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USING I³ THEORY TO PREDICT THE PERPETRATION OF VIOLENCE IN ADOLESCENT
ROMANTIC RELATIONSHIPS

by

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Marquette University,
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ABSTRACT
USING I³ THEORY TO PREDICT THE PERPETRATION OF VIOLENCE IN
ADOLESCENT ROMANTIC RELATIONSHIPS

Christina Caiozzo, B.S.

Marquette University, 2014

Although empirical study of teen dating violence has increased substantially over the last decade, few theoretical models have been developed to guide research in this area. The present study draws on Finkel's (2008) I³ model of intimate partner violence, which holds that an impelling force, inhibiting force and instigating trigger are necessary for the perpetration of violence to transpire. Most of the research on the I³ model has been supportive, but few studies have tested it in a sample of late adolescents. The current study utilized data collected over an eight week period to investigate the unique and joint effects of romantic attachment insecurity, emotion regulation and contextual triggers, specifically perceptions of threat in the perpetration of violence.

Participants included 761 undergraduate students between the ages of 18 and 25. Participants completed a battery of measures, including assessments of adult romantic attachment anxiety and avoidance, and emotion regulation, and then completed follow-up assessments every two weeks for up to eight weeks, in which they answered questions about a recent conflict they had with their romantic partner. Results indicated that higher levels of attachment anxiety significantly predicted more instances of dating perpetration for females, but not for males, whereas higher levels of attachment avoidance predicted fewer instances of perpetration, regardless of gender. Better emotion regulation was associated with fewer instances of perpetration. The desire to cause intentional harm as well as the perception that the relationship is being threatened were contextual triggers of violence uniquely associated with attachment insecurity.

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Using I³ Theory to Predict the Perpetration of Violence in Adolescent Romantic Relationships

Romantic relationships can be a source of joy and shared intimacy but can also involve rejection, jealousy, and aggression. Many adolescents report psychological and physical aggression in their romantic lives (e.g., Malik, Sorensen & Aneshensel, 1997). Engaging in teen dating violence (TDV) negatively effects the development of healthy intimacy (Foshee & Reyes, 2009) and increases the likelihood of experiencing intimate partner violence (IPV) as an adult (Exner-Cortens, Eckenrode & Rothman, 2013). Teen dating violence is associated with serious health risks, including substance use, risky sexual behavior, and suicidality (Silverman, Raj, Mucci & Hathaway, 2001). It is important to identify who is most at risk for perpetration and victimization in order to reduce the incidence of violence across the lifespan.

One integrative model that seeks to identify the processes by which risk and protective factors interact to promote or mitigate the perpetration of IPV is the I³ theory (Finkel, 2008; Slotter & Finkel, 2011). According to the I³ theory, there are three factors that combine to produce aggressive behavior toward an intimate partner: impelling forces, which refer to dispositional or situational factors that encourage the urge to aggress, inhibiting forces, which refer to dispositional or situational factors that diminish the urge to aggress, and an instigating trigger, which refers to partner behaviors that elicit the urge to aggress (Finkel, 2008). The I³ theory stipulates that when there is a strong instigating trigger, strong impelling force and weak inhibiting force, IPV is most likely to occur.

Studies testing the I³ theory demonstrate strong support for it. For example, Finkel, DeWall, Slotter, McNulty, Pond & Atkins (2012) explored the relationship between impelling and inhibiting forces in the prediction of IPV with a nationally representative sample of adults 18 and older; they reported that when participants carried a diagnosis of Intermittent Explosive Disorder (strong impelling force) and endorsed high levels of general exhaustion (weak inhibition), they were more physically aggressive with their partners. Additionally, in a test of the three-way interaction among impelling, inhibiting and instigating triggers in a sample of undergraduates, Slotter et al. (2011) showed that the relationship between a dispositional inclination towards retaliation (strong impelling force) and the perpetration of IPV was strongest when there was a lack of interest in long term commitment (weak inhibition) and the participant felt provoked by their partner (strong instigating trigger).

The current study aims to further investigate the I³ model in two ways. First, it will examine impelling and inhibiting factors that have not been investigated in prior research on the I³ theory. Specifically, the current study tested emotion regulation as an inhibiting factor for IPV and insecure romantic attachment as an impelling factor. Second, this study extended the model's incorporation of instigating triggers by examining whether particular kinds of triggers are particularly salient for individuals high on particular impelling characteristics. Specifically, it assessed participants' reports of the instigating triggers of their aggression and examined which factors instigated the aggression perpetrated by insecurely attached individuals.

Violence in Adolescent Romantic Relationships

Relationship violence refers to individuals' attempts to harm their partner physically, sexually or psychologically. Physical violence may include intentional slapping, hitting or shoving; sexual violence may include unwanted sexual contact and nonconsensual sex; psychological violence may include name-calling, threatening harm or isolating a partner from friends and family. Violence is a pervasive and prominent problem for teens involved in romantic relationships. Research indicates that 12-35% of high school students are involved in the perpetration or victimization of violence in their romantic lives (Malik, et al., 1997). The prevalence of verbal and physical perpetration and victimization increases to 32-39% for college age men and women (White & Koss, 1991). As Foshee and Reyes (2009) note, engaging in relationship violence as an adolescent is disruptive to the development and growth of healthy intimacy, and may set adolescents on a path toward violence in their adult romantic relationships. Early research suggests that victimization and perpetration of psychological aggression predicted initial instances of physical aggression in a longitudinal study of newly married couples (Murphy & O'Leary, 1989). Kinsfogel and Grych (2004) speculate that for adolescents, emotional abuse may be a gateway to physical abuse in the future, suggesting that levels of abuse are likely to escalate once the precedent of violence has been set. Although psychological aggression can be a precursor to physical aggression, research suggests that forms of IPV also tend to co-occur, such that victims and perpetrators of one form of violence (e.g. physical IPV) are likely to engage in or experience other forms of violence as well (e.g. psychological or sexual IPV) (Hamby & Grych, 2013).

The current study's use of the I³ theory is an attempt to understand what makes individuals perpetrate IPV and what makes individuals effective at overriding violent impulses. This research will inform intervention and prevention efforts for adolescents who are involved in or at risk for engaging in relationship violence. Early intervention may decrease the likelihood of adolescents experiencing multiple and more severe forms of violence across their development.

Romantic attachment and IPV perpetration.

