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Adolescent Dating Violence And Romantic Relationship Attachment In Young Adulthood: The Effects Of Relationship Commitment And Perceptions Of Alterability

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ADOLESCENT DATING VIOLENCE AND ROMANTIC RELATIONSHIP ATTACHMENT IN YOUNG ADULTHOOD: THE EFFECTS OF RELATIONSHIP COMMITMENT AND PERCEPTIONS OF ALTERABILITY

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DEDICATION

This thesis is dedicated to my family. Steve – I am so grateful to have such an amazing partner and best friend. Thank you for all of your support, encouragement and love each day. Quinn – I am not just blessed to be a mom, but *your* mom. You are amazing. Of all the things in my life, I am most proud of you and spending time with you is the best part of every day. Mom, Dad, Joe, Hannah, Sarah and Eugene – thank you for all the joy, love, support and friendship you give me. And especially to Mom -- you have taught me to be kind, laugh often, work hard and love your family endlessly. I pray that I can be half the person you are. Because of you, the Three have become the Nine, and still growing. And without all of them, I would not be where I am today. Thank you.

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INTRODUCTION

Adolescent dating violence is a pervasive and deleterious problem. Research suggests that up to half of all adolescent girls have experienced physical and/or sexual dating violence (Hickman, Jaycox & Aronoff, 2004; Jackson, Cram & Seymour, 2000; Watson, Cascardi, Avery-Leaf & O'Leary, 2001; Wolfe, Scott, Wekerle, & Pittman, 2001). Adolescent dating violence can lead to psychological, physical and social consequences. Many women who have been victimized experience posttraumatic stress disorder (PTSD), depression, disordered eating, and suicidal ideation (Banyard & Cross, 2008; Behnken, Le, Temple & Berenson, 2010; Callahan, Tolman & Saunders, 2003; Demaris & Kaukinen, 2005; Esposito, 2005; Temple, Weston, Rodriguez, & Marshall, 2007; Ullman, Townsend, Filipas, & Starzynski, 2007). Sexual and physical victimization can also lead to physical pain and somatization (Farley & Keaney, 1997; Nicolaidis et al., 2008; Wuest et al., 2010). Furthermore, experiencing physical or sexual violence is often associated with risk behaviors including substance use, binge drinking and risky sexual activity (Banyard & Cross, 2008; Behnken et al., 2010; Deliramich & Gray, 2008; Gover, 2004). Revictimization is also common (Katz, May, Sorenson & DelTosta, 2010).

Despite the findings of previous research suggesting that negative consequences are associated with victimization, it is not enough to know that an individual experienced violence in order to predict its effects. Instead, it is critical to understand what the violence meant to the adolescent. The ways in which adolescent victims appraise the violence can affect their later psychological and physical health, subsequent behavior and, possibly, their ability to establish healthy relationships in the future (Folkman,

Lazarus, Gruen & DeLongis, 1986; Frazier, Mortenson, & Steward, 2005). Adolescence is a unique development period during which romantic relationships are emerging (Furman, 2002; Pittman & Wolfe, 2002), making negative relationship experiences during this period potentially detrimental. Because of the pervasiveness of adolescent dating violence and its injurious consequences, it is important to understand how such occurrences are interpreted by the victims and how violence impacts future relationships.

Many previous studies have assessed predictors of victimization, which include among others: a family history of violence; negative emotions such as extreme sadness; peers' dating violence victimization; risky behavior; low GPA; as well as situational and relationship characteristics (Foshee et al., 2004; Freeman & Temple, 2010; Giordano, Soto, Manning & Longmore, 2010; Glass, et al., 2003; Halpern et al., 2001; Howard & Wang, 2003; Katz & Myhr, 2008; Yan, Howard, Beck, Shattuck & Hallmark-Kerr, 2010). The present study does not seek to determine predictors of violence. Instead, the present study attempts to understand how this violence, once it has been experienced, impacts relationships in young adulthood. This study fills an important gap in the literature by focusing on how violence in an adolescent relationship affects the developmental goal of intimacy and future relationship functioning. It also considers the context of the adolescent romantic relationship; this is seldom considered when assessing victims' appraisals of violence. This is an important area of inquiry because romantic relationships are just emerging in adolescence; thus, early relationship violence provides an unhealthy model for future romantic relationships (Manning, Giordano & Longmore, 2008; Rich, Gidycz, Warkentin, Loh & Weiland, 2005).

Thus, the present study cross-sectionally predicts women's romantic relationship attachment in young adulthood following an incident of male perpetrated adolescent dating violence. Adolescent dating violence is defined as physical or sexual violence that occurs with a romantic partner, here defined as a boy that the adolescent female victim likes and who likes her back. As can be seen in Figure 1, relationship factors related to commitment (relationship investment, relationship satisfaction and quality of perceived alternatives) and characteristics of the violent incident associated with perceived alterability of the situation (perceived provocation of the perpetrator, victim's intoxication, and perpetrator's intoxication) are conceptualized as predictors of the appraisal process. Commitment is expected to increase the sense of threat to the goal of future intimacy (i.e., primary appraisal) and perceptions of alterability are expected to increase the sense of control over achieving and maintaining intimacy in the future (i.e., secondary appraisal). It is expected that these appraisals influence anxious and avoidant romantic relationship attachment in adulthood.

In the following sections of this paper, various theories are reviewed in support of the proposed model. The proposed model is explicated using the transactional theory of stress (Lazarus & Folkman, 1984) The hypotheses regarding proximal predictors of appraisal are supported by investment theory and the model of reasons for aggression, as well as previous research on adolescent romantic relationships (Collins, Welsh & Furman, 2009; Flynn & Graham, 2010; Furman & Wehner, 1994; Giordano, Manning & Longmore, 2006; Rusbult, 1980; 1983). Furthermore, the effects of appraisal on romantic relationship attachment are described within the framework of attachment theory (Ainsworth, 1969; Ainsworth & Bowlby, 1991; Bowlby, 1958; Schneider, 1991).

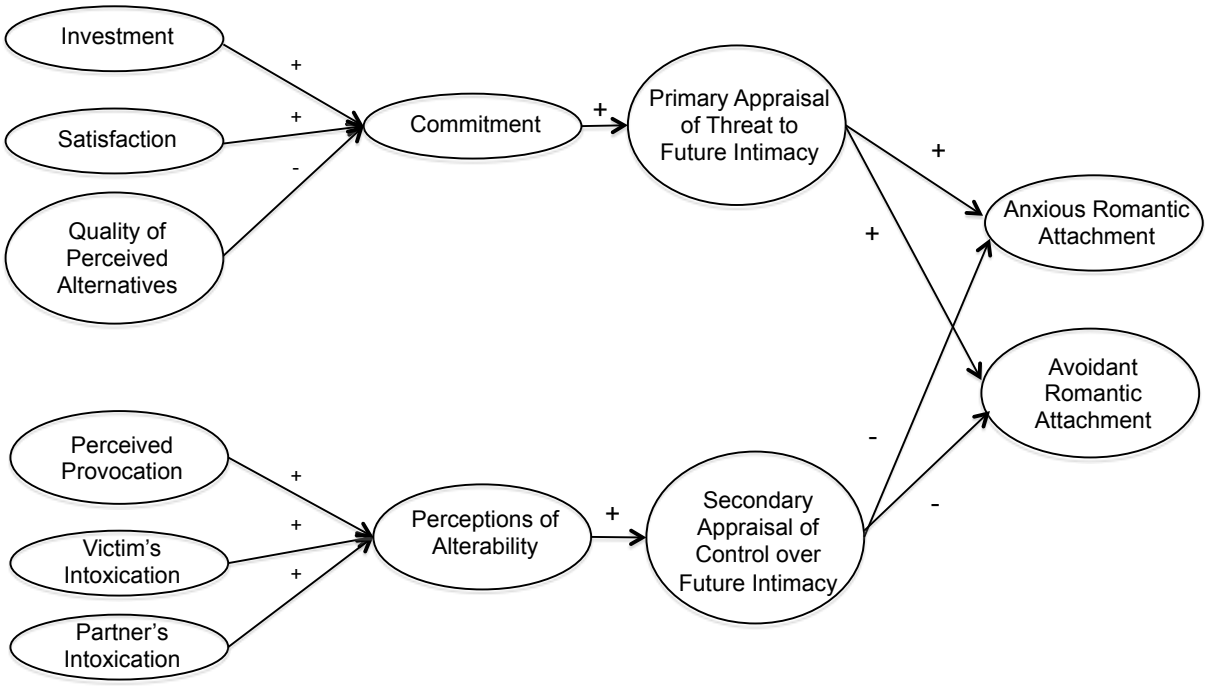

Figure 1. Proposed model predicting anxious and avoidant adult romantic attachment.

