with state anger scores, or participants' current emotional states at the time of the

manipulation. Thus, aggressive responses in the current study may have resulted from emotional reactivity triggered by the manipulation, as opposed to more pervasive feelings of anger. This finding underscores the importance of looking at situational variables and highlights the limitations of relying solely on self-report data when studying the occurrence of couple aggression. Additionally, the literature on intimate partner abuse has reported high levels of trait anger in samples of abusive spouses (e.g., Beasley & Stoltenberg, 1992; Feldbau-Kohn et al., 2001). Thus, the relationship between trait anger and aggression may not have been found in the current study due to the fact that the couples were recruited from a sample of college students, as opposed to a clinical sample.

Summary of Investment Model Findings

Contrary to expectations, hypotheses predicting a relationship between aggression and investment model variables were not supported. It was predicted that greater levels of relationship commitment would be associated with delay of aggression and decreased flashpoint intensity, thus demonstrating a participant's willingness to accommodate to their partner's provocation. Flashpoint behavior and overall aggression were not related to levels of relationship satisfaction, commitment level, investment level, or quality of relationship alternatives. Several conclusions may be drawn from these findings. First, as discussed by Rusbult et al. (1991), willingness to accommodate is a complex phenomenon that is influenced by individual and relationship variables beyond those measured in the current study, such as partner perspective taking, egocentricity, self-esteem, sex-role orientation, etc. Additionally, accommodation may take different forms depending on the individual and relationship factors at play. For example, in response to provocation from one's partner, one might accommodate by shrugging it off, forgiving

his or her partner, attempting to make up, etc. (Rusbult et al., 1991). In the current experiment, for example, a partner may have poured a large amount of juice on the flashpoint trial, but then accommodated by decreasing subsequent pours.

Additionally, research has suggested that some couples may report the presence of violence despite high levels of relationship satisfaction (Christopher & Lloyd, 2000). Furthermore, although a partner may generally take an accommodative stance in his or her relationship, the current study may only be generalizable to one conflictual situation. Thus, the experimental manipulation created in the current study may not have adequately assessed the complexity of the various factors related to one's willingness to accommodate.

Some methodological limitations may also have been related to a failure to find support for the investment model hypotheses. First, a measure of one's willingness to accommodate was not included in the current study. Recent research has shown that questionnaire-reported accommodation predicted relationship accommodation as described in participants' diary entries over the course of two weeks (Overall & Sibley, 2010). Results from this type of measure would have allowed for comparisons between one's general willingness to accommodate and typical accommodating behaviors and the behaviors displayed during the experiment. Second, the majority of partners had been dating for one year or less. Thus, the measurement of variables such as commitment and investment level may have been affected as most partners were in the early stages of relationship development. Finally, Rusbult et al. (1991) posited that willingness to accommodate is accompanied by a shift from considering one's own needs to engaging in pro-relationship behaviors, such as considering the needs of one's partner. It may be

possible that, because partners in the current study were not face-to-face while choosing whether to respond to provocation, this pro-relationship transformation may have been impeded due to decreased accountability.

Summary of Prior Relationship Aggression Findings

Contrary to expectations, flashpoint behavior was not predicted by a partner's report of previous relationship aggression. However, the more negative relationship behaviors a participant reported, the more overall aggression he or she displayed during the course of the experiment. This correlation between self-report and aggressive behavior in the current study suggests that the bad juice paradigm is a valid method for measuring couple aggression. Being the victim of previous intimate partner aggression was not associated with retaliation response latency, flashpoint trial aggression levels, or overall aggression. However, self-report of one's own negative relationship behaviors was related to Trial 1 aggression levels. That is, participants displayed more unprovoked aggression on the first trial to the extent that they reported perpetrating aggressive relationship behaviors. This finding is consistent with results reported by Imbraguglio (2005), who concluded that participants displayed behavior consistent with their previous relationship behaviors even before they knew whether their partner would act aggressively.

Interestingly, higher levels of Trial 1 aggression were also related to increased reports of one's partner's negative relationship behaviors. In other words, participants were more likely to aggress without provocation to the extent that they had been the recipients of their partners' negative behaviors. Therefore, participants may have drawn on their previous relationship experiences and acted aggressively in anticipation of an

aggressive response from their partner. These findings, in conjunction with a strong correlation between one's own and one's partner's negative relationship behaviors, provide further support for the mutuality of common couple aggression. Additionally, they underline the significance of a couple's history of aggressive behaviors and suggest that, over the course of a relationship, aggressive responding is likely to stay consistent, if not escalate.

Summary of Post-Manipulation Findings

After the fifth trial, participants were asked to report their impressions of the experiment and their feelings toward their partners. Compared to male participants, female participants found the taste of the bad juice more aversive and reported that their behavior was influenced to a greater degree by the amount of juice they received. Given these findings, it is not surprising that the following gender differences emerged with regard to participants' feelings toward their partners after the experiment. In general, female participants reported liking their partners less than male participants. Female participants also felt angrier with and more wronged by their partners than did male participants.

Feelings toward one's partner also varied as a function of condition. Participants who received smaller amounts of juice on the last trial (Low and Decreasing Provocation conditions) reported liking their partners more than those who received increasing amounts of juice and ended with a large amount (Increasing Provocation condition). Additionally, even though participants in the Decreasing Provocation condition initially received large amounts of juice, they reported liking their partners more and feeling less wronged by their partners than individuals who received high amounts of juice on every

trial. Those who received consistently high or increasing amounts of juice also reported increased feelings of anger as compared to individuals who received decreasing amounts of juice. Thus, it appears as though a recency effect emerged with regard to provocation – aggression received at the end of the experiment may have been more salient when partners assessed their feelings for each other, regardless of earlier levels of provocation. Taken together with the literature on patterns of relationship conflict, these findings suggest that withdrawal of aggression during a conflict may serve to evoke more positive feelings in one's partner and move the dispute toward a resolution.

Partners' feelings of trust also varied by condition. After the fifth trial, participants in the Low Provocation condition reported trusting their partners more than participants in the High Provocation condition. Levels of trust did not differ amongst participants in the other conditions. Wieselquist, Rusbult, Foster, and Agnew (1999) characterized trust as a reflection of one's relationship commitment and compassionate intentions. They further posited that trust might be a gauge of a partner's motivation to act on behalf of the interests of his or her relationship, as opposed to acting on behalf of self-interest. In their study of pro-relationship behavior and trust, Wieselquist et al. (1999) found that perceived partner accommodation was associated with increased feelings of trust. These results mirror those obtained in the current study, as participants who perceived that their partner had acted in a benevolent manner reported higher levels of trust. In contrast, those who received consistently high amounts of juice reported significantly lessened feelings of trust.

With regard to love, which may be considered a more stable, less state-dependent emotion, a gender by condition interaction emerged. Men's reports of love for their

partners were not affected by condition. However, women who received increasing amounts of juice over the course of the experiment rated their love for their partners lower than those who received decreasing amounts of juice as the trials progressed. Interestingly, Imbraguglio (2005) did not find gender or condition effects for post-experiment love. However, participants in that study did not have the option to refrain from aggressive behavior. Women in the current study in the Increasing Provocation condition were aware that their partners could have opted not to aggress, found the juice to be more aversive than men, and were subject to escalating aggressive responses from their partners. In contrast with women whose partners initiated a withdrawal of aggression, for these women, the Increasing Provocation condition may have triggered significantly negative feelings toward their partners. When applying these results to real-life occurrences of couple aggression, it may be concluded that escalating conflicts that involve increasing levels of aggression may significantly threaten the foundation of one's relationship.