Powerful emotional bonds form between infants and their primary caregivers. This innate attachment process evolved as a way to facilitate physical closeness in order to ensure infants' survival (Bowlby, 1969, 1973). As a result, as infants mature, it becomes instinctual for them to maintain close proximity to their attachment figure, to use their attachment figure as a secure base from which to explore, and to conceptualize their attachment figure as a safe haven, to turn to for comfort and support (Bowlby, 1969, 1973). A similar attachment system also exists in romantic relationships (Hazan & Shaver, 1987), and like the parent-child attachment, the goal of the romantic attachment system is for individuals to maintain proximity to their partner (Fraley & Shaver, 2000). Once partners feel confident in their romantic attachment relationship, they can use mental representations of their attachment figure as comfort instead of physical proximity (Hazan & Shaver, 1994). Romantic attachment theory suggests that early experience with caregivers influences later behavior in romantic relationships, such that individuals with a secure romantic relationship are more likely to report positive perceptions of early family relationships (Feeney & Noller, 1990). According to Mikulincer, Shaver & Pereg

(2003), someone with a history of interacting with romantic partners who were available in times of need as well as sensitive and responsive to attachment needs is likely to develop positive expectations and beliefs about themselves and the future availability of their partner. Someone with this sense of attachment security is comfortable with emotional closeness and able to cope constructively when stressed. Alternatively, someone who is used to partners who are not available or responsive, even when sought out, is likely to develop negative working models of the self and others and in turn feel insecure about their relationships. In this situation, someone with an “anxious attachment style” eagerly perceives and fears rejection, and needs to be close to their partner; while, someone with an “avoidant attachment style” prefers emotional distance (Mikulincer, et al. 2003).

Recent research suggests that insecure romantic attachment (anxious or avoidant) is associated with aggressive behavior, including IPV perpetration (Miga, Hare, Allen & Manning, 2010), coercive sexual behavior (Smallbone & Dadds, 2001), and psychological abuse perpetration (Gormley & Lopez, 2010). This link likely exists because people who are insecurely attached may react aggressively toward their partner during a conflict because they believe and expect that their partner will not meet their emotional needs and may reject or abandon them. Bowlby (1973) suggests that in a relationship, anger can be a way of signaling distress to a partner, and can also be a way to discourage the partner from engaging in future conflicts. There is research to suggest that both anxious and avoidant attachment styles predict anger, hostility and aggression in relationships (Bookwala & Zdaniuk, 1998; Cummings-Robeau, Lopez & Rice, 2009; Grych & Kinsfogel, 2010). In an experiment where researchers asked participants to

discuss the most significant and unresolved issue in their relationship, highly anxious individuals felt greater anger and hostility toward their partners than those who were avoidantly or securely attached (Simpson, Rholes & Phillips, 1996). Some research implies that anxiously attached individuals are more likely to aggress toward their romantic partners than avoidantly attached individuals are (Simpson, Rholes & Phillips, 1996; Smallbone & Dadds, 2001; Follingstad, Bradley, Helff & Laughlin, 2002).

Emotion regulation and IPV perpetration.

The strength of the association between romantic attachment style and IPV is variable. According to the I³ theory, this variability is due to the fact that the relationship between impelling factors and aggression is strongest when inhibitors and instigators are also considered; instigating factors promote the urge to aggress, which perpetrators are more likely to act on when inhibition is weak. According to the present study, emotion regulation is likely to act as an inhibiting force, predicting lower levels of relationship violence. Emotion regulation refers to the way individuals manage their emotions in response to changing environmental influences (for a review, see Aldao, Nolen-Hoeksema, & Schweizer, 2010). The ability to do this successfully has been associated with a host of positive outcomes including improved medical health, relationship functioning, and professional performance. Effective emotion regulation strategies include reappraisal, the ability to interpret a stressful situation as innocuous, as well as problem solving, adopting an attitude, or performing an action that will reduce the stress of a situation (Aldao, et al., 2010). In contrast, maladaptive emotion regulation strategies, include the suppression of emotional expression and unwanted thoughts; the

avoidance of thoughts, emotions, sensations, and memories; and rumination, the continuous focus on emotion, which are risk factors for psychopathologies including externalizing disorders (e.g. Nolen-Hoeksema, Wisco & Lyubomirsky, 2008), maladaptive behaviors including substance use (e.g. Carver, Scheier & Weintraub, 1989), and relationship violence (Berzenski & Yates, 2010).

Bowlby (1969, 1973) noted that the attachment system is related to emotion regulation strategies. Mikulincer, et al. (2003) elaborated on the connection between emotion and attachment. They suggest that emotion-focused strategies such as acknowledging and expressing feelings and emotional support are effective for reducing distress, and that these strategies are more readily available to individuals with working models consistent with a secure romantic attachment. However, for individuals with an insecure romantic attachment, these strategies may not be accessible and without them, these individuals may have trouble inhibiting the urge to aggress when provoked by their partner. For individuals who are insecurely attached to their romantic partners but do have effective emotion regulation abilities, it is likely that these abilities may inhibit their urge to perpetrate when provoked (Mikulincer, et al., 2003). Based on this evidence, the current study examined whether effective emotion regulation acts uniquely as an inhibiting force to predict lower levels of violence perpetration, and as a moderator in the relationship between attachment insecurity and IPV.

Incorporating instigation.

Finkel (2008) argues that in order to explain the variability between strong impelling, weak inhibiting forces, and the prediction of IPV, it is necessary to understand

the precipitating instigation. The current study suggests that certain triggers are more likely than others to provoke people with particular characteristics to aggress. Romero-Canyas, Downey, Berenson, Ayduk & Jan Kang (2010) propose that for people who are particularly sensitive to rejection, the initial response to perceptions of rejection is most likely going to include angry and aggressive impulses. The current study investigated the hypothesis that for those who are insecurely attached to their romantic partner, a perceived threat to their relationship will be a salient instigator propelling them to act on their aggressive impulses. Individuals with an insecure attachment style have developed mental representations of themselves as unlovable and others as rejecting and the insecure attachment system causes them to seek reassurance and closeness from their partner (anxious attachment), or avoid emotional intimacy (avoidant attachment) in romantic relationships (Mikulincer, et al. 2003). As a result, perceptions of threats to their relationship may reinforce internal working models of themselves as unlovable and others as rejecting, leading to anxiety, anger and ultimately aggression. A threat to the relationship is operationalized as questioning of the relationship status, involvement of other potential partners, or feelings of jealousy.