In support of the hypotheses, this section of the proposal provides a review of research on adolescent romantic relationships. This is followed by a discussion of physical and sexual violence within the context of an adolescent romantic relationship. The transactional theory of stress and coping is then described, followed by a summary of factors considered important to the appraisal process. A review of attachment theory follows. Finally, the proposed research hypotheses and methodology are presented.

Romantic Relationships in Adolescence

The present study focuses on the critical developmental period of adolescence. Because of this focus, it is necessary to review why romantic relationships are important to adolescents and how impactful these relationships can be to future functioning.

Romantic and sexual heterosexual relationships are often just emerging during adolescence. Thus, the notion of a romantic partnership often differs from that in later stages of life. Romantic relationships during adolescence are diverse; a romantic partner during the period of adolescence may be an individual with whom the adolescent is in a long-term romantic relationship, a friend with whom she has a sexual relationship or an individual with whom the adolescent socializes in large peer groups (Hickman, Jaycox, & Aronoff, 2004). Therefore, some researchers define a romantic partner in adolescence as someone the adolescent likes and who likes her back (Giordano, Manning & Longmore, 2006).

During adolescence, romantic relationships are evolving and becoming an integral addition to one's social context (Furman, 2002; Pittman & Wolfe, 2002). Normative social development involves young adolescents being entrenched in peer relationships (Collins, Welsh & Furman, 2009). As they grow older and loose romantic

ties are formed, many spend less time with peers and large social groups. Instead, most adolescents spend more time in romantic dyads (Collins et al., 2009; Furman, 2002). Thus, the romantic partner becomes one of the primary social referents and an important source of identity for developing adolescents (Collins et al., 2009; Pittman & Wolfe, 2002). Although parent and peer relationships remain important to adolescents, romantic relationships typically become the primary source of influence in numerous domains, including delinquency and educational achievement (Collins et al., 2009; Giordano et al., 2006).

Romantic relationships are crucial to adolescents' development. These relationships fulfill numerous goals such as independence and intimacy (Bouchey & Furman, 2003; Sanderson & Cantor, 1995; Zimmer-Gembeck & Petherick, 2006). The purpose of romantic relationships changes during adolescence, from serving a need for affiliation and sexual exploration in early adolescence to providing a source of attachment and trust in late adolescence (Furman & Wehner, 1994). Because these relationships determine adolescents' successful attainment of important developmental objectives, negative relationships or experiences may impact later behavior, attitudes, beliefs and expectations (Connolly, Furman, & Konarski, 2000; Crockett & Crouter, 1995; Deal & Wampler, 1986; Furman, 2002; Magdol, Moffitt, Caspi, & Silva, 1998).

Adolescent romantic relationships are markedly different from the young person's other relationships including those with friends and family. First, romantic relationships are novel (Furman & Wehner, 1994; Giordano et al., 2006). Therefore, adolescents' expectations for their partner's behavior are not fully developed. Furthermore, the qualities of these relationships are different from those to which they may be

accustomed. Compared to peer relationships, which are frequently described as egalitarian (Berndt, 1982; Giordano, 2003), some researchers have found that romantic relationships can involve asymmetry in power and status (Bentley, Galliher & Ferguson, 2007; Giordano et al., 2006; Sousa, 1999). Finally, romantic relationships are a new avenue through which young adolescents develop a sexual and sex role identity (Collins et al., 2009; Furman & Wehner, 1994; Graber & Brooks-Gunn, 2003; Zimmer-Gembeck & Petherick, 2006).

In a sample of 476 students from two high schools, Maxwell, Robinson and Post (2003) found that 35% of adolescents dated one person over a six-month time-span, 39% had 2-4 romantic partners and 18% had five or more partners. Very few of these students (8%) had not dated anyone. These findings suggest that dating is common and important among adolescents. It also suggests that it is common for adolescents to have numerous partners in a short period of time; adolescent relationships are often frequent and brief. Although adolescent relationships are often transitory and short-lived (Collins et al., 2009), adolescents express a strong level of commitment to their romantic partner and experience a sense of loss when the relationship dissolves (Collins et al., 2009; Kaczmarek & Backlund, 1991; Monroe, Rohde, Seeley & Lewinsohn, 1999). Although adolescents' definition of commitment may differ from the definition used by adults, there still exists an intention to persist in such relationships (Rostosky, Welsh, Kawaguchi & Galliher, 1999). The novelty, uniqueness, developmental significance and personal importance of romantic relationships may become problematic as adolescents attempt to develop and maintain a healthy relationship.

Sexual and Physical Violence in Adolescent Relationships

The present study focuses on a sample of young adult women who experienced dating violence during the critical developmental period of adolescence. Thus, a short review of adolescent dating violence follows.

Physical and sexual violence within adolescent romantic relationships is quite common; studies suggest that up to half of all girls have experienced dating violence (Arriaga & Foshee, 2004; Giordano et al., 2010; Halpern et al., 2001; Jackson, Cram & Seymour, 2000; Munoz-Rivas, Grana, O'Leary & Gonzalez, 2009; Temple & Freeman, 2011; Tjaden & Thoennes, 2000; Yan et al., 2010; Young, Grey & Boyd, 2009). Both physical and sexual violence are associated with similar correlates such as negative relationship dynamics and often co-occurs (Katz & Myhr, 2008; Marcus, 2004; Starratt, Goetz, Shackelford, McKibbin & Stewart-Williams, 2008; White et al., 2008). Additionally, both forms of violence may be associated with similar attitudes and behavioral patterns of the perpetrator, putting the victim at risk for both forms of violence (White et al., 2008). Thus, the present study recognizes adolescent dating violence as either physical or sexual aggression. Because emotional and psychological violence are incredibly common and difficult to define, they are not assessed in this study (Jackson, Cram & Seymour, 2000; O'Leary, 1999; Pico-Alfonso et al., 2006; Straus, 1979; 1987).

The present study focuses exclusively on female victims. Although research suggests that some women also perpetrate violence in romantic relationships, the violence against women typically has more dire consequences and is accompanied by stronger negative emotions (Giordano et al., 2010; Hickman et al., 2004; Jackson et al., 2000; Molidor & Tolman, 1998; Pittman & Wolfe, 2002). Additionally, gender roles

impact the perception of violence differently for males and females (Ehrensaft et al., 2003; Feeney & Noller, 1990; Overbeek, Vollebergh, Engels & Meeus, 2003; Schwartz, Patterson, & Steen, 1995; Simon, Eder & Evans, 1992; Wekerle & Wolfe, 1999). This suggests a different process of appraisal associated with dating violence depending on the victim's gender.

Relationship and situational factors can impact the occurrence of dating violence. Adolescent girls are often unable to act in self-preserving ways in response to adolescent dating violence. As mentioned previously, certain characteristics of romantic relationships may contribute to particular appraisals following violence victimization. These characteristics include: the novelty of these relationships; their differentiation from previous relationships with peers and family; the significance of these relationships to developmental goals; and the level of importance adolescents place on such relationships. This may lead to uncertainty and reluctance in effectively resolving conflict, negotiating sexual activity and dissolving unhealthy relationships (Collins et al., 2009; Graber & Brooks-Gunn, 2003; Zimmer-Gembeck & Petherick, 2006).

This assertion has been supported by previous research. According to qualitative work by Livingston et al. (2007), lack of experience with romantic relationships was associated with the sexual victimization of many adolescent girls by their relationship partner because they were unsure of what was expected of them in sexual situations and how to assertively decline sexual activity. Many girls also reported that they dismissed physical violence experienced within their relationships because they thought such interactions were normal or it did not exceed a certain level of "acceptable behavior" (e.g., if having something thrown at her happens frequently, only behavior that

exceeds this is seen as violent; Livingston et al., 2007; Sousa, 1999; Tolman, Spencer, Rosen-Reynoso, & Porche, 2003). Additionally, because adolescents have not had experience with relationship dissolution, they may not be comfortable or confident in breaking apart an unhealthy relationship. Many adolescents report feeling "stuck" in their current relationship, especially when they have been with their partner for a long period of time (Banister & Jakubec, 2004; Rostosky et al., 1999).

Appraisal of Adolescent Dating Violence

As previously mentioned, appraisal of an adolescent dating violence incident may be an important consideration when assessing future functioning. The process of appraisal is explored under the auspice of Lazarus and Folkman's (1984) transactional theory of stress, which is described below.

Lazarus and Folkman (1984) explain a process of appraisal as it relates to the experience of stressors. In their model, the experience of stress is an interdependent process of environmental cues and person-centered factors. Stressful appraisals are those that cause tension between the individual's motives and the resources with which to deal with them. After an experience with the environment, individuals evaluate whether the interaction is stressful and what this means to them (primary appraisal) as well as how they can handle the stressor (secondary appraisal).