Methodological Limitations

Several methodological limitations of the current study should be noted. Due to the fact that this experiment was conducted with college students, the sample was somewhat homogeneous with regard to age, cultural background, and relationship duration. As a result, the generalizability of these findings to non-student couples may be limited. A more diverse sample of participants would be needed to obtain a comprehensive understanding of the interplay of individual and relationship variables with regard to the occurrence of couple aggression. Additionally, the bad juice paradigm had been implemented with students from the College of William & Mary during the two

years preceding this study. Thus, some participants may have had prior knowledge of the purpose of the study.

Experimental research is necessarily limited with regard to the ability to generalize results to real-life phenomena. The current study attempted to approximate a realistic couple dispute during which partners could decide whether to retaliate in the face of provocation. However, participants were told that they would be choosing the beverages for their partners in an attempt to avoid experimenter bias. Thus, participants may have been somewhat influenced to pour bad juice on at least some of the trials in order to contribute to the researcher's results. Also, after the initial introductory phase of the study, each partner was led to a separate room where they participated in the experiment. Separating the members of each couple was necessary in order to execute the manipulation; however, this design limits the paradigm's generalizability to a realistic argument. Partners were unable to observe each other's nonverbal cues, which often contribute to the dynamics of a conflict. Additionally, the degree of anonymity afforded participants may have impacted their decisions to aggress.

Conclusions

The current study contributes to the research on common couple aggression in several ways. Methodologically, it provides additional validation of the bad juice paradigm as a procedure for measuring partner aggression. As the majority of research on couple aggression has relied on self-report data, there is a need for laboratory studies that allow for direct observation of aggressive relationship behaviors. Additionally, this was the first study of couple aggression to utilize the response choice paradigm

developed by Zeichner and colleagues (1999), thereby creating a more realistic laboratory paradigm than those used in previous experimental studies of couple aggression.

Several theoretical implications that enhance the understanding of common couple aggression can be derived from the current findings. First, the study provided support for the theory that mutual, low-level aggression is a common occurrence amongst intimate partners. Fewer than 10% of participants refrained from aggressing toward their partners, and men and women aggressed at similar levels. However, gender differences emerged with regard to the decision to respond to provocation. Even though women delayed aggressive responding longer than men, a greater percentage of men chose to refrain from retaliation altogether. Although these results would need to be replicated with larger, more diverse samples to make formal conclusions, this finding lends support to the idea that a cultural norm disapproving of male to female violence may impact the dynamics of common couple aggression. Furthermore, when compared to female participants, male participants reported more positive post-experiment feelings toward their partners, and their feelings of love were not impacted by provocation. This finding suggests that men may have been more tolerant of aggression from their partners and were able to maintain positive feelings toward their partners despite having been the recipients of aggression. Future research might incorporate qualitative or quantitative measures to assess differences in male and female perceptions of common couple aggression.

Interesting trends emerged in the data that have implications for clinical interventions with couples. First, results suggested that high, initial levels of aggression may be associated with sustained aggression for the duration of the conflict.

Furthermore, an immediate aggressive response at the start of a conflict appears to elicit a strong aggressive response from one's partner. Thus, conflicts may quickly escalate at the first sign of aggressive or defensive behavior from one's partner. For couples, this finding underscores the importance of practicing communication skills and actively working to deescalate a conflict in order to prevent the occurrence of violence. On a more positive note, it appears as though one partner's withdrawal of aggression during a conflict may elicit more positive behaviors from his or her partner and restore positive feelings for one's partner and one's relationship. Therefore, if couples are aware of these tendencies, a window of opportunity may exist within which serious escalation of aggression may be prevented.

Emerging theories of intimate partner violence have pointed to the need to move beyond simplistic, patriarchal explanations of couple aggression to account for the mutual and systemic nature of partner violence (Hamel, 2009). A more comprehensive understanding of partner violence calls for greater sensitivity to the diversity of intimate partner violence in clinical settings. For example, research indicating that female-perpetrated intimate partner violence may be minimized despite the fact that it appears to occur at rates similar to male-perpetrated violence suggests that the impact of abuse on male victims may also be underestimated. As discussed by Hamel (2009), the overall effects of partner abuse are similar for both genders, but clinical services addressing the needs of male victims are scarce.

More research is needed to explore the complex relationships between individual, interactional, and situational variables that impact the occurrence and course of relationship aggression. The response choice paradigm offers an exciting opportunity to

examine these variables in a laboratory setting that closely approximates a realistic dispute. As discussed by Zeichner et al. (1999), future research might further explore factors that contribute to a participant's decision to switch from a passive to an active stance, and vice versa, with regard to responding to provocation. For couples, one such factor might be consideration of future consequences. It would be interesting to assess the degree to which partners remain mindful of their relationship goals and consider the long-term impact of their behaviors when responding to provocation. Moreover, assessing participants' changes in affect during the course of a dispute would provide insight into factors that mediate their decisions to aggress. In addition to self-report measures of participants' mood states, observation of facial affect would provide additional data with regard to participants' reactions to provocation.

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APPENDIX A

SOPAS: SUBTLE AND OVERT PSYCHOLOGICAL ABUSE OF WOMEN SCALE ("PARTNER ASSESSMENT FORM – WOMEN")

0	1	2	3	4	5
Never	Once				Many times

Most of these things happen in all relationships. These are things your partner may do in a loving, joking or serious way. Choose a number from the above scale to show how often he does each thing.

HOW OFTEN DOES HE...

- _____ play games with your head
- _____ act like he knows what you did when he wasn't around
- _____ blame you for him being angry or upset
- _____ change his mind but not tell you until it's too late
- _____ discourage you from having interests that he isn't part of
- _____ do or say something that harms your self-respect or your pride in yourself
- _____ encourage you to do something then somehow make it difficult to do it
- _____ belittle, find fault or put down something you were pleased with or felt good about
- _____ get more upset than you are when you tell him how you feel
- _____ make you feel bad when you did something he didn't want you to do
- _____ make you feel like nothing you say will have an effect on him
- _____ make you choose between something he wants and something you want or need
- _____ say or do something that makes you feel unloved or unlovable
- _____ make you worry about whether you could take care of yourself
- _____ make you feel guilty about something you have done or have not done

IN A LOVING, JOKING OR SERIOUS WAY, HOW OFTEN DOES HE...

- _____ use things you've said against you, like if you say you made a mistake, how often does he use that against you later
- _____ make you worry about your emotional health and well-being
- _____ make you feel like you have to fix something he did that turned out badly
- _____ put himself first, not seeming to care what you want
- _____ get you to question yourself, making you feel insecure or less confident
- _____ remind you of times he was right and you were wrong
- _____ say his actions, which hurt you, are good for you or will make you a better person
- _____ say something that makes you worry about whether you're going crazy
- _____ act like he owns you
- _____ somehow make you feel worried or scared even if you're not sure why
- _____ somehow make it difficult for you to go somewhere or talk to someone

- _____ somehow keep you from having time for yourself
- _____ act like you over-react or get too upset
- _____ get upset when you did something he didn't know about
- _____ tell you the problems in your relationship are your fault
- _____ interrupt or sidetrack you when you're doing something important
- _____ blame you for his problems
- _____ try to keep you from showing what you feel
- _____ try to keep you from doing something you want to do or have to do
- _____ try to convince you something was like he said when you know that isn't true

APPENDIX B

SOPAS: SUBTLE AND OVERT PSYCHOLOGICAL ABUSE OF MEN SCALE ("PARTNER ASSESSMENT FORM – MEN")

0	1	2	3	4	5
Never	Once				Many times

Most of these things happen in all relationships. These are things your partner may do in a loving, joking or serious way. Choose a number from the above scale to show how often she does each thing.

HOW OFTEN DOES SHE...