Specific Aims

The proposed study draws on Finkel's (2008) I³ theory of intimate partner violence (IPV) to identify factors that may increase or decrease the risk of perpetrating IPV in adolescent romantic relationships. Attachment insecurity was conceptualized as an impelling factor, emotion regulation as an inhibiting factor, and instigating triggers for specific aggressive incidents were reported by participants. Emotion regulation and attachment insecurity

were assessed at an initial point in time and aggressive behavior was assessed afterward, every two weeks for up to eight weeks. This longitudinal design allows for the possibility of these constructs to predict the occurrence of later aggressive behavior.

Four specific hypotheses were tested in the proposed study.

1. First, it is expected that romantic attachment insecurity will act as an impelling factor in the prediction of the perpetration of dating violence and will positively predict the perpetration of aggression.
2. The second hypothesis is that emotion regulation will act as an inhibiting factor and will predict lower levels of dating aggression perpetration.
3. The third hypothesis tests the interaction of the impelling and inhibiting factors, and proposes that emotion regulation will moderate the relationship between romantic attachment insecurity and perpetration.
4. The fourth hypothesis examines whether particular kinds of triggers are more closely related to particular impelling factors, and predicts that individuals high in attachment insecurity will be more likely to report that a perceived threat to the relationship led to aggressive behavior than other possible triggers.

In addition, the study explored the role of gender in predicting relationship aggression. Both males and females engage in relationship violence. In a meta-analytic review of existing research which largely assessed aggression with self-report measures, women reported higher rates of physical aggression with their dating partner, but men perpetrated more severe forms of physical IPV than women did (Archer, 2000). However, it is not clear if the same processes lead to male and female perpetration. To explore this issue,

gender was examined as a potential moderator of the links between relationship aggression, attachment security, and emotion regulation.

Methods

Participants

Participants were 761 undergraduate students between the ages of 18 and 25 ($M = 18.82$). The sample was predominantly female (66%), and White: 78% identified as White, 7% as Black, 7% as Asian, 7% as Latino or Hispanic and 1% as either Hawaiian or Native American. These individuals were recruited from psychology courses and received extra credit in exchange for their participation. It was made clear to participants that their involvement is voluntary and that they may withdraw at any time. Additionally, they were given the opportunity to earn course credit through alternative means.

Procedure

Participants completed a battery of online questionnaires in the laboratory under the supervision of a trained research assistant. Participants provided demographic information and completed questionnaires assessing romantic attachment security, emotion regulation, romantic relationship involvement, and reports of conflict in their romantic relationships. A list of resources was provided to participants including the contact information for on- and off-campus psychological services. Research assistants were trained to detect and handle distressed students. Participants were also asked to complete online follow-up surveys every two weeks until the end of the semester for up

to eight weeks that assessed aggression in their romantic relationships. The number of follow-up surveys that participants were eligible to complete depended on when in the semester they participated in the study. For example, students who participated early in the semester received four follow-up surveys, whereas the number of follow up surveys for students who participated later was restricted by how many weeks there were left in the semester. The study was conducted for three academic semesters. Follow-up data from the first semester was treated as pilot data, and excluded from analyses. Across the other two semesters, the largest group of participants, (289; 46%) completed four follow-up surveys, while 94 (15%) students completed three follow up surveys, 103 participants completed two follow-up surveys (16%), 89 participants (14%) completed one follow-up survey and 54 participants (9%) did not complete any follow up surveys.

Materials

Adolescent Dating Violence: The Conflict in Adolescent Dating Relationships Inventory (CADRI; Wolfe, et al. 2001) is a 70-item measure of abusive behavior among adolescent dating partners. Participants indicate how often each of 35 unique behaviors occurred in a romantic relationship; half of the items ask about the participant's behavior and the other half asks about how the participant's partner behaves. Responses are scored on a 5-point scale ranging from "never," to "often." Higher scores on this measure indicate experiencing more aggression in romantic relationships. When participants filled this measure out in the laboratory, questions referenced a conflict with a romantic partner in the past year. When participants filled this measure out for the follow up surveys, questions referenced a conflict with a romantic partner in the past two weeks. Both sets of

measures will be prepared for data analysis in a similar fashion. Based on recommendations by Wolfe, et al., (2001), subscales will be obtained by summing items comprising each subscale. Sexual perpetration is operationalized with four items including, “I touched him/her sexually when he/she didn’t want me to,” and “I forced him/her to have sex when he/she didn’t want to.” Corresponding questions which address victimization are also included for all items across all subscales, (e.g. “During a conflict with my current or ex-boyfriend/girlfriend in the past year: he/she forced me to have sex when I didn’t want to”). Physical perpetration is operationalized with four items such as “I threw something at him/her,” and “I kicked hit or punched him/her.” Verbal-emotional perpetration is operationalized with ten items including, “I said things to my friends about him/her to turn them against me,” and “I ridiculed or made fun of him/her in front of others.” According to Wolfe, et al., (2001), the CADRI has good internal consistency with alphas of .82 for the verbal-emotional abuse subscale, .83 for the physical abuse subscale and .51 for the sexual abuse subscale. Additionally, Wolfe, et al., (2001) note that the CADRI has established criterion-related validity for male respondents with significant correlations between scales and observer ratings of actual dating behavior. In the current sample, data from the subscales administered at the initial time point also demonstrated strong internal consistency, with an alpha of .84 for the verbal-emotional perpetration subscale, .87 for the physical perpetration subscale and .47 for the sexual perpetration subscale ($p < .05$). The low alpha coefficient indicates that the sexual perpetration items do not hang together well, and caution should be exercised in interpreting the scores from this subscale.