Lazarus and Folkman (1984) describe three different types of primary appraisals that can occur after an environment interaction has been deemed taxing to one's capabilities: harm/loss, threat, and challenge. Harm or loss appraisals occur when damage to the person has already happened. Harm appraisals may be met by emotions such as sadness or despair. Threat appraisals occur when harm or loss is anticipated.

These appraisals are typically met by negative emotions such as fear, anxiety and anger. Finally, challenge appraisals occur when individuals feel their resources will be taxed but there is an anticipated positive result. Contrary to threat appraisals, challenge appraisals are met by more positive emotions such as excitement. These three types of appraisal are not mutually exclusive and often co-occur (Lazarus & Folkman, 1984).

Primary appraisal coincides with secondary appraisal (Lazarus & Folkman, 1984). Secondary appraisal involves evaluating how one can manage the stressor. This process involves determining what coping options are available, whether these options will effectively ameliorate the stress and whether one can be effective in carrying out these strategies (Lazarus & Folkman, 1984).

According to Lazarus and Folkman (1984), primary and secondary appraisals interact to determine how the stress is experienced. Both person-oriented factors such as commitment to that which is threatened as well as situational factors such as an assessment of whether or not the situation could have been altered affect how individuals evaluate a stressor.

Appraisal is related to people's motivations and goals (Brandstadter, 1992; Brandtstadter & Rothermund, 2002; Lazarus & Folkman, 1984). Previous research and theory suggests that one of the developmental goals of adolescence is emergence of romantic intimacy (Erikson, 1950; Sanderson & Cantor, 1995). Romantic relationships in adolescence are typically marked by high levels of commitment despite their brevity (Collins et al., 2009; Kaczmarek & Backlund, 1991; Monroe et al., 1999). Furthermore, early romantic relationships during adolescence contribute to relationship schema development and, subsequently, affect future expectations (Furman & Wehner, 1994;

Smith, Welsh & Fite, 2010). Therefore, commitment to a present relationship is closely tied to goals of intimacy. A stronger commitment to a present relationship makes intimacy goals more salient. Experiences within that particular relationship may be translated to adolescents' views of relationships and intimacy in general.

Primary appraisal and secondary appraisal can occur in numerous domains. For example, a single stressor can impact the sense of physical harm and threat (e.g., injury), social harm and threat (e.g., experiencing embarassment in a peer group or losing respect for a loved one) or a harm or threat associated with personal goals and motives (e.g., self-esteem; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986). Dating violence is particularly relevant to the romantic relationship in which it occurs. During the tumultuous time of adolescence, violence can impact one's sense of self and one's relationship schema (Gold, Sinclair, & Balge, 1999). As previously mentioned, the presence of and commitment to a romantic relationship makes the goal of intimacy salient. Having that relationship affected by violence will impact the sense of threat to the goal of intimacy generally and whether or not one has the capability of controlling this goal in the future.

Relationship Commitment and Primary Appraisal of Threat to Future Intimacy

As can be seen in Figure 1, commitment increases the likelihood of appraising a negative relationship event as harmful or threatening (Lazarus & Folkman, 1984). The more committed an adolescent is to a relationship (whether that commitment is to the relationship partner or the relationship generally), the more relevant is the goal of intimacy (Sanderson & Cantor, 1995). When the goal of intimacy is salient, it is more likely that a stressful relationship occurrence will be appraised as a threat to that goal.

Furthermore, the strength of commitment individuals have to the harmed or threatened motivation (i.e., intimacy) will impact the extent to which they will "ward off threats to that commitment" (Lazarus & Folkman, 1984, p. 61). For instance, if an adolescent's relationship is threatened and she is firmly committed to maintaining that relationship, she will go to extreme lengths to salvage that relationship. This may entail engaging in different coping mechanisms and/or shifting her sense of identity in order to maintain the relationship (Brandstadter, 1992; Brandtstadter & Rothermund, 2002). For example, Finkel, Rusbult, Kumashiro and Hannon (2002) found that individuals who were strongly committed to their relationship partner experienced more negative immediate emotional reactions to betrayal. However, they then engaged in more cognitive restructuring of the event and of the partner's potential motives, leading to more forgiveness of betrayal. Appraisal of a romantic relationship experience is dependent upon cognitions and emotions related to the relationship. Furthermore, appraisal is an important predictor for later behavior and attitudes. Thus, the factors that influence commitment are important to identify and understand.

Interdependence theory suggests that individuals evaluate the benefits against the costs associated with a relationship in the context of their expectations (Kelley & Thibaut, 1978). When this comparison is positive, relationship commitment is increased (Kelley & Thibaut, 1978). Adolescents who feel strongly committed to their partners have more trouble dissolving a relationship (Banister & Jakubec, 2004; Monroe et al., 1999; Rostosky et al., 1999). Grounded within interdependence theory, the investment model provides a framework for understanding relationship commitment. According to the investment model, commitment represents a psychological state of dependence on

a relationship partner (Rusbult & Buunk, 1993). Furthermore, commitment predicts how individuals perceive and react to subsequent relationship interactions (Rusbult & Buunk, 1993).

Commitment is partially predicted by high rewards of being in a relationship and few costs. This cost-benefit analysis represents the concept of satisfaction. Satisfaction with a relationship is distinctly different from commitment; satisfaction is an assessment of the rewards and costs of a relationship against an expected outcome for the relationship (Rusbult, 1980; 1983). However, commitment is also increased by high investment in the relationship and few perceived alternatives to it (Rusbult, 1980; 1983). Therefore, relationship factors associated with investment, satisfaction and perceived alternatives are important factors to consider when assessing relationship commitment. Each of these dimensions is briefly described in the following sections.

Relationship investment. Relationship investment has been found to be a strong indicator of relationship commitment (Rusbult, 1980; 1983; Le & Agnew, 2003; Stafford & Canary, 1991). The more a partner has invested in the relationship (e.g., time, energy, money), the more there is to lose and the more relationship dissolution represents “wasted efforts”. Therefore, the young adolescent must weigh her investment in the relationship and what could potentially be lost against the benefits of dissolving an unhealthy relationship (Stafford & Canary, 1991). According to Lund (1985), investment in the relationship and commitment to its continuation better predict long-term stability than love and benefits gained from the relationship.

Relationship satisfaction. Commitment to a relationship is associated with the satisfaction derived from the relationship (Rusbult, 1980; 1983). A meta-analysis of

investment model studies indicates that satisfaction is the strongest predictor of commitment compared to investment and quality of perceived alternatives (Le & Agnew, 2003). Despite experiencing dating violence, a victim may still experience satisfaction in a relationship (Giordano et al., 2010). Giordano et al. (2010) found that, although violent relationships differed from nonviolent relationships in the amount of cheating, verbal conflict and jealousy present, they did not differ in the amount of self-disclosure, which is related to relationship satisfaction (Hendrick, 1981). Furthermore, satisfaction may be derived from the support victims receive in the relationship despite the presence of violence. Victims of violence reported higher levels of provision and receipt of instrumental support in their relationships compared to individuals in nonviolent relationships (Giordano et al., 2010). This suggests that victims of adolescent dating violence may still experience positive benefits of a violent relationship. Additionally, when negative events occur in otherwise satisfying relationships, the actions are often attributed to factors external to the perpetrator, are thought to be unlikely to re-occur, and are considered unintentional and less blame-worthy (Fincham, 2004).

Although satisfaction may still be high in adolescent relationships in which violence has occurred, commitment in such relationships may instead represent "nonvoluntary dependence" (Rusbult & Martz, 1995, p. 559). This form of dependence suggests that an individual's commitment is high despite being dissatisfied with the relationship. In such situations, commitment is driven by investment in the relationship, few perceived attractive alternatives to it and comparatively low dissatisfaction (Rusbult & Martz, 1995). However, previous studies suggest that satisfaction, investment and quality of perceived alternatives are all important predictors of commitment even among

women who have been victimized by their partners (Rhatigan & Axsom, 2006; Rhatigan, Moore & Stuart, 2005; Rusbult & Martz, 1995). Although this form of commitment is important to consider, the present study explores the *first* experience of physical or sexual violence in an adolescent romantic relationship. Thus, a precedent of violence has not been established and the pattern of commitment may represent that found in nonviolent relationships.

Quality of perceived alternatives. Commitment to a relationship decreases when there are better options available (e.g., another relationship, no relationship; Rusbult 1980; 1983). If a better alternative cannot be conceived, however, the individual is more likely to experience the psychological state of commitment or relationship dependence (Rusbult 1980; 1983; Rusbult & Buunk, 1993). The quality of perceived alternatives has been found to significantly predict commitment (Bui, Peplau, & Hill, 1996; Le & Agnew, 2003; Rusbult, 1983). Previous research suggests that quality of perceived alternatives may be a stronger predictor of commitment among those who are less satisfied with their relationships (i.e., women who have been victimized by their partners) compared to those who are more satisfied with their relationships (Rhatigan & Street, 2005).