- ___ play games with your head
- ___ act like she knows what you did when she wasn't around
- ___ blame you for her being angry or upset
- ___ change her mind but not tell you until it's too late
- ___ discourage you from having interests that she isn't part of
- ___ do or say something that harms your self-respect or your pride in yourself
- ___ encourage you to do something then somehow make it difficult to do it
- ___ belittle, find fault or put down something you were pleased with or felt good about
- ___ get more upset than you are when you tell her how you feel
- ___ make you feel bad when you did something she didn't want you to do
- ___ make you feel like nothing you say will have an effect on her
- ___ make you choose between something she wants and something you want or need
- ___ say or do something that makes you feel unloved or unlovable
- ___ make you worry about whether you could take care of yourself
- ___ make you feel guilty about something you have done or have not done

IN A LOVING, JOKING OR SERIOUS WAY, HOW OFTEN DOES SHE...

- ___ use things you've said against you - like if you say you made a mistake, how often does she use that against you later
- ___ make you worry about your emotional health and well-being
- ___ make you feel like you have to fix something she did that turned out badly
- ___ put herself first, not seeming to care what you want
- ___ get you to question yourself, making you feel insecure or less confident
- ___ remind you of times she was right and you were wrong
- ___ say her actions, which hurt you, are good for you or will make you a better person
- ___ say something that makes you worry about whether you're going crazy
- ___ act like she owns you
- ___ somehow make you feel worried or scared even if you're not sure why
- ___ somehow make it difficult for you to go somewhere or talk to someone
- ___ somehow keep you from having time for yourself

- ___ act like you over-react or get too upset
- ___ get upset when you did something she didn't know about
- ___ tell you the problems in your relationship are your fault
- ___ interrupt or sidetrack you when you're doing something important
- ___ blame you for her problems
- ___ try to keep you from showing what you feel
- ___ try to keep you from doing something you want to do or have to do
- ___ try to convince you something was like she said when you know that isn't true

APPENDIX C

COMBINED CTS-2 & SVAW/MS ("RELATIONSHIP BEHAVIORS")

No matter how well a couple gets along, there are times when partners disagree, get annoyed with each other, want different things from each other, or just have spats or fights because they are in a bad mood, are tired, or for some other reason. Couples also have many different ways of trying to settle their differences. Below is a list of things that might happen when you and your partner have differences. If you are currently in a relationship and have been in this relationship for a year or more, please write how many times you and your partner did each of these things **in the past year**. If this is not the case, please estimate for either your current relationship or your most recent relationship (if you are not currently involved) how many times you and your partner did or would typically do these things in the past year or during a one year period. If you or your current partner did not do one of these things during your relationship with each other, but it has happened before in another relationship, write "7."

How often did/would this happen?

- 0 = this has never happened in my current relationship
- 1 = once in my current relationship
- 2 = twice in my current relationship
- 3 = 3-5 times in my current relationship
- 4 = 6-10 times in my current relationship
- 5 = 11-20 times in my current relationship
- 6 = more than 20 times in my current relationship
- 7 = not in my current relationship, but it did happen in a previous relationship

- ___ 1. I showed my partner I cared even though we disagreed.
- ___ 2. My partner showed me he or she cared even though we disagreed.
- ___ 3. I explained my side of a disagreement to my partner.
- ___ 4. My partner explained his or her side of a disagreement to me.
- ___ 5. I insulted or swore at my partner.
- ___ 6. My partner insulted or swore at me.
- ___ 7. I threw something at my partner that could hurt.
- ___ 8. My partner threw something at me that could hurt.
- ___ 9. I hit or kicked a wall, door or furniture.*
- ___ 10. My partner hit or kicked a wall, door or furniture.*
- ___ 11. I twisted my partner's arm or hair.
- ___ 12. My partner twisted my arm or hair.
- ___ 13. I had a sprain, bruise, or small cut because of a fight with my partner.
- ___ 14. My partner had a sprain, bruise, or small cut because of a fight with me.
- ___ 15. I showed respect for my partner's feelings about an issue.
- ___ 16. My partner showed respect for my feelings about an issue.

- ___ 17. I threw, smashed or broke an object.*
- ___ 18. My partner threw, smashed, or broke an object.*
- ___ 19. I pushed or shoved my partner.
- ___ 20. My partner pushed or shoved me.
- ___ 21. I used a knife or gun on my partner.
- ___ 22. My partner used a knife or gun on me.
- ___ 23. I passed out from being hit on the head by my partner in a fight.
- ___ 24. My partner passed out from being hit on the head by me in a fight.
- ___ 25. I called my partner fat or ugly.
- ___ 26. My partner called me fat or ugly.
- ___ 27. I drove dangerously with my partner in the car.*
- ___ 28. My partner drove dangerously with me in the car.*
- ___ 29. I punched or hit my partner with something that could hurt.
- ___ 30. My partner punched or hit me with something that could hurt.
- ___ 31. I destroyed something belonging to my partner.
- ___ 32. My partner destroyed something belonging to me.
- ___ 33. I went to a doctor because of a fight with my partner.
- ___ 34. My partner went to a doctor because of a fight with me.
- ___ 35. I made threatening gestures or faces at my partner.*
- ___ 36. My partner made threatening gestures or faces at me.*
- ___ 37. I choked my partner.
- ___ 38. My partner choked me.
- ___ 39. I shouted or yelled at my partner.
- ___ 40. My partner shouted or yelled at me.
- ___ 41. I slammed my partner against a wall.
- ___ 42. My partner slammed me against a wall.
- ___ 43. I said I was sure we could work out a problem.
- ___ 44. My partner said he or she was sure we could work out a problem.
- ___ 45. I threatened to kill myself.*
- ___ 46. My partner threatened to kill him/herself.*
- ___ 47. I needed to see a doctor because of a fight with my partner, but I didn't.
- ___ 48. My partner needed to see a doctor because of a fight with me, but didn't.
- ___ 49. I beat up my partner.
- ___ 50. My partner beat me up.
- ___ 51. I grabbed my partner.
- ___ 52. My partner grabbed me.
- ___ 53. I threatened to kill my partner.*
- ___ 54. My partner threatened to kill me.*
- ___ 55. I stomped out of the room or house or yard during a disagreement.
- ___ 56. My partner stomped out of the room or house or yard during a disagreement.
- ___ 57. I slapped my partner.
- ___ 58. My partner slapped me.
- ___ 59. I had a broken bone from a fight with my partner.
- ___ 60. My partner had a broken bone from a fight with me.
- ___ 61. I suggested a compromise to a disagreement.
- ___ 62. My partner suggested a compromise to a disagreement.

- 63. I shook my partner.*
- 64. My partner shook me.*
- 65. I burned or scalded my partner on purpose.
- 66. My partner burned or scalded me on purpose.
- 67. I accused my partner of being a lousy lover.
- 68. My partner accused me of being a lousy lover.
- 69. I did something to spite my partner.
- 70. My partner did something to spite me.
- 71. I threatened to harm or damage things my partner cares about.*
- 72. My partner threatened to harm or damage things I care about.*
- 73. I threatened to hit or throw something at my partner.
- 74. My partner threatened to hit or throw something at me.
- 75. I felt physical pain that still hurt the next day because of a fight we had.
- 76. My partner felt physical pain that still hurt the next day because of a fight we had.
- 77. I kicked my partner.
- 78. My partner kicked me.
- 79. I agreed to try a solution to a disagreement my partner suggested.
- 80. My partner agreed to try a solution to a disagreement I suggested.
- 81. I threatened someone my partner cares about.*
- 82. My partner threatened someone I care about.*

*Items from the SVAW/MS. All unmarked items are originally from the CTS-2.