Romantic Attachment: The Revised Experiences in Close Relationships scale (ECR-R; Fraley, Waller, & Brennan, 2000) is a 36-item measure of romantic attachment anxiety and avoidance. Attachment related anxiety is operationalized with questions including, “I worry about being abandoned,” and “I worry a fair amount about losing my partner.” Attachment related avoidance is operationalized with items including, “I get uncomfortable when a romantic partner wants to be very close,” and “Just when my partner starts to get close I find myself pulling away.” Responses range from 1= *disagree strongly* to 7= *agree strongly*. Responses comprising each of the two factors are summed to get a total score of attachment anxiety and attachment avoidance. According to Sibley, Fischer & Liu (2005), The ECR-R demonstrates strong construct validity with the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) with both measures of attachment-related anxiety loading solely onto one factor (loadings of .92 and .86 respectively) and both measures of attachment related avoidance loading solely onto a second factor (loadings of .74 and .98 respectively). The ECR-R also demonstrated high test-retest reliability: the correlation between time 1 and time 2 was .84 for attachment related avoidance and .85 for attachment related anxiety ($p < .01$; Sibley, Fischer & Liu, 2005). In this sample, the ECR-R demonstrated strong internal reliability with alphas of .91 for attachment anxiety and .94 for attachment avoidance ($p < .05$).

Emotion Regulation: The Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item measure assessing characteristic patterns of emotion regulation. Responses will be reverse scored when appropriate and summed to get a total score representing effective emotion regulation abilities. Questions include items such as, “I experience my emotions as overwhelming and out of control,” and “I have difficulty

making sense out of my feelings.” Responses range from 1=*almost never*, to 5=*almost always*. The DERS has demonstrated strong validity with constructs of interest with alphas ranging from .23 to .69 ($p < .01$; Gratz & Roemer, 2004). With the current sample, the DERS demonstrated strong internal reliability with subscale alphas ranging from .75 to .90 ($p < .05$). The DERS also demonstrated good test-retest reliability over a period ranging from four to eight weeks ($r = .88$, $p < .01$; Gratz & Roemer, 2004)

Instigating Triggers: If participants reported that aggression had occurred in a romantic relationship, whether they were the perpetrator or the victim, on one of the follow-up assessments (as measured by the CADRI), they were asked to describe the event and respond to questions associated with the event including when, where, and why it happened, who it happened with, and who was at fault for the conflict (“I was at fault,” “he/she was at fault,” or “we were both equally at fault”). A coding scheme was developed from pilot data by a team of coders using grounded theory analysis (Charmaz, 2006). Once data were collected, all the responses were reviewed and the similar responses were grouped together into categories; from these, codes were developed to identify the main reasons participants engaged in aggression with their partners. When responses were reviewed and categorized without having to form a new code, it was determined that saturation was reached. Eight codes were used to describe the kinds of causes (or triggers) reported by participants (see Appendix). The codes include the perception that the relationship has been threatened, which typically involved the partner questioning the relationship status or involvement of other potential partners or reporting feelings of jealousy, perceived threat to self, escalation, the use of intentional harm, miscommunication/misinterpretation, situational factors, personal characteristics, or non-

aggressive behavior. When participant responses could not be coded because there was not enough information, or questions were answered incorrectly, the conflict was coded as uncodable. Primary, secondary and tertiary codes were assigned to each response. The primary code was classified as the main reason the participant engaged in the listed behavior, and the secondary and tertiary codes were classified as supporting reasons why the behavior occurred. A different coding team comprised of 3 undergraduate research assistants and the author coded the instigating triggers. The research assistants each coded 1/3 of the data and the author double-coded 20% of all responses. Discrepancies were discussed until agreement was unanimous. An interrater reliability analysis using the Kappa statistic was performed to determine consistency among raters. The interrater reliability for the raters was found to be $Kappa = .89$ ($p < .001$).

Results

Descriptive statistics indicated that 95.5% of participants reported perpetrating an aggressive incident over the course of the past year ($M = 9.61$, $SD = 6.97$). Most of the aggressive incidents reported were verbal-emotional in nature; however, physical and sexual perpetration was not uncommon. For example, 10.7% of the incidents reported were of a physical nature and 28.6% of the incidents were of a sexual nature (See Table 1).

Table 1
Aggressive Incidents Reported in the Initial Data: Frequencies (N=629)

Variables	Frequency		Valid Percent	
	Males (N=211)	Females (N=418)	Males	Females
Perpetration	90	400	95.3	95.7
Physical	10	57	4.7	13.6
Sexual	72	108	34.1	25.8
Verbal-Emotional	199	398	94.3	95.2

Of the males in the sample, 4.7% reported perpetrating a physically aggressive incident, and 34.1% reported perpetrating a sexually aggressive incident in the past year; whereas, 13.6% of females reported perpetrating a physically aggressive incident and 25.8% of females reported perpetrating a sexually aggressive incident in the past year.

The adolescents in the sample also reported engaging in fairly high levels of dating aggression perpetration during the follow up period. Specifically, 42.5% of participants reported perpetrating one or more incidents of aggression with a romantic partner over the course of the follow-up assessments. As Table 2 shows, most of the incidents reported were categorized as verbal-emotional aggression; only 4% of participants endorsed perpetrating a physically aggressive incident, and less than 1% reported a sexually aggressive incident.

Table 2

Aggressive Incidents Reported in the Follow Up Data: Frequencies (N=499)

Variables	Frequency		Valid Percent	
	Males (N=161)	Females (N=332)	Males	Females
Perpetration	51	160	31.7	48.2
Physical	2	18	1.2	5.4
Sexual	3	1	1.9	.3
Verbal-Emotional	50	158	31.1	47.7

Slightly less than half (48%) of female participants and 32% of males reported perpetrating an aggressive incident. Data that was collected initially was used to create the coding scheme and therefore was not incorporated in the current analyses. Additionally, students who participated in the study late in the semester did not receive all the follow-up surveys. As a result, there is follow up data for 575 participants. Of these 575 participants, 76 reported that they did not have any romantic involvement during the follow-up period; therefore, they did not complete an assessment of relationship aggression during the follow up period. Of those 499 participants who reported romantic involvement during the follow up period, a total of 211 reported perpetrating an aggressive incident and of those, 145 provided codable responses regarding the aggressive incident (69%). Slightly less than one-third of the participants (62) reported more than one incident across the follow-ups.

Before testing the hypotheses, exploratory analyses were conducted to determine if there were gender differences in the mean level of each variable. The mean difference

between male and female reports of emotion regulation was statistically significant, $t(746) = 2.12, p < .05$, such that males reported having more effective emotion regulation strategies than females. Reports of attachment anxiety and avoidance did not differ significantly across gender.