Alterability of the Situation and Secondary Appraisal of Control over Future Intimacy

As can be seen in Figure 1, perceptions of alterability increase the likelihood of appraising a negative relationship event as avoidable in the future. Victims' attributions for the violence are likely associated with perceived control over outcomes. Specifically, the extent to which factors leading up to the violence are perceived as alterable impact

victims' sense of control over future intimacy, either in this relationship or future relationships. Because the factors leading to aggression in a particular incident of adolescent dating violence can be changed in future situations, victims may view the meaning of this event and the threat that it poses as not being a constant characteristic of romantic relationships. When the violence can be attributed to conditions that are alterable, victims experience greater perceived control over the outcomes and future events.

Based on their review of reasons given for intimate partner violence, Flynn and Graham (2010) constructed the *three-level model for perceived reasons for aggression*. According to this model, when relationship violence occurs, the victim and/or perpetrator can attribute that aggression to numerous factors. These factors include (1) stable characteristics of the perpetrator or victim, (2) intermediate factors such as life stressors, and (3) proximal factors such as situational characteristics or emotions prior to the onset of the violence. The present study focuses on proximal factors because they represent situational antecedents that are amenable to change (described in greater detail below). The victim may identify these factors as potential causes that are alterable. Characteristics of the perpetrator and/or victim such as personality traits or background variables are relatively stable and therefore would usually not be thought of as amenable to change. Compared to proximal factors, victims may feel less control over intermediate factors that could be considered a cause (such as job stress). Furthermore, life stressors are not necessarily considered a direct cause of aggression; instead they may be seen as being a risk factor for victimization (Flynn & Graham,

2010). Proximal factors are those that are considered directly responsible for the violence occurring. These factors may be deemed as controllable by the victim.

Perceived provocation. According to the *three-level model for perceived reasons for aggression*, there are five potential proximal reasons for relationship violence: (a) actions taken by the victim against the partner; (b) the perpetrator's mental, physical or emotional state; (c) as a way of communicating needs or emotions; (d) as a method of control; and (e) because of "hot button" issues (Flynn & Graham, 2010). Perceived provocation of the perpetrator is explained as victims' behavior that may be viewed by them as being associated with one of the numerous reasons for aggression. Each of these potential causes for relationship violence must be assessed for how the victim would perceive her behavior as contributing to it. For example, if relationship violence occurs because the partner wanted to get the victim's attention, this would only be seen as controllable by the victim if she perceived her behavior or actions as contributing to this motivation. A review of these potential causes follows and its potential relationship to victim behavior is explicated. It is important to note that victims' behavior does not *cause* violence against them; there is no excuse for relationship violence. However, because these reasons have been supplied by victims and perpetrators in past research, it is reasonable to suggest that actions related to these factors may be perceived by the victims as a potential cause and alterable in future situations.

Actions taken by the victim against the partner. Flynn and Graham (2010) discuss numerous reasons for relationship violence that stem from reactance to victims' actions. In particular, aggression may be due to retaliation for physical or emotional

hurt, threats to the relationship such as infidelity and sexual refusal. Follingstad et al. (1991) reported that approximately 22% of female victims of dating violence perceived their partners' actions as being motivated by retaliation for being physically hurt first and 40.3% felt their partner was motivated by retaliation for emotional hurt. Furthermore, 31.5% of male domestic violence offenders attributed their violence to their partner being unfaithful; 37.5% attributed their violence to the victim not being fully committed to them (Henning, Jones & Holford, 2005). Although endorsement of sexual refusal as a motive for aggression is low, it has also been noted as a factor leading to relationship violence (Dobash & Dobash, 1984). Previous research also suggests that many college students, especially those high in rape myth acceptance, expect sexual aggression to occur when the victim led the perpetrator on, engaged in some lower levels of sexual activity with him or when the perpetrator was sexually aroused (Morry & Winkler, 2001). Behavior perceived as being associated with these motives may be seen as alterable by the victim. Therefore, the victim may perceive the situation as alterable if she attributes the violence to: her own physical or verbal aggression (e.g., she hit the partner, swore at the partner or argued with the partner); behavior that may have threatened the relationship (e.g., she cheated on the partner, flirted with another boy, or tried to end the relationship); or she "led him on" (e.g., she engaged in lower levels of sexual activity with him then refused to go further).

The perpetrator's mental, physical, or emotional state. According to Flynn and Graham (2010), the anger felt by the perpetrator is credited as a motive for relationship violence in numerous studies. Approximately 40% of female victims of dating violence attribute their victimization to their partner's anger (Follingstad et al.,

1991). Henning, Jones and Holdford (2005) also found that 27.6% of domestic violence offenders attributed their violence to not being able to control their anger. In a qualitative study with urban youth, Johnson et al. (2005) found that many boys explained violence against women as an “emotional catharsis”. Jealousy is also a powerful emotion and has been implicated as a motivation for violence perpetration. About 42% of dating violence victims state their partners were motivated by jealousy (Follingstad et al., 1991). Furthermore, male and female adolescents state that jealousy is a key reason for violence and that it is common for girls to get physically “reprimanded” by their boyfriends if they are seen with another male (Johnson et al., 2005). Alcohol use by perpetrators was also suggested as a reason for violence that is related to their physical state (Flynn & Graham, 2010), however this is discussed in the following section because it is conceptually different from the other factors listed. Although it is unclear what type of victim behavior leads to these emotional states of the perpetrator, it can be assumed that the behaviors listed previously could be related. Additionally, other behaviors that incite the perpetrator (e.g., she annoyed the partner or otherwise made him angry) or make him jealous (e.g., she was talking to another boy or she went to a social event without him) should be considered. Again, anger does not justify aggression, but it may seem alterable to victims if they perceive their behavior as contributing to it.

Communicating needs or emotions. Previous studies have also listed communication of needs or emotions as a reason for relationship violence (Flynn & Graham, 2010). According to Flynn and Graham (2010), the need to get the partner’s attention or to get a point across to the partner is often perceived as a strong motive for

aggression. Eighteen percent of female dating violence victims list “to get attention” as one of the perpetrators’ motives for their aggression (Follingstad et al., 1991). Additionally, 32% of female victims of physical violence state their partner was motivated by the need to “get through” to them (Carrado et al., 1996). Victims’ behaviors related to these motives for aggression may be seen as alterable. Thus, the victim may have been ignoring the partner or could not understand what the partner was saying or requesting of them.

Method of control. Flynn and Graham (2010) suggest that a motive for aggression may be the need to exert control and power. Carrado et al. (1996) found that among female victims of relationship violence, 29% attributed it to the partners’ attempts to make them stop doing something and 51% attributed it to the partners’ attempts to make them do something. Similarly, Follingstad et al. (1991) found that 55.6% of female victims perceived their partners’ motives as a desire to get control over them. Therefore, victims’ behaviors that question or threaten the partners’ power in the relationship may be perceived as leading to the violence. They also found that 26.6% of the victims felt the perpetrator was punishing them for wrong behavior (Follingstad et al., 1991). Thus, the victim may have refused to do something the partner wanted her to do, disagreed with the partner over an important issue or embarassed him in front of his peers.

Hot button issues. Finally, Flynn and Graham (2010) describe “hot button” issues as reasons given for relationship violence. Although the “hot button” issues of money, chores, and childcare described in previous studies are generally unique to marital relationships (Flynn & Graham, 2010), certain issues may still be points of

contention in adolescent dating relationships. Therefore, victims may perceive bringing up a sensitive topic to their partner as behavior contributing to their victimization.

Alcohol consumption by victim and partner. Flynn and Graham's (2010) model suggests that intoxication is a reason for aggression associated with the perpetrator's mental or physical state. However, the partner's intoxication is likely not perceived as related to the victim's actions, although it can be seen as alterable; thus, it does not fit well with the other items that are included in the scale assessing perceived provocation. Furthermore, the victim's intoxication was not included in Flynn and Graham's model as a reason for aggression, although previous studies suggest that it could be perceived as a potential cause.

Alcohol is closely associated with dating violence. Temple and Freeman (2011) found that individuals who consumed alcohol or reported binge drinking in the preceding month were much more likely to report being hit or physically injured by a relationship partner in the preceding year. Yan et al. (2010) also found that binge drinking in the previous year greatly increased the risk of experiencing physical dating violence during that year. It is unclear from both studies if alcohol contributed to the specific instance of physical violence. Additionally, sexual violence often occurs when the victim, perpetrator or both have been drinking (Abbey, McAuslan, Zawacki, Clinton & Buck, 2001; Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004).