APPENDIX D

INVESTMENT MODEL SCALE ("RELATIONSHIP ASSESSMENT INVENTORY")

Satisfaction Level Facet and Global Items

1. Please indicate the degree to which you agree with each of the following statements regarding your current relationship (circle an answer for each item).

(a) My partner fulfills my needs for intimacy (sharing personal thoughts, secrets, etc.)	Don't Agree At All	Agree Slightly	Agree Moderately	Agree Completely
(b) My partner fulfills my needs for companionship (doing things together, enjoying each other's company, etc.)	Don't Agree At All	Agree Slightly	Agree Moderately	Agree Completely
(c) My partner fulfills my sexual needs (holding hands, kissing, etc.)	Don't Agree At All	Agree Slightly	Agree Moderately	Agree Completely
(d) My partner fulfills my needs for security (feeling trusting, comfortable in a stable relationship, etc.)	Don't Agree At All	Agree Slightly	Agree Moderately	Agree Completely
(e) My partner fulfills my needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.)	Don't Agree At All	Agree Slightly	Agree Moderately	Agree Completely

2. I feel satisfied with our relationship (please circle a number).

0	1	2	3	4	5	6	7	8
Do Not Agree At All				Agree Somewhat				Agree Completely

3. My relationship is much better than others' relationships.

0	1	2	3	4	5	6	7	8
Do Not Agree At All				Agree Somewhat				Agree Completely

4. My relationship is close to ideal.

0	1	2	3	4	5	6	7	8	
Do Not Agree At All				Agree Somewhat				Agree Completely	

5. Our relationship makes me very happy.

0	1	2	3	4	5	6	7	8	
Do Not Agree At All				Agree Somewhat				Agree Completely	

6. Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

0	1	2	3	4	5	6	7	8	
Do Not Agree At All				Agree Somewhat				Agree Completely	

Quality of Alternatives Facet and Global Items

1. Please indicate the degree to which you agree with each statement regarding the fulfillment of each need in alternative relationships (e.g., by another dating partner, friends, family).

- | | | | | |
|---|-----------------------|-------------------|---------------------|---------------------|
| (a) My needs for intimacy (sharing personal thoughts, secrets, etc.) could be fulfilled in alternative relationships | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (b) My needs for companionship (doing things together, enjoying each other's company, etc.) could be fulfilled in alternative relationships | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (c) My sexual needs (holding hands, kissing, etc.) could be fulfilled in alternative relationships | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (d) My needs for security (feeling trusting, comfortable in a stable relationship, etc.) could be fulfilled in alternative relationships | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |

(e) My needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.) could be fulfilled in alternative relationships

Don't Agree At All Agree Slightly Agree Moderately Agree Completely

2. The people other than my partner with whom I might become involved are very appealing (please circle a number).

0 1 2 3 4 5 6 7 8
Do Not Agree Agree Agree
At All Somewhat Completely

3. My alternatives to our relationship are close to ideal (dating another, spending time with friends or on my own, etc.).

0 1 2 3 4 5 6 7 8
Do Not Agree Agree Agree
At All Somewhat Completely

4. If I weren't dating my partner, I would do fine-I would find another appealing person to date.

0 1 2 3 4 5 6 7 8
Do Not Agree Agree Agree
At All Somewhat Completely

5. My alternatives are attractive to me (dating another, spending time with friends or on my own, etc.).

0 1 2 3 4 5 6 7 8
Do Not Agree Agree Agree
At All Somewhat Completely

6. My needs for intimacy, companionship, etc., could easily be fulfilled in an alternative relationship.

0 1 2 3 4 5 6 7 8
Do Not Agree Agree Agree
At All Somewhat Completely

Investment Size Facet and Global Items

1. Please indicate the degree to which you agree with each of the following statements regarding your current relationship (circle an answer for each item).

- | | | | | |
|---|-----------------------|-------------------|---------------------|---------------------|
| (a) I have invested a great deal of time in our relationship | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (b) I have told my partner many private things about myself (I disclose secrets to him/her) | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (c) My partner and I have an intellectual life together that would be difficult to replace | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (d) My sense of personal identity (who I am) is linked to my partner and our relationship | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |
| (e) My partner and I share many memories | Don't Agree
At All | Agree
Slightly | Agree
Moderately | Agree
Completely |

2. I have put a great deal into our relationship that I would lose if the relationship were to end (please circle a number).

0	1	2	3	4	5	6	7	8
Do Not Agree At All				Agree Somewhat				Agree Completely

3. Many aspects of my life have become linked to my partner (recreational activities, etc.), and I would lose all of this if we were to break up.

0	1	2	3	4	5	6	7	8
Do Not Agree At All				Agree Somewhat				Agree Completely

4. I feel very involved in our relationship-like I have put a great deal into it.

0	1	2	3	4	5	6	7	8
Do Not Agree At All				Agree Somewhat				Agree Completely

5. My relationships with friends and family members would be complicated if my partner and I were to break up (e.g., partner is friends with people I care about).

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

6. Compared to other people I know, I have invested a great deal in my relationship with my partner.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

Commitment Level Items

1. I want our relationship to last for a very long time (please circle a number).

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

2. I am committed to maintaining my relationship with my partner.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

3. I would not feel very upset if our relationship were to end in the near future.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

4. It is likely that I will date someone other than my partner within the next year.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

5. I feel very attached to our relationship-very strongly linked to my partner.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

6. I want our relationship to last forever.

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Do Not Agree At All				Agree Somewhat				Agree Completely

7. I am oriented toward the long-term future of my relationship (for example, I imagine being with my partner several years from now).

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Do Not Agree At All				Agree Somewhat				Agree Completely

APPENDIX E

STATE-TRAIT ANGER SCALE ("SELF-EVALUATION QUESTIONNAIRE")

A number of statements which people have used to describe themselves are given below. Read each statement and then write the appropriate number to the left of each item to indicate the *intensity of your feelings right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to describe your present feelings best.

1	2	3	4
Not at all	Somewhat	Moderately so	Very much so

- ___ 1. I am furious.
- ___ 2. I feel angry.
- ___ 3. I feel like banging on the table.
- ___ 4. I feel like yelling at somebody.
- ___ 5. I feel like breaking things.
- ___ 6. I am mad.
- ___ 7. I feel irritated.
- ___ 8. I feel like hitting someone.
- ___ 9. I am burned up.
- ___ 10. I feel like swearing.

A number of statements which people have used to describe themselves are given below. Read each statement and then write the appropriate number to the left of each item to indicate how you *generally* feel.

1	2	3	4
Almost Never	Sometimes	Often	Almost Always

- ___ 1. I have a fiery temper.
- ___ 2. I am quick-tempered.
- ___ 3. I am a hotheaded person.
- ___ 4. I fly off the handle.
- ___ 5. I feel infuriated when I do a good job and get a poor evaluation.
- ___ 6. It makes me furious when I am criticized in front of others.
- ___ 7. I feel annoyed when I am not given recognition for doing good work.
- ___ 8. I get angry when I'm slowed down by others' mistakes.
- ___ 9. When I get mad, I say nasty things.
- ___ 10. When I get frustrated I feel like hitting someone.

APPENDIX F

IRRITABILITY & EMOTIONAL SUSCEPTIBILITY SCALES ("PERSONAL RESPONSES SCALE")

Read each statement and then write the appropriate number to the left of each item to indicate the degree to which these statements generally describe you.