In order to test the first three hypotheses, hierarchical multiple regression analyses were conducted to assess the main and interaction effects of attachment insecurity, emotion regulation and gender. Two similar hierarchical multiple regression analyses were conducted to test the separate effects of attachment *anxiety* and attachment *avoidance*, discussed below, respectively. All continuous variables were centered, and the centered variables were then used to create the interaction terms (Aiken & West, 1991). Preliminary data analyses revealed that assumptions of normality, linearity, multicollinearity and homoscedasticity were not violated.

The first hypothesis suggested that romantic attachment insecurity (anxious and avoidant attachment) would act as an impelling factor, predicting increased instances of perpetration. The second hypothesis suggested that emotion regulation would act as an inhibiting factor, predicting decreased instances of perpetration. The first hierarchical multiple regression analysis examined the effects of attachment *anxiety*. In the first hierarchical multiple regression analysis, the first two hypotheses were tested concurrently. Results of this regression analysis are presented in Table 3. Attachment *anxiety*, emotion regulation ability and gender were entered in Step 1 and together explained 4.6% of the variance in the perpetration of aggression. Results indicated that better emotion regulation was associated with fewer instances of perpetration ($\beta = -.17, p < .05$). Additionally, gender was significantly associated with greater levels of

perpetration ($\beta = .12, p < .05$), such that females endorsed significantly more incidents of perpetration than males did. The third hypothesis proposed that emotion regulation would moderate the relationship between romantic attachment insecurity and perpetration. This was tested in step 2, where the interaction terms for attachment *anxiety* x emotion regulation, attachment *anxiety* x gender, and emotion regulation x gender were added. The interaction between attachment *anxiety* and emotion regulation was not significant. The interaction between attachment *anxiety* and gender was significant ($\beta = .39, p < .05$), indicating that the effect of attachment *anxiety* on perpetration depended on the gender of the participant. Simple slopes for the association between attachment *anxiety* and perpetration were tested for males and females separately. Higher levels of attachment *anxiety* significantly predicted more instances of dating perpetration for females ($\beta = .16, p < .05$), but not for males ($\beta = -.02, ns$). Figure 1 plots the simple slopes of the interaction. Step 3 added the three-way interaction term (attachment *anxiety* X emotion regulation X gender), which did not add significantly to the prediction of perpetration.

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting the Perpetration of Dating Aggression (N=491)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Emotion regulation	-.02	.01	-.17**	-.04	.03	-.30	-.04	.03	-.29
Anxious attachment	.00	.01	.03	-.05	.03	-.35	-.05	.03	-.35
Gender	.84	.30	.12**	.88	.30	.13**	.83	.33	.12*
Anxious attachment x emotion regulation				.00	.00	.01	.00	.00	.06
Anxious attachment x gender				.03	.02	.40*	.03	.02	.39*
Emotion regulation x gender				.01	.02	.14	.01	.02	.13
Anxious attachment x emotion regulation x gender							.00	.00	-.06
R^2		.05*			.06*			.06*	
<i>F</i> for change in R^2		8.8**			5.12**			4.44**	

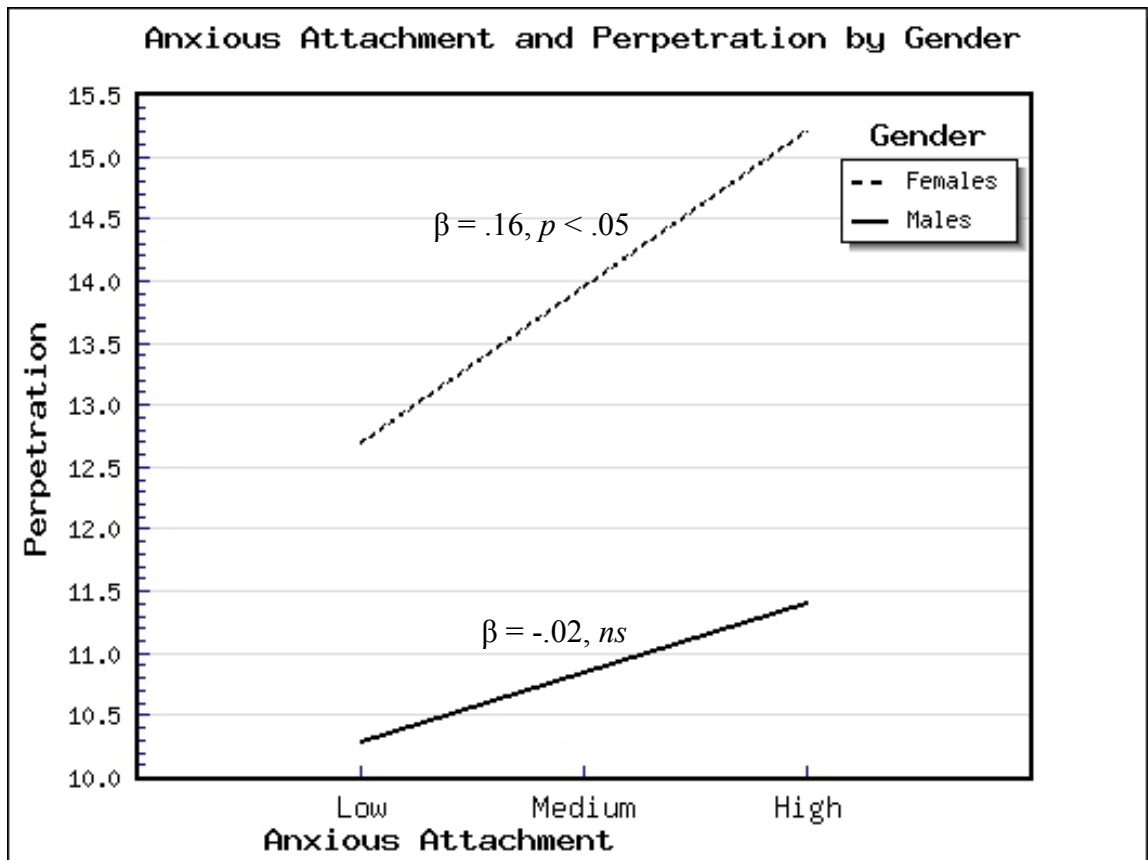
Note: Emotion regulation and anxious attachment were centered at their means. Gender:

1 = Male, 2 = Female.