If the victim determines that violence happened because she had been drinking, this behavior would usually be considered external to the victim, able to be controlled, and, therefore, alterable. The victim may determine that such victimization can be avoided in the future by not drinking or not drinking as much. Henning et al. (2005)

found that 20.1% of male domestic violence offenders attributed their aggression to the victim's problem with alcohol or drugs. When asked to determine the cause of sexual violence, about one out of four victims reported alcohol to be a major contributing factor, although it was unclear if they were referring to the partner's drinking or their own (Jackson et al., 2000). Previous research suggests that rape victims are blamed more for their victimization when they were consuming alcohol (Sims, Noel, & Maisto, 2007). Therefore, individuals may view alcohol consumption by victims of violence as relinquishing control in intimate situations. This cultural myth likely affects the victims as well, leading to a similar view of their own behavior. Incapacitation due to high doses of alcohol may lead to an inability to resist unwanted sex (Abbey et al., 2004) and the victims may recognize this incapacitation as a factor leading to sexual violence. When alcohol is considered the contributing factor, less blame is placed on the dynamics of the relationship itself or characteristics of the perpetrator, and instead on the victim's actions. These actions, however, are alterable and can potentially be controlled in future situations.

When the partner's drinking is considered a primary cause of physical or sexual violence, his aggression may be perceived as a consequence of intoxication rather than indicative of his personality, beliefs or character. Flynn and Graham (2010) included intoxication as a perceived cause of relationship violence because of its effect on the perpetrator's mental and physical state. Carrado et al. (1996) found that the influence of alcohol was listed as a reason for relationship violence by 45% of female victims. Similarly, 11.3% of male domestic violence offenders attributed their violence to a problem with alcohol or drugs (Henning et al., 2005). The victim may justify the behavior

and expect that it could be different in the future as long as the perpetrator avoids alcohol. Thus, the victim may sense that future situations can be different and express greater control over achieving healthy intimate relationships in the future.

Romantic Relationship Attachment Following Adolescent Dating Violence

As depicted in Figure 1, this study examines the effects of primary and secondary appraisal of adolescent dating violence on anxious and avoidant attachment in young adulthood. Because of this hypothesized connection, attachment theory is reviewed below.

Attachment is one of a set of evolutionary behavioral and, consequently, cognitive and affective systems inherent to human nature alongside affiliation, sexual mating, exploration and caregiving (Bowlby, 1958). Bowlby (1958) suggested that attachment is the most important system, particularly since it is first evoked in infancy when the child is entirely dependent on others for survival. The drive for attachment produces predictable goal-oriented behavior aimed toward achieving a particular outcome (e.g., proximity; Ainsworth, 1969; Ainsworth & Bowlby, 1991; Bowlby, 1958). This instinctual dependence develops into more complex bonding, with behavioral, cognitive and affective components (Bowlby, 1958; Mercer, 2011; Schneider, 1991). Through interaction with an important caregiver (or multiple principle caregivers; Mercer, 2011) an affectional bond toward that target individual is formed (Mercer, 2011; Schneider, 1991).

This bond is not always adaptive. Based on caregivers' typical responses to chidren's behavior, attachment can be categorized as either secure or insecure (e.g., anxious, avoidant; Schneider, 1991). When children are securely attached to a

caregiver, they use the caregiver as a secure base from which to confidently explore their surroundings and rely on the caregiver to provide reassurance and safety when necessary (Mercer, 2011; Schneider, 1991). Insecure attachment is typically seen when attachment figures fail to reciprocate attachment behavior and appropriately respond to the child's needs (e.g., failure to respond consistently to behavioral pleas for affection or comfort; Schneider, 1991). Insecure attachment is expressed through maladaptive behavioral interactions with the caregiver, such as excessive attention-seeking or avoidance of affection (Schneider, 1991). Attachment experiences and interactional patterns lead to internal working models, which are cognitive schema that represent the expected relational behavior of the target and related caregivers as well as one's own value as a recipient of care and affection (Schneider, 1991). Internal working models are expected to affect future relational behavior and are considered relatively stable (Hazan & Shaver, 1987; Schneider, 1991).

Individuals exhibit attachment behavior in romantic relationships as well as the parent-child relationship. Hazan and Shaver (1987) proposed that early attachment experiences affect attitudes and behaviors in adult romantic relationships. The same attachment patterns that are relevant to the parent-child relationship are also found in romantic relationships. Hazan and Shaver also suggest that childhood attachment patterns may persist into adulthood. However, it is likely that working models are revised with subsequent friendship and romantic experiences (Mercer, 2011; Schneider, 1991). Research suggests that adult attachment style is more highly correlated with recalled parent-child relationship characteristics among younger participants compared to older participants (Hazan & Shaver, 1987). This suggests that, as participants age,

their attachment style is influenced by experiences beyond parental relationships (Fraley & Brumbaugh, 2004). Furthermore, Hazan and Shaver state: “attachment theory includes the idea that social development involves the continual construction, revision, integration, and abstraction of mental models” (p. 523).

Previous studies are inconsistent regarding the stability of romantic attachment. External events that are proposed to possibly influence attachment stability include change in relationships as well as significant life events or stressors. As it relates to the present study, both lines of inquiry are relevant since dating violence is a poignant relationship event. The trajectory of attachment behavior is believed to be somewhat canalized or buffered; although experiences may cause attachment systems to temporarily divert from what is typical, they will eventually regain their normal course which is known as homeorhesis (Fraley & Brumbaugh, 2004). This consistency is believed to be driven by the working models that were formed based on parent-child experiences (Fraley & Brumbaugh, 2004; Fraley, Vicary, Brumbaugh & Roisman, 2011). Fraley et al. (2011) found variability in romantic attachment across time. Change must be possible for the system to be adaptive, which is a core proposition of the theory (Bowlby, 1958; Fraley & Brumbaugh, 2004). Relatedly, according to Hazan and Shaver (1994), change is more likely to move in the direction of security as long as it is attainable given the inherent drive for this type of attachment.

Previous studies that confirm the alterability of attachment styles suggest that traumatic events may be particularly important, especially in change toward insecure attachment (Cozzarelli et al., 2003; Fraley & Brumbaugh, 2004; Mikulincer, Ein-Dor, Solomon & Shaver, 2011). Certainly, the concept of canalization suggests that inocuous

experiences only slightly divert developmental paths, which readily correct themselves; however, intense experiences may be enough to alter individuals' trajectories and reshape their working models (Fraley & Brumbaugh, 2004). Previous research suggests that sexual violence is associated with movement from secure to insecure attachment. Cozzarelli et al. (2003) found that women who moved from a secure to insecure attachment style over a two year time period were more likely to have experienced rape or assault during that time compared to those who remained insecure or remained secure.

Considering the possibility that romantic attachment is a labile construct, it is important to assess how developmentally poignant experiences such as adolescent dating violence can impact adult romantic attachment. Hazan and Shaver (1994) suggest that the transfer of attachment processes to alternate attachment figures such as romantic partners is gradual. During adolescence, the individual may still utilize the parent or caregiver as a secure base, but also use peers and romantic partners to fulfill the need for proximity and support (Hazan & Shaver, 1994). Violence from a potential attachment figure represents a violation of these needs, particularly support, comfort and safety. Furthermore, change in working models may be more likely during adolescence compared to adulthood due to the shallower entrenchment of typical beliefs and expectations (Fraley & Brumbaugh, 2004). Thus, individuals who experienced a traumatic event like sexual assault or physical violence from a partner during a developmental period in which perceptions of romantic relationships are being established may develop negative internal working models of future relationships and

partners. They may approach future relationships insecurely by either avoiding intimacy or anxiously attaching themselves to romantic partners.

As previously stated, the experience of violence in an adolescent dating relationship may elicit a sense of threat to the developmental goal of intimacy. This essentially represents an individual's capacity to establish a secure relationship with future partners – an internal working model of romantic relationships. The sense of threat to intimacy may elicit attachment behaviors and be related to increases in insecure attachment. Individuals' working models are called into question and are liable to change. However, the perception that one has control over establishing a secure relationship after having experienced violence perpetrated by a romantic partner in adolescence may be inversely associated with insecure romantic attachment in adulthood.

Goals and Hypotheses of Present Study

This study has two primary goals: 1) to create three new scales that will assist in hypothesis testing and 2) to utilize structural equation modeling to cross-sectionally predict adult romantic attachment based on responses to an adolescent dating violence incident. The present study recognizes physical and sexual aggression as adolescent dating violence. Specific hypotheses are listed below.

Scale construction. The first goal of the study was to create three new scales to aid in hypothesis testing.

Perceived provocation scale. It was hypothesized that the items developed for the perceived provocation scale would yield **(H1)** high reliability. No a priori hypotheses were developed regarding possible subscales. Because these items were based on

seemingly discrete behaviors posed by Flynn and Graham's (2010) model, it was possible that multiple components would emerge during principal components analysis.

Perceptions of alterability scale. It was expected that the items developed for the perceptions of alterability scale would yield **(H2)** a single component and **(H3)** high reliability.