0	1	2	3	4	5
completely false for me	most times false for me	sometimes false for me	sometimes true for me	most times true for me	completely true for me

Irritability Scale

- _____ 1. I easily fly off the handle with those who don't listen or understand.
- _____ 2. I am often in a bad mood.
- _____ 3. Usually when someone shows a lack of respect for me, I let it go by.
- _____ 4. I have never been touchy.
- _____ 5. It makes my blood boil to have somebody make fun of me.
- _____ 6. I think I have a lot of patience.
- _____ 7. When I am irritated, I need to vent my feelings immediately.
- _____ 8. When I am tired, I easily lose control.
- _____ 9. I think I am rather touchy.
- _____ 10. When I am irritated, I can't tolerate discussions.
- _____ 11. I could not put anyone in his or her place, even if it were necessary.
- _____ 12. I can't think of any good reason for resorting to violence.
- _____ 13. I often feel like a powder keg ready to explode.
- _____ 14. I seldom strike back even if someone hits me first.
- _____ 15. I can't help being a little rude to people I don't like.
- _____ 16. Sometimes when I am angry I lose control over my actions.
- _____ 17. I do not know of anyone who would wish harm to me.
- _____ 18. Sometimes I really want to pick a fight.
- _____ 19. I do not like to make practical jokes.
- _____ 20. When I am right, I am right.
- _____ 21. I never get mad enough to throw things.
- _____ 22. When someone raises his or her voice, I raise mine higher.
- _____ 23. Sometimes people bother me just by being around.
- _____ 24. Some people irritate me if they just open their mouth.
- _____ 25. Sometimes I shout, hit, and kick and let off steam.
- _____ 26. I don't think I am a very tolerant person.
- _____ 27. Even when I am very irritated, I never swear.
- _____ 28. It is others who provoke my aggression.

- _____ 29. Whoever insults me or my family is looking for trouble.
 _____ 30. It takes very little for things to bug me.

Emotional Susceptibility Scale

- _____ 1. Fear of failure worries me more than necessary.
 _____ 2. I like to be the center of attention.
 _____ 3. I am too sensitive to criticism.
 _____ 4. When I am afraid I completely lose control.
 _____ 5. I often have the feeling others pity me.
 _____ 6. I don't complain about what life has given me.
 _____ 7. I often feel more tired in the morning than when I go to bed.
 _____ 8. I am not afraid of loneliness.
 _____ 9. More than once I have been moved to tears at the movies.
 _____ 10. I easily get involved when someone tells me their troubles.
 _____ 11. Sometimes I feel sad without any reason.
 _____ 12. I have often felt lonely.
 _____ 13. I often feel inadequate.
 _____ 14. I am not scared of the dark.
 _____ 15. Even in emergency situations, I am able to control my reactions.
 _____ 16. I often feel vulnerable and defenseless.
 _____ 17. When I feel low, I cry over nothing.
 _____ 18. When I am waiting for someone, I can't keep still, I pace up and down.
 _____ 19. Sometimes I feel moved over nothing.
 _____ 20. I have always felt challenged by difficult situations.
 _____ 21. Strong emotions nearly paralyze me.
 _____ 22. I can't hold back my tears when someone else tells sad stories.
 _____ 23. Sometimes I cry for no reason.
 _____ 24. I often feel like I can't go on.
 _____ 25. I often feel I am not up to situations.
 _____ 26. I always try to meet new people.
 _____ 27. I feel rather uneasy when someone stares at me.
 _____ 28. I have often felt upset.
 _____ 29. I like new things.
 _____ 30. Sometimes I feel I am about to explode.
 _____ 31. I often feel depressed.
 _____ 32. Sometimes I feel on edge.
 _____ 33. I very seldom lose my temper.
 _____ 34. I feel down when others don't approve of me.
 _____ 35. I often feel tense and nervous.
 _____ 36. My voice trembles when I am very touched.
 _____ 37. I tend to trust others.
 _____ 38. When I am moved, I find it difficult to hold back my tears.
 _____ 39. I have often had the feeling my head was heavy and confused.
 _____ 40. Sometimes I am afraid I will lose control of my feelings.

APPENDIX G

DEMOGRAPHIC DATA SHEET

1. Sex: M F

2. Age: _____

3. Race:

African-American/Black

Asian, Pacific Islander

Caucasian/White

Hispanic

Native American

4. How long have you been dating the person who is here with you today?

_____ months

5. Are you dating this person exclusively?

Yes No

If not, are you dating other people?

Yes No

6. In general, how much do you like your partner?

1	2	3	4	5	6	7
A little						A lot

7. In general, how much do you love your partner?

1	2	3	4	5	6	7
A little						A lot

8. In general, how much do you trust your partner?

1	2	3	4	5	6	7
A little						A lot

APPENDIX H

POST-JUICE FEELINGS QUESTIONNAIRE

1. How difficult were the mazes?

1	2	3	4	5	6	7
Very easy					Very hard	

2. How did your beverage taste?

1	2	3	4	5	6	7
Very bad					Very good	

3. How much were you given to drink?

1	2	3	4	5	6	7
A little					A lot	

4. To what extent do you think that the amount you drank interfered with your performances on the mazes?

1	2	3	4	5	6	7
A little					A lot	

5. To what extent do you think the amount and type of beverage you were given by your partner influenced the amount and type of beverage you poured for your partner?

1	2	3	4	5	6	7
A little					A lot	

For the following questions, please reflect on how you are feeling *right now* and not on how you usually feel.

6. How much do you like your partner right now?

1	2	3	4	5	6	7
A little					A lot	

7. How much do you love your partner right now?

1	2	3	4	5	6	7
A little					A lot	

8. How pleased are you with your partner right now?

1	2	3	4	5	6	7
A little					A lot	

9. How angry are you with your partner right now?

1 2 3 4 5 6 7

A little

A lot

10. How much do you trust your partner right now?

1 2 3 4 5 6 7

A little

A lot

11. How wronged do you feel by your partner right now?

1 2 3 4 5 6 7

A little

A lot

APPENDIX I

VERBATIM SCRIPT

Hello, my name is Claudia Viggiano and I am conducting research for my doctoral dissertation. I need the help of some student couples for research into Intersensory Interference. This study will require you to fill out a few questionnaires as well as to participate in a taste, touch, and vision exercise. Do you have any food allergies? Are you willing to participate? Yes? Then please fill out this consent form and I will explain the procedures in more detail afterwards. You should know that all of your answers to the survey and in the study will be kept anonymous and that you may obtain the results of the study, if you wish, through e-mail. You are also allowed to terminate your participation in the study at any time.

Now I will briefly explain a little more to you about what we are studying. Intersensory Interference, or ISI, is an area of research that involves measuring the influence of one sense on another. For example, what a prick on your arm will do to your sense of sight. Previous research has shown that activating one sense will affect your response on a task involving another sense. Specifically, I am testing the influences that taste and touch have on visual perception. The reason that we have asked you to come in as a couple is so that when we assess the effects of touch, it will be more comfortable to be touched by someone you know than by a stranger. We are going to start with testing the potential effects of taste on vision.

[Lead participants to their separate rooms and casually ask each of them where they met].

There will be five visual tasks to complete. Our research team has developed four different beverages to test the effects of taste on visual perception – one beverage is sweet, one is salty, one is tart, and one is neutral. You and your partner have been randomly assigned *two* of the beverages [point to pitcher "A" and pitcher "B"]. You and your partner were given the same two beverages. Since I will be scoring your

performance on the visual tests, I do not know which two beverages you have here, as I might be influenced if I knew what beverage you drank or even how much. So, to increase the validity of the study I need you to allot some amount of either of the two beverages for your partner. Please taste each beverage and do not tell me what they are. To allot some for your partner, please fill as many of these 1 ounce cups as you wish with one type of beverage and pour them into the red cup. You may choose to pour either one of the beverages on each trial, but please do not mix them, as that would interfere with our results. On each trial, you should also write down the number of small cups that you poured for your partner, as well as whether you poured beverage "A" or beverage "B," on the index card provided. When you are finished, cover the red cup with the foil provided for you. [Researcher leaves, explains process to the partner]

[Researcher returns with predetermined amount of juice and first maze for the participant].