** $p < .05$. ** $p < .01$.*

Figure 1

The Interaction of Romantic Attachment Anxiety and Gender in Predicting the Perpetration of Dating Aggression



The second hierarchical multiple regression assessed the main and interaction effects of attachment *avoidance*, emotion regulation and gender to predict the perpetration of aggression over the course of up to eight weeks. As Table 4 shows, attachment *avoidance*, emotion regulation and gender were entered in step 1.

Table 4

Summary of Hierarchical Regression Analysis for Variables Predicting the Perpetration of Dating Aggression (N=491)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Emotion regulation	-.03	.01	-.21**	-.02	.02	-.13	-.02	.03	-.12
Attachment avoidance	-.02	.01	-.14**	-.04	.03	-.25	-.03	.03	-.24
Gender	.84	.30	.12**	.86	.30	.13**	.85	.30	.13**
Attachment avoidance x emotion regulation				.00	.00	.05	.00	.00	.09
Attachment avoidance x gender				.01	.01	.12	.01	.01	.12
Emotion regulation x gender				-.01	.01	-.09	-.01	.01	-.10
Attachment avoidance x emotion regulation x gender							.00	.00	-.05
R^2		.07			.07			.07	
F for change in R^2		11.93**			6.26**			5.36**	

Note: Emotion regulation and avoidant attachment were centered at their means.

Gender: 1 = Male, 2 = Female.

** $p < .05$. ** $p < .01$*

Results indicated that better ability to regulate emotions was associated with fewer instances of perpetration ($\beta = -.21, p < .05$). Additionally, higher levels of attachment avoidance were associated with fewer instances of perpetration ($\beta = -.14, p < .01$). None of

the interaction terms tested in step 2 were significant, nor was the three-way interaction term (attachment avoidance x emotion regulation x gender) entered in step 3.

The fourth research question, examined whether particular kinds of triggers are more closely related to particular impelling factors. The frequency with which each type of trigger was coded is found in Table 5.

Table 5

Triggers of Aggressive Incidents: Frequencies

Variables	Frequency	Relative Frequency	Participants that were triggered by this code
Escalation	64	26.00%	50
Threat to Relationship	53	22.00%	42
Uncodable	31	13.00%	30
Threat to Self	26	10.80%	24
Situational Factors	19	8.00%	19
Intentional Harm	16	6.70%	16
Non Aggressive	15	6.30%	14
Miscommunication	9	3.80%	9
Personality Characteristics	7	2.90%	7
Total	240	100.00%	211

The most commonly coded triggers of aggression were escalation and threat to the relationship, with the least commonly occurring triggers of aggression being a miscommunication and personality characteristics. The fourth hypothesis was initially explored with correlational and descriptive statistics (See table 6). Because participants varied in the number of follow-ups they completed, an index of the percentage of

incidents for which they endorsed particular triggers was created by dividing the number of times a code was endorsed by the total number of aggressive incidents reported.

Participants had the opportunity to write about one aggressive incident they experienced per follow up survey they completed thus, the number of aggressive incidents reported ranged from 0-4 and the proportion scores ranged from 0-1. Because the code variables were proportion scores, correlational analyses were conducted using Pearson's test of correlation as well as Spearman's rank correlation test. Since significant differences were not observed, Pearson's correlation coefficients were reported. Correlational and descriptive statistics were also used to explore whether the relationship between triggers and the impelling factor differed for males and females. The results indicated that for males, attachment avoidance was significantly positively correlated with the number of times the code for personality characteristics was used ($r(32) = .35, p < .05$). For females, attachment anxiety was significantly positively correlated with the number of times the code for intentional harm was used ($r(109) = .20, p < .05$). Also for females, attachment avoidance was also significantly positively correlated with the number of times the code for intentional harm was used ($r(109) = .24, p < .05$). The results based on gender are difficult to interpret because of the limited sample size and were not explored further. The following description is reflective of results that have not been sorted by gender.

Table 6

Participants' Reports of Attachment Anxiety and Avoidance, and Triggers of Aggressive Incidents: Correlations and Descriptive Statistics

Variables	1	2	3
1. Attachment Anxiety ^a	–		
2. Attachment Avoidance ^a	.26**	–	
3. Gender ^b	.10	.04	–
4. Threat to Relationship ^c	-.17*	.00	.01
5. Escalation ^c	.03	-.02	-.03
6. Threat to Self ^c	-.03	-.00	.17*
7. Intentional Harm ^c	.13	.21*	-.04
8. Miscommunication ^c	.11	.07	.03
9. Situational Factors ^c	-.06	-.01	-.06
10. Personality Characteristics ^c	.03	.01	.08
11. Non Aggressive	-.12	.03	-.04
12. Uncodable	.16	-.16	-.09
<i>M</i>	66.90	40.95	1.66
<i>SD</i>	21.46	22.88	.48

^a Attachment Anxiety and Attachment Avoidance: 1= *disagree strongly*, 7= *agree strongly*. ^bGender: 1 = *Male*, 2 = *Female*. ^c Code scores are proportions from 0-1 of the number of times this trigger was coded out of the total number of aggressive incidents reported

* $p < .05$. ** $p < .01$. *** $p < .001$.

Across genders, attachment anxiety was significantly negatively correlated with the number of times the threat to relationship code was used ($r(209) = -.17, p < .05$).

Additionally, attachment avoidance was significantly positively correlated with the number of times the intentional harm code was used ($r(209) = .21, p < .05$). Multiple linear regression analyses were used to explore these relationships further. Over an eight-week period, there were 240 endorsed incidents of aggression for which triggers were identified, across 145 participants. Regression analyses were conducted in which attachment anxiety and avoidance were entered as predictors of the proportion score for threat to relationship and intentional harm. Results indicated that higher levels of attachment anxiety significantly predicted fewer reported instances where a threat to the relationship was coded as what triggered the aggressive incident ($\beta = -.18, F(2, 144) = 2.20, p < .05$). Further results indicated that higher levels of avoidant attachment significantly predicted more instances where the desire to intentionally cause harm was coded as what triggered the aggressive incident ($\beta = .19, F(2, 144) = 3.84, p < .05$). None of the other regressions were significant.

Discussion

Using the I³ model as a conceptual framework, this study offers insight into the factors that promote and inhibit aggression in adolescents' romantic relationships as well as the types of reasons why adolescents with particular characteristics are impelled to perpetrate. By assessing emotion regulation and attachment insecurity at an initial point in time and then assessing aggressing behavior every two weeks for up to eight weeks, the study provides a sensitive assessment of relationship aggression and the capacity of these constructs to predict later aggressive behavior.