Control over future intimacy scale. It was expected that the items developed for the control over future intimacy scale would yield **(H4)** a single component and **(H5)** high reliability.

Bivariate relationships. It was hypothesized that scales associated with the investment model would be highly intercorrelated. Specifically, **(H6)** investment was expected to be positively correlated with satisfaction, **(H7)** commitment and **(H8)** inversely to quality of perceived alternatives. Satisfaction was expected to be **(H9)** positively correlated with commitment and **(H10)** inversely to quality of perceived alternatives. Quality of perceived alternatives was expected to be **(H11)** inversely related to commitment. It was expected that **(H12)** perceived provococation, **(H13)** victim's intoxication and **(H14)** partner's intoxication were positively correlated with perceptions of alterability. Commitment was expected to be **(H15)** positively correlated with threat to future intimacy. Perceptions of alterability were expected to be **(H16)** positively correlated with control over future intimacy. Threat to future intimacy was expected to be positively correlated with both **(H17)** anxious romantic attachment and **(H18)** avoidant romantic attachment. Finally, control over future intimacy was expected to be inversely correlated with both **(H19)** anxious romantic attachment and **(H20)** avoidant romantic attachment.

Structural equation modeling. The second primary goal of the study was to predict adult romantic attachment based on responses to an adolescent dating violence incident. Structural equation modeling was utilized to achieve this goal.

Confirmatory Factor Analysis (CFA). It was hypothesized that the CFA would **(H21)** provide good fit according to the fit criteria described below. It was also hypothesized that the indicators would **(H22)** load significantly on the associated construct. Finally, **(H23)** the bivariate relationships indicated above were expected to be found in the CFA.

Structural model analysis. As can be seen in Figure 1, **(H24)** relationship investment and **(H25)** relationship satisfaction were expected to be related to greater commitment. Quality of perceived alternatives to the partner was hypothesized to be **(H26)** negatively associated with commitment to the relationship. Furthermore, **(H27)** perceived provocation prior to the violent incident as well as **(H28)** victim's and **(H29)** partner's intoxication were expected to be positively related to perceptions of alterability. Commitment was expected to be related to **(H30)** greater primary appraisal of threat to future intimacy. Perceptions of alterability were expected to be **(H31)** positively associated with secondary appraisal of control over future intimacy. Finally, primary and secondary appraisals (i.e., threat appraisals and perceptions of future control) were expected to relate to insecure attachment in adult romantic relationships. Primary appraisal of threat to future intimacy was expected to be positively associated with both **(H32)** anxious romantic attachment and **(H33)** avoidant romantic attachment. Secondary appraisal of control over future intimacy was hypothesized to be negatively

associated with both **(H34)** anxious romantic attachment and **(H35)** avoidant romantic attachment.

Model comparison. The CFA and structural model were compared. It was expected that **(H36)** the structural model would not fit significantly worse than the CFA (see criteria below).

METHOD

Participants

The study included 209 adolescent dating violence victims from a larger sample of 445 undergraduate women at Wayne State University. Participants received extra credit toward an applicable psychology course in exchange for their participation. Scale construction was conducted on the full sample and confirmed in the subsample of victims. The primary analyses were then conducted on only the subsample of victims. Thus, information regarding both the full sample and subsample is provided. The full sample ranged in age from 18 to 24 (*M* = 19.83; *SD* = 1.51). The subsample of victims of dating violence ranged in age from 18 to 24 (*M* = 19.67; *SD* = 1.48). See Table 1 for other demographic information.

Procedure

The full study was hosted through online survey sites. Participants were informed of the survey through a posting on the psychology participant pool website. Participants were required to have been in a "heterosexual dating relationship" between the ages of 14 and 18. In order to assess dating history, participants were asked if they were in at least one exclusive romantic relationship with someone of the opposite sex (i.e., had a boyfriend) for at least one month between the ages of 14 and 18. They were permitted to complete the survey at any computer and location they wished. A prompt was included at the beginning of the survey encouraging the participant to choose a private location since the survey contained sensitive information about dating, sex and relationships. Prior to beginning the survey, participants were required to provide consent electronically. No identifying information was linked with the survey. Participants received credit for their participation that they could apply to any

Table 1

Full Sample and Adolescent Victim Subsample Demographics

	Full Sample (n = 445)		Adolescent Victim Subsample (n = 209)	
Variable	n	%	n	%
Ethnicity				
American Indian, Native American or Alaskan Native	3	1%	--	--
Asian or Pacific Islander	46	10%	16	8%
Black or African American	99	22%	55	26%
Biracial or Multiracial	15	3%	5	2%
Other	27	6%	11	5%
White or Caucasian	216	49%	108	52%
Declined to Answer	39	9%	14	7%
Relationship Status[a]				
Exclusive Dating Relationship	206	46%	109	52%
Single and Not Exclusively Dating	179	40%	74	35%
Engaged	16	4%	7	3%
Living with Partner	19	4%	10	5%
Married	6	1%	2	1%
Other	7	2%	2	1%
Declined to Answer	12	3%	5	2%

Note. [a] Relationship status at the time of the survey.

psychology class for which it was an option.

Measures

Three scales were developed for the present study. As previously mentioned, scale construction for the present study was conducted first on the full sample and confirmed in the sample of victims. The factor structure and internal consistency reliability of these three measures were also assessed in a separate sample of participants. See Appendix A for a review of scale construction in the separate sample. Because the primary analyses assess only the subsample of victims, scale reliability is reported only for the victim subsample. See Appendix B for a copy of all measures.

Adolescent romantic relationship. Based on previous research, a romantic relationship was defined as one in which the partner was *someone you liked and who liked you back* (Giordano et al., 2006). In order to clarify this for participants, the terms *boyfriend*, *dating*, *seeing* and *"hanging out with" each other* was included after this definition. For follow-up questions regarding the incident of interest, the partner was referred to as their "boyfriend". Participants were informed of this descriptive shift by stating: "For clarity, we will refer to this person as your boyfriend, even though it may not have been 'official'."

Adolescent dating violence victimization. Adolescent dating violence was defined as having experienced physical or sexual violence in a romantic relationship between the ages of 14 and 18. The Sexual Experiences Survey (SES) was used to assess sexual violence victimization (Koss et al., 2007). The SES contains a number of unwanted sexual acts from forced sexual contact to unwanted vaginal, oral and anal sex. It also contains a range of tactics including verbal coercion, use of alcohol and

physical force. Participants were asked to indicate how many times they experienced each form of unwanted sex, with response options ranging from 1 (*never*) to 4 (*three or more times*). Each form of unwanted sex (combining across tactics and types of sex) was followed by two questions: (a) How many times did this happen with someone you liked and who liked you back (i.e., a boyfriend or someone you were "seeing") when you were between the ages of 14 and 18?; and (b) How many times with anyone since age 14? (this includes times already mentioned and any other incidents with other people since you were 14 years old). For the present study, only responses to the first question (representing the definition of adolescent dating violence in this study) are included.

The Conflict Tactics Scale (CTS) was used to assess physical violence victimization (Straus, 1987). Participants were presented with questions in a similar format to that used for the SES. Participants were asked to indicate how many times they experienced each form of physical violence victimization, with response options ranging from 1 (*never*) to 4 (*three or more times*). Each form of violence was followed by two questions: (a) How many times did this happen with someone you liked and who liked you back (i.e., a boyfriend or someone you were just "seeing") when you were between the ages of 14 and 18?; (b) How many times with anyone since age 14? (this includes times already mentioned and any other incidents with other people since you were 14 years old). For the present study, only responses to the first question (representing the definition of adolescent dating violence in this study) are included. Items include tactics such as "threatened to hit or throw something at you" and "slapped you." Because physical violence is of interest for this proposal, items that are associated with minor and severe physical violence are considered indicative of victimization. The

criteria are slightly modified from the original scale to include two other more minor forms of aggression; this has been done because the items appear serious enough to cause distress. Therefore, these incidents include tactics from “threatened to hit or throw something at you” to “used a knife or fired a gun.”

If participants endorsed any SES item as perpetrated by *someone they liked and who liked them back between the ages of 14 and 18*, they were classified as a victim of adolescent sexual dating violence. Similarly, if participants endorsed any CTS item that represents physical violence as perpetrated by *someone they liked and who liked them back between the ages of 14 and 18*, they were classified as a victim of adolescent physical dating violence. Given that there were no hypotheses differentiating physical and sexual violence, for this study, participants who experienced either or both were analyzed together.

In order to elicit memories of the first incident of adolescent dating violence, participants were prompted with: *We would like you to think about this incident as you answer the following questions. Therefore, please indicate what incident happened at the earliest age.* Branching logic was built into the questionnaire so that only those incidents that the participants endorsed were shown to them. They were asked to indicate which experience they would be referring to in the questions that follow. The initial survey hosting site had limited programming capacity, so a series of self-report checkpoints were built into the programming logic. The questionnaire was transferred to a new hosting site midway through data collection; this survey hosting site had a more extensive programming logic capacity. Thus, the checkpoints were no longer needed.