Now that you have finished with the pouring, here is the amount of beverage that was allotted for you by your partner. Before you drink this, I will tell you how I will be scoring you on the visual tests. Your score will be based on how far you get to the completion of a maze, the number of times you depart from the correct solution, and the type of departures that you take. Please be sure to keep your pencil on the paper at all times and do not look ahead. You will be doing five mazes and will have three minutes to complete each one. Okay, please drink the beverage that was allotted for you by your partner and begin the maze. [Researcher retrieves participant's covered cup and starts stop watch; Researcher then leaves to explain the process and bring the predetermined amount of juice and first maze to the participant's partner].

[Researcher returns to participant] You may use these crackers and this water to cleanse your palate. Okay, please determine the type and amount of beverage you will allot for your partner on the next trial. I will be back with the cup from your partner and your next maze in a moment.

[Researcher repeats with partner]

*[Researcher returns to participant with predetermined amount of juice and next maze]
 Here is the amount of beverage that was allotted for you by your partner, as well as your next maze. Please drink the beverage and begin your maze. [Researcher retrieves participant's covered cup and then repeats with partner]
 (Italicized portion will be repeated three more times)*

[After participants pour fifth cup] This part of the study is actually finished now. Before the next section on touch and visual perception, we need to take some time to ensure that the effects of the beverages do not interfere with your sense of touch in the next part of the experiment. Here are some questionnaires to complete while we wait. When you are finished filling them out, please come to the waiting area. [Researcher leaves and explains process to other partner.]

[Researcher waits for both participants to complete questionnaires and return the waiting area].

Debriefing

Okay, this is actually the end of the study. We are not going to be doing any tasks examining the effects of touch on visual perception; I would like to tell you what we are really studying. This study is not actually about sensory interference. As far as we know, no such theory exists. We used that made-up theory as a way to give you varying amounts of the bad tasting juice. We are trying to get a sense of the dynamics of close relationships. In every type of close relationship there is a time in which one partner behaves badly towards the other. For example, we have all said things or done things that have hurt our partner. Previous research on this topic has been survey in nature. Surveys have the problem of self-reporting bias. An example of this would be when a couple gets into an argument and one of them leaves slamming the door. That partner may report the incident in a more appealing manner and not report an accurate representation of what he/she really did. By assessing these relationship dynamics in the lab, we are trying to avoid self-reporting bias.

Part of the goal of this study is to gauge a person's reaction to the bad behavior of his or her partner and to gain an understanding of what might influence your decision to respond in kind. We used the cover of ISI as a means for justifying why you gave the beverage to one another, but we were the ones who actually manipulated how much and what type of beverage was given to each of you. I poured different amounts of the bad tasting beverage myself and gave them to you under the guise that it was from your partner. That way, I could see the way that you reacted to the amount of the bad juice that was given to you. Depending on the amount that I gave you, I measured how much and what type of beverage you poured for your partner on the next trial. We wanted to see at what point and to what extent you may have retaliated in response to your partner's behavior.

Again, I would like to stress to you that I was the one determining how much and what type of beverage you would have to drink. Your partner did not decide this. I poured the tart tasting beverage for both of you. It is understandable if you were angry at your partner, because we designed the study to be that way. However, please do not continue to be angry with your partner, as your partner did not determine how much or what type of beverage you received. Also, your partner has no idea how much or what type of beverage you chose for him or her because he/she never received it – he/she was also getting juice that I poured.

Does this make sense? Did either of you suspect anything at any time during the study? Do you have any questions?

I would like to give you information on the counseling center in case you wish to use their services at a later date. [Present counseling center handout]. The counseling center offers group therapy, couples therapy, and individual therapy and is not tied to your academic record. All participants in this study, even if you are not William and Mary students, will be able to access services at the counseling center should you desire them after this study. You will find the numbers for the counseling center and crisis intervention services on this form.

I have one favor to ask you before you leave. Please do not tell anyone about what this study is really about. If they know about the purpose of the study and that we are allotting the juice, it would likely affect the way they act and our data would be useless. If someone does ask you what you did in this study, please tell them that you completed some mazes and filled out some questionnaires. Okay? Thanks. If there are no more questions, you are both free to leave. Thank you again for your participation.

APPENDIX J**INFORMED CONSENT FORM**

In this study conducted by Claudia Viggiano, under the supervision of Dr. Constance Pilkington, I understand that I will be asked to complete tasks related to touch, taste, and vision. I will also be asked to answer a number of questions regarding my experience in the study today and my relationship. I understand that some of these questions are personal in nature, and I may choose not to answer any questions I find objectionable. In order to make this study a valid one, some aspects of this study will not be explained to me until after I have completed my participation. I understand that my responses will be confidential and will not be shown to anyone, including my dating partner. My name will not be associated with my responses or any results of this study. My participation will take approximately 1 hour and 10 minutes. I may experience some discomfort depending on the sensory experiences I might have. However, I understand this discomfort will be temporary and will dissipate upon completion of my participation today. If I am currently enrolled in Psy 201 or Psy 202 (or am finishing my participation requirement from last semester), I will receive 1.5 hours credit toward my Research Participation requirement. No other incentives are offered. I understand that my participation in this study is voluntary and that I must be at least 18-years-old to participate. Furthermore, I may terminate my participation at any point in time without penalty.

Questions or concerns regarding the research should be directed to Dr. Constance J. Pilkington at 221-3875 or cjpilk@wm.edu. Questions or concerns regarding participation in this research should be directed to either Dr. Pilkington or Claudia Viggiano at 227-5077 or crvigg@wm.edu. Any dissatisfactions with any aspect of this study should be directed to the chair of William and Mary's Protection of Human Subjects Committee (Michael Deschenes, PhD; Telephone: 757-221-2778, E-mail:mrdesc@wm.edu).

I agree to participate in this study and have read all the information provided on this form.