Participants reported engaging in fairly high levels of dating aggression during the follow up period. Specifically, 31.7% of males and 48.2% of females reported perpetrating an incident of aggression. Nearly all of these incidents involved verbal-emotional aggression; sexual and physical perpetration were rarely reported in the follow-up surveys. Both attachment security and emotional regulation predicted the occurrence of aggression. Attachment anxiety interacted with gender such that females with higher levels of attachment anxiety reported more aggressive incidents. This is consistent with earlier literature showing that women with an anxious attachment style report perpetrating more psychological abuse than men (Hoover, Murphy & Taft, 1999).

According to attachment theory, individuals with an anxious attachment style have internal working models consistent with views of themselves as inadequate or unlovable and views of others as rejecting (Bartholomew & Horowitz, 1991). As a result, attachment anxiety is characterized by a constant and unfulfilled desire for reassurance and support from their partner as well as a hypersensitivity to signs of rejection (Shaver & Mikulincer, 2007). Perceiving a threat to their relationship could impel aggression, either as a result of anger at the partner for rejecting them or the belief that aggression could keep the partner in the relationship. Leisring (2009) found that aggressive women were more likely to believe that aggression would result in getting their way, or winning an argument, than nonaggressive women were. It is possible then, that women with an anxious attachment style, who have a constantly unfulfilled wish for their partner to pay more attention to them, express their frustration by being violent toward their partner because they believe that this will result in their partner acquiescing to their needs. This

mindset may be a result of having observed parents, particularly mothers, achieve a positive outcome by engaging in aggressive behavior with their partner.

In contrast, an anxious attachment style was not predictive of aggressive incidents for men in this sample. This finding is inconsistent with prior research showing that anxious attachment predicted males' aggression toward a romantic partner in adolescence (Grych & Kinsfogel, 2010) and adulthood (Holtzworth-Munroe, Stuart, & Hutchinson, 1997). Although these findings require replication before definitive conclusions can be drawn, it may suggest that there are developmental differences in the impact of insecure attachment on relationship aggression. Prevention efforts and media attention have focused on men's perpetration of violence against women, and many colleges and universities address this issue during orientation programs for new students. Given that most of the participants in this study were college freshman and sophomores, it is possible that proscriptions against male violence toward women were very salient, and as a result, men with an anxious attachment style inhibited impulses to act aggressively toward their partner.

Current results also indicate that higher levels of attachment anxiety were associated with *decreased* instances of involvement (as a victim or a perpetrator) in an aggressive incident that was triggered by perceiving a threat to the relationship. It is possible that because individuals with an anxious attachment have mental representations of partners as rejecting, they may have a persistent perception that their relationship status is permanently uncertain. That would make this particular trigger consistent with everyday perceptions, and as a result, less likely to trigger aggression.

Being rejected and dismissed by an attachment figure is painful and distressing. Avoidant attachment strategies develop in order to prevent this emotionally painful pattern from reoccurring with future partners (Shaver & Mikulincer, 2007). Individuals with an avoidant attachment style tend to avoid intimacy as a way of protecting themselves from feeling vulnerable. Current results indicating that high levels of avoidant attachment predicted decreased instances of perpetration are consistent with the notion that avoidant attachment strategies are aimed at maintaining an emotional distance from partners in order to prevent feelings of rejection. This type of distance would also preclude situations from arising that would trigger acts of aggression.

Higher levels of avoidant attachment also were associated with increased instances of involvement in an aggressive incident that was triggered by the desire to intentionally cause harm. If avoidant attachment strategies are aimed at decreasing feelings of vulnerability in order to prevent rejection, persistent relationship partners may be viewed as a threat to protective efforts designed to inhibit feelings of vulnerability. Perpetrating aggression to cause intentional harm to their partner may be a harsh way of pushing their partner away in order to permanently discourage their partner's desire for emotional intimacy. Some research indicates that in the face of intense stress, including conflict in close relationships, attachment avoidance is associated with appraising events as more distressing and extreme than they are (Lussier et al., 1997). It is possible then, that victims of intentionally harmful aggression, with an avoidant attachment style, may have appraised the event as more purposefully hostile and rejecting than was intended by the perpetrator.

Consistent with the I³ model, the data suggest that emotion regulation is an important inhibiting factor for male and female adolescents. Specifically, participants who reported better emotion regulation abilities reported engaging in fewer instances of perpetration. This is consistent with prior research, which has found that lack of emotional control (Norström & Pape, 2010; Tager, Good & Brammer, 2010), and decreased clarity and awareness (Cohn, Jakupcak, Seibert, Hildebrandt & Zeichner, 2010) are associated with aggression. When an individual is able to deliberately regulate their emotions in order to modulate their emotional experience, they are able to engage in goal-directed behaviors (Gratz & Roemer, 2004). In this study, it seems that participants who were able to adaptively regulate their emotions were better able to engage in non-aggressive interactions with their partner. Emotion regulation was measured by a compilation of participants' responses to questions related to emotional awareness, clarity, ability to accept emotional responses, control impulses, employ emotion regulation strategies and attend to goal-directed behavior. It seems that participants who were better able to regulate their emotions in these ways were better able to modulate emotional experiences with their dating partners and as a result, were less likely to perpetrate against their romantic partner. In terms of the I³ model, emotion regulation was associated with the ability to override, and inhibit aggressive impulses. Further, escalation, characterized by a dysregulation of emotional control was the code most often used to identify what triggered an aggressive incident to transpire, indicating that emotion regulation may be a particularly relevant factor to target in intervention efforts designed at reducing adolescent dating aggression.