After being prompted to indicate which incident happened at the earliest age, participants were asked to indicate their *age* at the time of the incident.

Investment model constructs. Rusbult et al.'s (1998) investment model scales were utilized for the present study. All of the authors' instructions were followed. The scales were modified by replacing the term "partner" with "boyfriend", making the items past tense and having the items begin with the phrase "at that time". Participants were told to consider how they felt about their relationship *immediately before the incident occurred.*

Relationship investment. Rusbult et al.'s (1998) 5-item investment scale was used. An example item is: "At that time, I felt very involved in our relationship – like I had put a great deal into it". Responses options ranged from 1 (*Disagree completely*) to 5 (*Strongly agree*). Cronbach's alpha for the present study was .88 for the subsample of victims.

Relationship satisfaction. Rusbult et al.'s (1998) 5-item satisfaction scale was used. An example item is: "At that time, I felt satisfied with our relationship". Responses options ranged from 1 (*Disagree completely*) to 5 (*Strongly agree*). Cronbach's alpha for the present study was .94 for the subsample of victims.

Quality of perceived alternatives. Rusbult et al.'s (1998) 5-item quality of alternatives scale was used. An example item is: "At that time, the people other than my boyfriend with whom I might have become involved were appealing". Responses options ranged from 1 (*Disagree completely*) to 5 (*Strongly agree*). Cronbach's alpha for the present study was .90 for the subsample of victims.

Relationship commitment. Rusbult et al.'s (1998) 6-item commitment scale was used. An example item is: "At that time, I was committed to maintaining my relationship with my boyfriend". Responses options ranged from 1 (*Disagree completely*) to 5 (*Strongly agree*). Cronbach's alpha for the present study was .90 for the subsample of victims.

Primary appraisal of threat to future intimacy. Primary appraisal of threat to future intimacy was assessed with a single item. Participants were asked to indicate the extent to which a list of goals or desires was involved or threatened in the incident. This was followed by numerous stakes. The stake important for the present study is: "Ability to have a loving relationship in the future." Responses options ranged from 1 (*Does not apply*) to 5 (*Applies a great deal*). This approach has been used in previous research on stress appraisals (Dunkel-Schetter, Folkman & Lazarus, 1987; Folkman, Lazarus, Dunkel-Schetter, et al., 1986; Folkman, Lazarus, Gruen, et al., 1986).

Perceived provocation. Perceived provocation during the incident was assessed with a new scale consisting of 10 items. Items are listed in the results section in Table 3. Response options ranged from 1 (*Completely disagree*) to 5 (*Completely agree*). Cronbach's alpha was .83.

Victim's intoxication. Participants were asked to indicate if they consumed alcohol in the four hour period prior to the incident. In the survey on the first hosting site, participants who indicated that they had consumed alcohol or were unsure were asked to indicate how intoxicated they were at the time of the incident. Nondrinkers were coded as *not at all intoxicated*. All participants were asked this question in the survey on

the second hosting site. Response options ranged from 1 (*Not at all intoxicated*) to 5 (*Very intoxicated*). Level of intoxication was the measure used for the current analyses.

Partner's intoxication. Participants were asked to indicate if their boyfriend consumed alcohol in the four hour period prior to the incident. In the survey on the first hosting site, participants who indicated that their boyfriend had consumed alcohol or responded that they were unsure were then asked to indicate how intoxicated they were at the time of the incident. Nondrinkers were coded as *not at all intoxicated*. All participants were asked this question in the survey on the second hosting site. Response options ranged from 1 (*Not at all intoxicated*) to 5 (*Very intoxicated*). Level of intoxication was used for the present analyses.

Perceptions of alterability. Perceptions of alterability were assessed by creating a new scale. The final scale consisted of six items. Items are listed in the results section in Table 10. Response options ranged from 1 (*Not at all true*) to 5 (*Very much true*). Cronbach's alpha was .86.

Secondary appraisal of ability to control future intimacy. To assess secondary appraisal, items from Sanderson and Cantor's (1995) *Social Dating Goals Scale* were used to construct a new scale. Sanderson and Cantor's scale consists of 13 items that assess the importance of independence (four items) and intimacy goals (nine items) as they relate to relationships. Although the existing scale provided the desired intimacy goals, it did not frame them in terms of control appraisals. An example from the original scale is: "In my dating relationships, I try to date people with whom I might fall in love" (intimacy goal). In the current study, the final scale consisted of eight items based on their intimacy items; one of their items was omitted because it didn't coincide with the

aims of this measure. Participants were asked to think back to immediately after the incident occurred when responding to the items. A modified sample item is: “I knew I had control over having a fulfilling relationship.” Items are listed below in the results section in Table 14. Response options ranged from 1 (*Completely disagree*) to 5 (*Completely agree*). Cronbach’s alpha was .97.

Romantic relationship attachment. Brennan et al.’s (1998) 36-item Experiences in Close Relationships Questionnaire was used to assess attachment style. This scale consists of 18 items assessing the two subsets of attachment (i.e., anxiety and avoidance). Sample items include: “I worry about being abandoned” (anxiety) and “I prefer not to show a partner how I feel deep down” (avoidance). Response options ranged from 1 (*Disagree strongly*) to 5 (*Agree strongly*). Cronbach’s alpha for the anxiety subscale was .93 for the subsample of victims; Cronbach’s alpha for the avoidance subscale was .92.

RESULTS

Preliminary Data Analyses

General data cleaning. Data were obtained through three phases of collection. The first phase of data collection occurred during the Spring/Summer 2012. The second phase of data was collected during Fall 2012 using a new hosting site. The final phase of data was collected during Winter 2013. Prior to combining the datasets, they were inspected for problematic cases separately. For all three phases, a total of 719 individuals clicked on the survey link to begin the survey; this number was reduced to 445 after data cleaning. See Table 2 for information regarding case deletion.

The first and second phases of data were cleaned concurrently. The total sample size was initially 448 for these first two phases. This was problematic, as only 400 timeslots were permitted through the psychology participant pool site. The first hosting site allowed individuals to click the link multiple times. Furthermore, individuals contacted the PI near the end of the first wave of data collection stating that they were redirected from the site after they completed approximately 30% of the survey. Because of the potential for duplicate responses, participants' demographics were carefully screened. No overlapping cases were identified. It was presumed that most of the individuals who were able to click on the survey link multiple times also did not complete the full survey and would therefore be deleted during the data cleaning procedure.

Most variables were missing a small amount of data (<5%). However, because some variables were missing more, missing values analysis with expectation maximization estimation of missing data was performed (Tabachnick & Fidell, 2007). This was done with two large subsets of the data: scales pertaining to the incident

Table 2

Number and Percent of Cases Deleted Due to Screening Criteria to Achieve Final Full Sample Size of 445

	Phase 1 & 2		Phase 3		Combined	
Reason for case deletion	n	%[c]	n	%[c]	n	%[c]
Initial sample size	448		271		719	
Missing data (>20%)	162	36%	84	31%	246	34%
Time taken to complete (<20 Minutes)[a]	8	3%	3	2%	11	2%
Combination of questionable data, percentage of missing data and time taken to complete (when available)	6	2%	2	1%	8	2%
Age (>24)[b]	--	--	--	--	9	2%
Sample size in analyses	272		182		445	

Note. Phase 1 & 2 initial *n* = 448. Phase 3 initial *n* = 271. These steps were taken in consecutive order. Parenthetical values represent the criteria used for deletion. [a] Time taken to complete the survey was only available through the second hosting site (Phases 2 and 3). [b] Participants removed based on age were done for the full combined dataset (Phases 1, 2 and 3 combined). The percentage indicates the amount of participants removed out of *n* = 454. [c] Represents % from preceding sample size after the previous data cleaning step.

(relationship commitment; perceptions of alterability; etc.) and scales not pertaining to the incident (romantic relationship attachment). Little's MCAR test (Little, 1988) was significant for both sets of analyses, suggesting that data were not missing completely at random for either the scales pertaining to the incident or the scales not pertaining to the incident, $\chi 2$ (58,141) = 59,850.54, $p < .001$; $\chi 2$ (24,917) = 26,115.93, $p < .001$, respectively. However, expectation maximization estimation is appropriate for data that are missing at random and it is impossible to determine if data are missing at random or missing not at random (Newman, 2010). Furthermore, large subsets were used to provide better estimates and incorporate multiple auxilliary variables (Newman, 2010). Because large subsets were used, some estimates fell slightly outside the appropriate scale range (e.g., 6 in a scale of 1 to 5). These values were truncated to be the lowest or highest acceptable value.