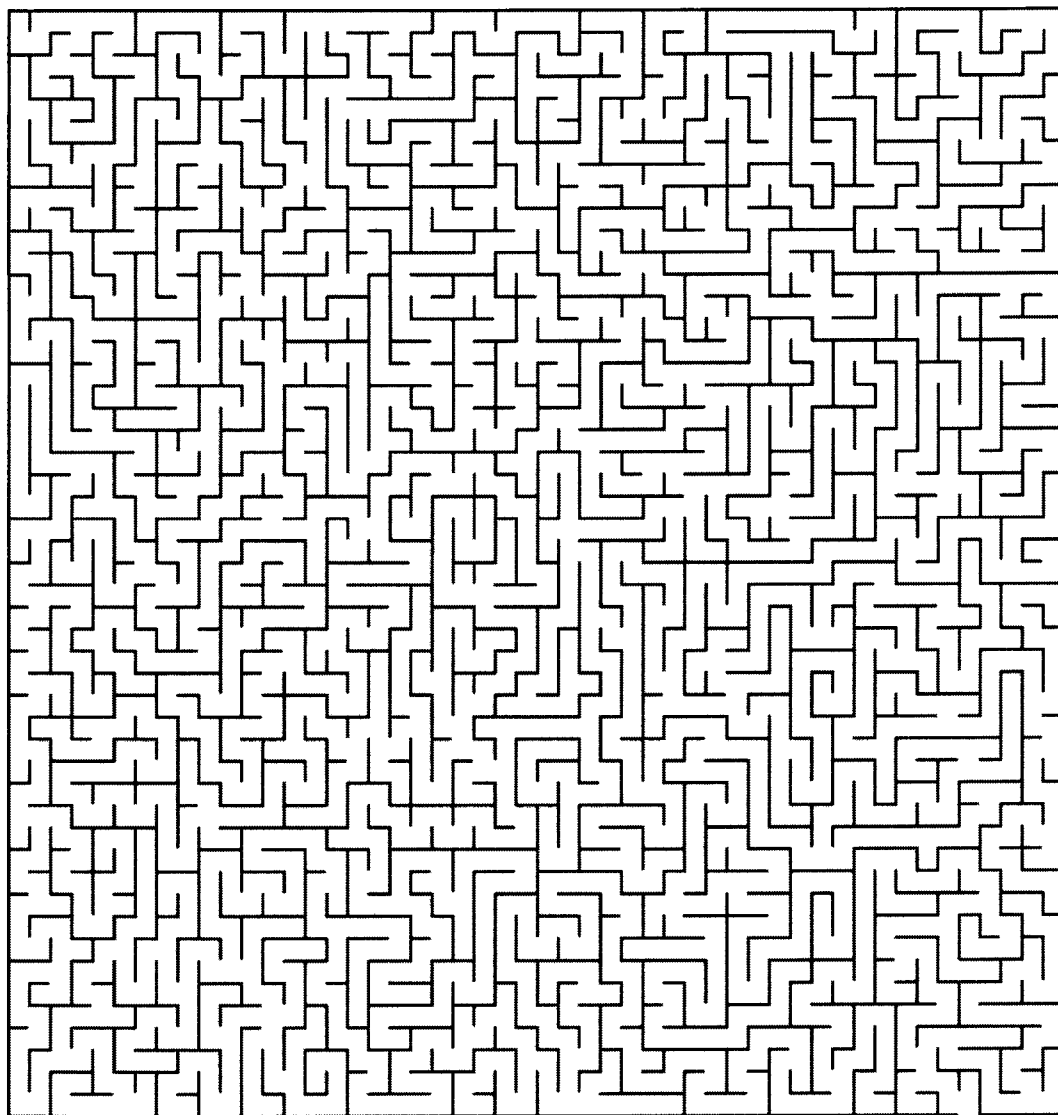
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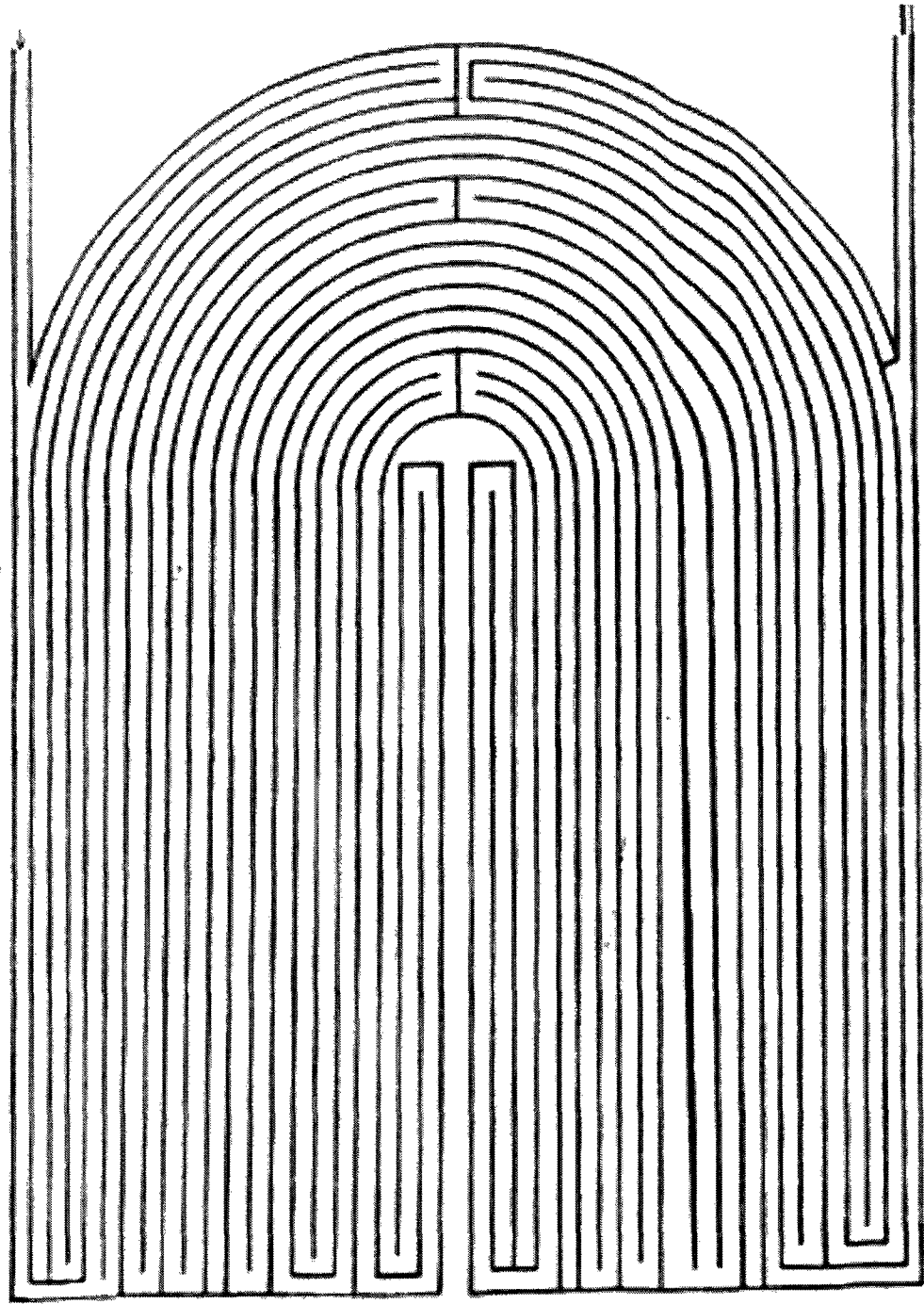
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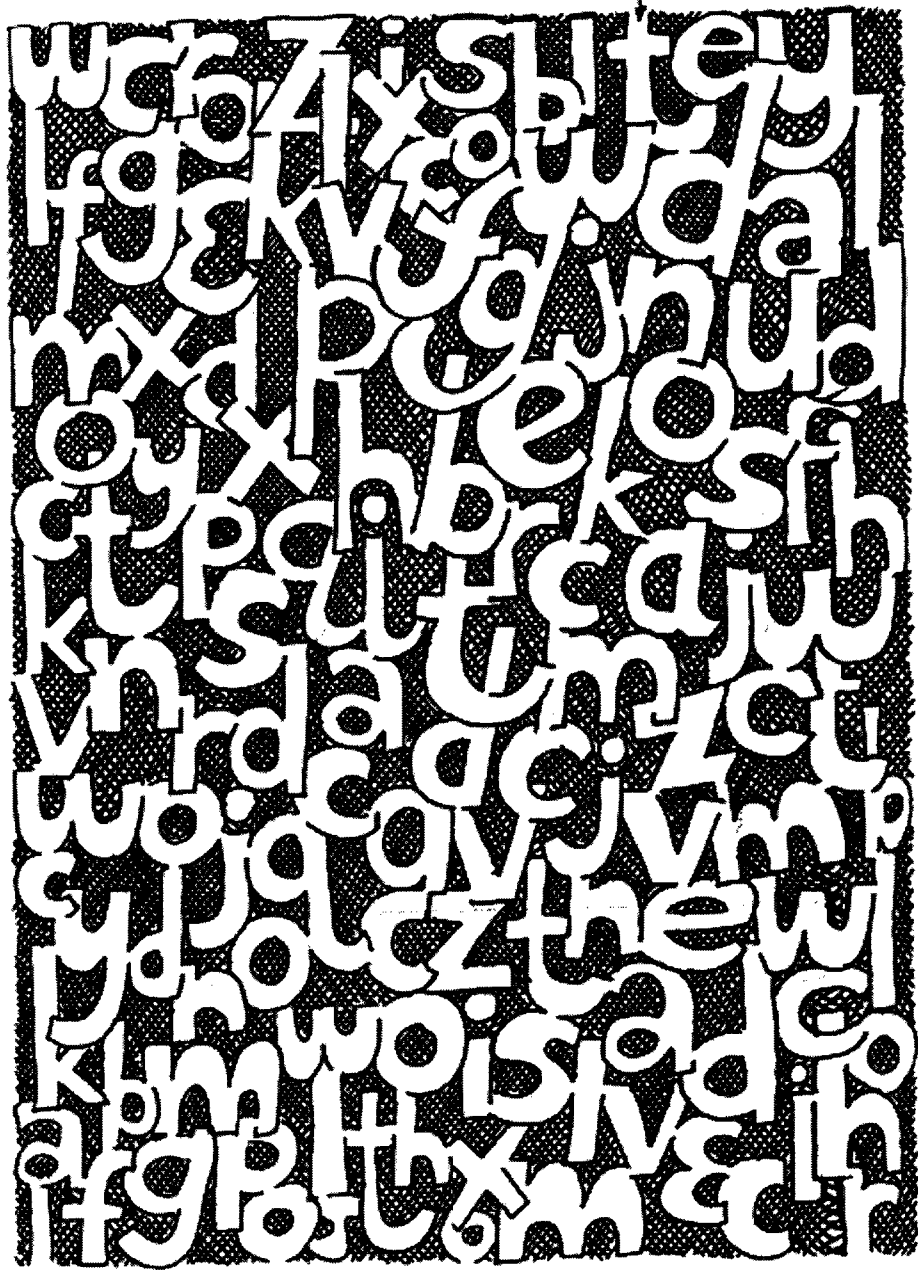
If you would like to be notified of the results of this experiment, please indicate your email address here:

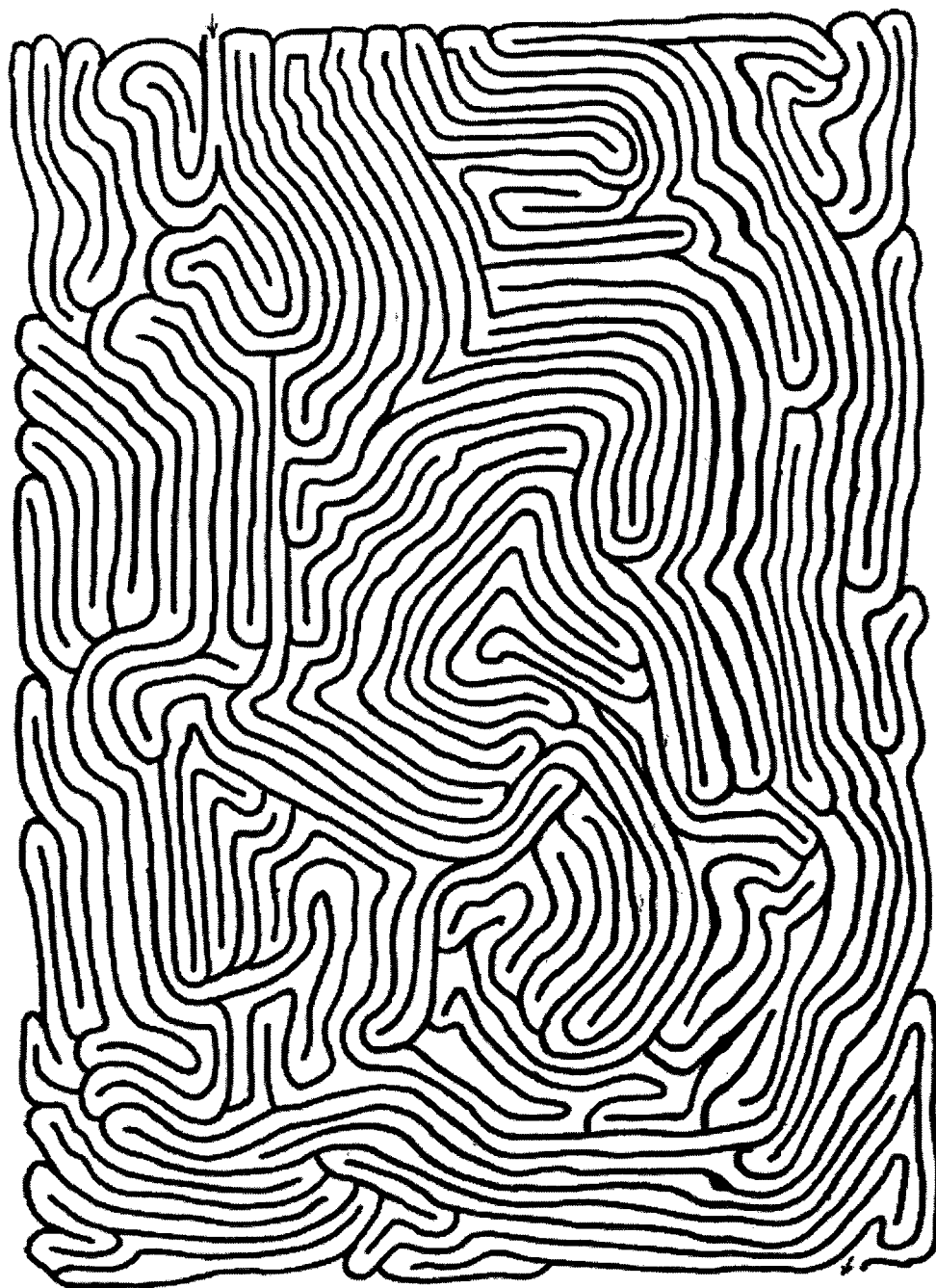
APPENDIX K

MAZES









APPENDIX L
FOLLOW-UP E-MAIL

Dear participant,

You participated in my study yesterday. I'm contacting you for 2 reasons. First, I wanted to follow-up to see if you had any questions or concerns regarding your (or your partner's) participation. Second, I'd like to ask you some questions regarding your experience in the study. Answering these questions won't take very long. You can reply to this e-mail and indicate your answers in the response.

The questions can be answered using the following scale:

Not at all							A lot
1	2	3	4	5	6	7	

1.) As a result of your participation in this study, to what degree have you learned about:

- a. Psychology research
- b. Your relationship
- c. Yourself

2.) To what extent would you recommend participation in this study to others?

Thank you again for your participation!

Claudia Viggiano

VITA

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Publications and Presentations:

- Ventis, W. L., Ball, C. T., & Viggiano, C. (in press). A Christian humanist Implicit Association Test: Validity and test-retest reliability. *Psychology of Religion and Spirituality*.
- Ventis, W. L. & Viggiano, C. (2006, July). The role of humor in reducing fear. Paper presented at the 18th International Society for Humor Studies Conference, Copenhagen, Denmark.
- Viggiano, C., Carvalho, A. F., & Lewis, R. (2006, April). Differences in outness, internalized homophobia, stigma-consciousness, and collective self-esteem between victims of same-sex domestic violence and non-victims. Paper presented at the Virginia Psychological Association, Spring 2006 Convention and Educational Conference, Virginia Beach, VA.

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