Clinical Implications

These findings have a number of implications for efforts to reduce conflict and violence in adolescent dating relationships. They suggest that mental health prevention and intervention programs should place more emphasis on improving emotion regulation, including enhancing emotional awareness and the use of effective skills for managing emotional distress. For example, Greenberg & Paivio (2003) recommend experiential teaching in therapy, so that clients may become comfortable experiencing and regulating emotional states. These findings also point to a need for intervention efforts aimed at reducing attachment insecurity. Research suggests that while attachment styles are generally construed as stable, increases in self-esteem and perceptions of social support are related to increases in attachment security over time (Cozzarelli, Karafa, Collins & Tagler, 2003). It is also possible that increased awareness of relationship patterns and interaction styles may lead to improvement in romantic attachment styles. Kilman (1996) developed a manualized attachment-focused intervention, with segments focused on dysfunctional relationship beliefs, childhood factors that influence partner choices and relationship styles, relationship skills training, and relationship strategies. The intervention was tested with a limited sample, but results seem encouraging. For example, women who participated in this intervention, which provides psycho-education and promotes self-awareness of interaction patterns, reported less dysfunctional relationship beliefs and more secure romantic attachment patterns after participation (Kilmann, Laughlin, Carranza, Downer, Major & Parnell, 1999). Increased education efforts regarding self-awareness, attachment, romantic relationship skills and the

availability of local mental health treatment options may lead to decreases in rates of perpetration for college-aged adolescents.

Limitations and Future Directions

This sample is predominantly composed of middle-class, Caucasian students in late adolescence, and therefore, the results from this study are not necessarily generalizable to other demographic groups. Another limitation in the methodology of this design is the lack of multiple informants associated with participant responses. To truly obtain a comprehensive understanding of inhibiting, impelling and instigating triggers associated with the perpetration of IPV, it would be best to have input from all parties involved. The participants in the sample reported low levels of physical and sexual perpetration in the follow-up surveys, which limited the assessment of risk and protective factors of these forms of violence. As a result, physical, sexual and verbal-emotional perpetration were grouped together as an outcome variable. An investigation of these forms of violence as they occur separately as well as co-occur can inform whether or not there are impelling and inhibiting factors unique to co-occurrence and unique to the occurrence of single forms of violence perpetration. Further exploration using the I³ theory as a conceptual framework may want to continue to consider if specific impelling factors, as well as inhibiting factors are associated with particular triggers. This may help tailor intervention efforts in order to treat individuals who have particular strengths and weaknesses.

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APPENDIX
Coding Scheme for Conflicts Reported in Follow-Up Surveys

0 “Uncodable”

- It is impossible to determine why the behavior occurred (This can occur when participants have answered the questions incorrectly)

1 Threat to Relationship

- The behavior occurred because of a perceived threat to the relationship. Perceived threats to the relationship may include questioning of the relationship status, or involvement of other potential partners. Behaviors related to this may be caused by feelings of jealousy.
 - EX: “She wondered if it was worth it to be in a long-distance relationship”
 - EX: “He talked about a girl, I automatically jump to a conclusion”
 - EX: “She was hanging out with her ex and wouldn’t tell me what was going on”
 - EX: “I got upset over her being with another man all the time and threatened to end it all”
 - EX: “yelled at me for talking to too many girls”

2 Threat to Self

- A perceived threat to self led to the behavior mentioned. A threat to self can be caused by feelings of abandonment, separation, being the subject of joking or teasing, embarrassing situations, or an inattentive partner. May invoke feelings of insecurity.
- The behavior can arise from a threat to self felt by the individual or the individual’s partner
 - EX: “We were on the phone and I was busy doing other things, so I was not being very attentive to anything he was telling me, so he got mad”
 - EX: “My boyfriend was about to walk through a puddle or vomit, so I dramatically pulled him out of the way as a joke. He got upset”
 - EX: “She didn’t invite me to go along and left without saying goodbye”
 - EX: “He went out with his friends the night before, while I stayed in by myself.”
 - EX: “I didn’t know anybody at the dance, she left me to go talk with her friends and I felt abandoned so I got mad at her.”

3 Escalation

- The behavior occurred due to an escalation of a discussion or their emotions getting out of control. Emotions may include anger, irritation, hurt or other non-specified emotional states.

- If a reference is made to codes 1 (threat to the relationship) or 2 (threat to self), those should be coded first.
- EX: “We were both very angry”
- EX: “We were both frustrated with each other.”
- EX: “Before, we were simply having a discussion. Afterwards, it became an argument.”
- EX: “I really got into my emotions.”
- EX: “I was annoyed with him”
- EX: “Things got out of hand quickly because we both were getting upset.”

4 **Intentional Harm**

- The behavior happened because of the individual’s intent to harm their partner. May be shown through an act of vengeance or retaliation. The individual may intend to harm their partner by trying to make him or her jealous.
- EX: “I wanted him to hurt like I did when it happened.”
- EX: “We have the same group of friends so I said things to his friends knowing they would tell him.”
- EX: “All I could think of was when he cheated on my in October. I tried to cheat on him with another guy”

5 **Miscommunication / Misinterpretation**

- The behavior occurs after a miscommunication or misinterpretation during the couple’s interactions. The couple communicates in an unclear or inadequate manner leading to faulty understanding. May need to infer.
- If a reference is made to another code, this code (5) should be recorded as a secondary code, unless the other code is situational factors (6), in which case, this code should be first.
- If a reference is made to two other codes, this code should not be included.
- EX: “He misinterpreted my reason for pulling him out of the way.”
- EX: “We were arguing about a specific time we were going to leave and each of us were blaming the other.”

6 **Situational Factors**

- Situational factors consist of any transient states such as mood, fatigue, stress, or intoxication. Situational factors can also consist of environmental factors such as having a bad day.
- If a reference is made to two other codes, this code should not be included unless the situation described is a key reason why the behavior occurred (EX: pregnancy)
- EX: “I was overtired and crabby.”
- EX: “I was having a bad day and did not hold back my frustrations.”

- EX: “He was upset about the amount of work he had to get done and the fact that the test he just took hadn’t gone well.”
- EX: “We are both stressed with finals coming up”
- EX: “We were intoxicated.”

7 **Personal Characteristics**

- Personal characteristics are any stable features of a person’s personality. These features are innate to the person and increases their chance of committing the behavior.
- EX: “He is very irrational and insecure.”
- EX: “I think because I am a lonely and deeply frustrated with the life I have”
- EX: “She’s just a sketchy girl in general.”

8 **Non-Aggressive**

- A behavior can be coded as Non-aggressive if it does not meet any of the criteria for the previous codes and demonstrates a constructive interaction with minimal risk for harm to the couple. Non-aggressive supersedes all other codes.
- EX: “We were both talking about things we thought the other could have done better-in a constructive way.”
- EX: “After I expressed my feelings, we talked and addressed the problems and we are working to fix them.”