For the intoxication variables, some missing data were planned as part of the branching logic. Thus, individuals who missed this variable but indicated that they had not consumed any alcohol in the four hours prior to the incident were recoded as *not at all intoxicated*. Missing data were then assessed. Approximately 2% of cases were missing values for victim's intoxication and 6% of cases were missing values for partner's intoxication. Expectation maximization was used to estimate missing values; the subset of incident level variables was used for estimation (Newman, 2010). Values that fell outside of the appropriate scale range were truncated.

The distribution of variables was assessed for normality. Four variables were transformed due to skewness (a value over 2.0; Tabachnick & Fidell, 2007). Three variables were in the perceived provocation scale. Log transformation adequately

reduced the skew for the items “I hit my boyfriend”; “I cheated on my boyfriend”; and “I embarrassed him in front of his peers” among the full sample. This transformation reduced skew such that it was only slightly above 2.0; more extensive transformations were not pursued in order to ensure ease of interpretability. Among the subsample of victims, *victim’s intoxication* was log transformed to sufficiently reduced skew (below 2.0).

Dating violence data cleaning. Due to logic errors when the survey was initially transferred to the second hosting site, 11 participants were asked follow-up questions regarding a disagreement with an adolescent partner regardless of their victim status. All of these participants were recoded as nonvictims. For the questionnaire hosted under the first survey site, victim status was determined by a combination of an affirmative response to the self-report checkpoint item as well as responses to the corresponding SES and CTS items. Nonetheless, a few individuals still responded to the following questions by describing an violent incident. It was determined that, though they may have noncorresponding items at one point in the SES and CTS, they did report a violent incident elsewhere. Therefore, these participants were recoded as victims (n = 3). Open-ended responses indicating what happened during the violent incident were assessed. Four participants either expressed that they entered a response incorrectly, they did not experience the incident, or they described an incident with someone other than a romantic partner (e.g., family member). These participants were recoded as nonvictims. Because violence during adolescence was assessed, experiences that occurred before the age of 14 or after the age of 18 were excluded from analyses. Based on this criteria, 35 participants were recoded as nonvictims.

Three hundred thirty-six participants completed the entire SES and CTS. One hundred eighteen missed at least one item. Missing data were visually assessed to determine patterns. Most missing data corresponded with matrix patterns (e.g., missing second half of matrix for SES items). No participants were removed based on missing data in the SES or CTS; missing data on the SES and CTS were recoded as *never experienced*. This was determined to be the most conservative option while still retaining the largest participant sample. After cleaning the data, 47% of the sample was categorized as adolescent dating violence victims (*n* = 209).

Descriptive information. Participants were, on average, 16 years old when the violent incident occurred (*M* = 16.37; *SD* = 1.30). The length of time since the incident occurred ranged from less than one year to 9 years (*M* = 3.30; *SD* = 1.96). Sixty-five percent of the sample recalled an incident of sexual violence (*n* = 129); whereas, 35% recalled an incident of physical violence (*n* = 68). Thirty-eight percent experienced some form of unwanted sexual contact (*n* = 75); 13% experienced unwanted penetrative sex (*n* = 26); 14% experienced attempted but not completed unwanted penetrative sex (*n* = 28); 33% experienced minor physical violence (*n* = 65); and 2% experienced severe physical violence (*n* = 3). In further exploring the type of unwanted sex that was experienced by the majority of the sample, 60% experienced some form of unwanted sexual activity when the perpetrator used verbal coercion (*n* = 77); 21% experienced some form of unwanted sex when they were intoxicated (*n* = 27); and 19% experienced some form of unwanted sex when the perpetrator used force or threats of force (*n* = 25).

Scale construction. Scale building proceeded through three primary analyses for each scale: assessment of bivariate correlations; principal components analysis (PCA); and reliability analysis.

Perceived Provocation Scale (H1). Descriptive information for perceived provocation scale items for both the full sample and the subsample of victims is provided in Table 3. Bivariate relationships among the items in the perceived provocation scale for the full sample are provided in Table 4. No items were removed based on visual inspection of the correlation matrix. Three subscales were suggested by the correlation matrix. One subscale appears to assess verbal provocation; one subscale assesses threatening the relationship by interacting with another boy; and one subscale seems to assess threatening his authority.

PCA with varimax rotation was used because factors were not expected to correlate based on the nature of the scale. Three components were extracted with an eigenvalue greater than one. Visual inspection of the scree plot suggests two components. Communalities were sufficiently high (above .30), although variance in "I hit my boyfriend" was comparatively low (.33). The high communalities suggest that the extracted components explain an acceptable amount of variance in the items.

Factor loadings were assessed in the rotated component matrix. As can be seen in Table 5, three factors are supported by the analyses. As previously mentioned, three components appear to assess a verbal provocation, threatening the relationship by interaction with another boy and threatening the boyfriend's authority. The three components explain 57.12% of the variance. However, inspection of the rotated

Table 3

Descriptive Information for Perceived Provocation Scale Items

	Full Sample (n = 445)					ADV Victim Subsample (n = 209)				
	Observed Range	*M*	*SD*	Skew	Kurtosis	Observed Range	*M*	*SD*	Skew	Kurtosis
1. I hit my boyfriend.	1-5	1.32	.84	2.98	8.57	1-5	1.48	1.04	2.30	4.27
2. I swore at my boyfriend.	1-5	2.25	1.41	.77	-.81	1-5	2.55	1.54	.45	-1.34
3. I argued with my boyfriend.	1-5	2.99	1.40	.01	-1.30	1-5	3.08	1.43	-.07	-1.34
4. I cheated on my boyfriend.	1-5	1.33	.90	2.88	7.46	1-5	1.34	.90	2.77	6.91
5. I flirted with another boy.	1-5	1.75	1.15	1.48	1.12	1-5	1.87	1.23	1.25	.34
6. I tried to break up with my boyfriend.	1-5	2.07	1.45	1.00	-.53	1-5	2.19	1.47	.80	-.89
7. I led him on sexually.	1-5	1.62	1.13	1.83	2.27	1-5	1.89	1.32	1.28	.29
8. I annoyed or pestered him.	1-5	1.88	1.18	1.14	.12	1-5	1.85	1.16	1.15	.11
9. I was hanging out with another boy.	1-5	1.58	1.11	1.94	2.68	1-5	1.62	1.12	1.80	2.14
10. I went to a party or some other social event without him.	1-5	1.91	1.36	1.22	.03	1-5	2.09	1.45	.93	-.66
11. I was ignoring him.	1-5	1.80	1.26	1.45	.84	1-5	1.84	1.27	1.37	.57
12. I refused to do something that he asked me to do.	1-5	2.07	1.42	1.03	-.38	1-5	2.31	1.48	.72	-.97
13. I disagreed with him on an issue that was important to him.	1-5	1.97	1.34	1.11	-.17	1-5	1.99	1.31	1.04	-.31
14. I embarassed him in front of his peers.	1-5	1.45	.99	2.36	4.75	1-5	1.53	1.07	2.06	3.20
15. I brought up an issue that he didn't want to talk about.	1-5	2.10	1.43	.94	-.61	1-5	2.23	1.49	.74	-1.01

Note. Items 1, 4 and 14 were transformed for proceeding analyses. Descriptive information provided indicates nontransformed values. Nonvictims were asked to recall an argument or disagreement with a adolescent romantic partner.

Table 4

Intercorrelations Among Perceived Provocation Scale Items (n = 445)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. I hit my boyfriend.	--													
2. I swore at my boyfriend.	.45**	--												
3. I argued with my boyfriend.	.28**	.67**	--											
4. I cheated on my boyfriend.	.38**	.29**	.16**	--										
5. I flirted with another boy.	.33**	.36**	.25**	.64**	--									
6. I tried to break up with my boyfriend.	.30**	.47**	.40**	.39**	.42**	--								
7. I led him on sexually.	.29**	.19**	.10*	.34**	.35**	.30**	--							
8. I annoyed or pestered him.	.27**	.40**	.42**	.27**	.27**	.26**	.23**	--						
9. I was hanging out with another boy.	.26**	.31**	.19**	.55**	.60**	.37**	.35**	.32**	--					
10. I went to a party or some other social event without him.	.20**	.36**	.28**	.44**	.55**	.39**	.26**	.26**	.56**	--				
11. I was ignoring him.	.29**	.35**	.28**	.40**	.36**	.44**	.29**	.38**	.36**	.34**	--			
12. I refused to do something that he asked me to do.	.22**	.35**	.34**	.28**	.27**	.36**	.39**	.25**	.26**	.30**	.36**	--		
13. I disagreed with him on an issue that was important to him.	.24**	.34**	.41**	.28**	.26**	.36**	.31**	.49**	.25**	.29**	.36**	.53**	--	
14. I embarassed him in front of his peers.	.42**	.38**	.23**	.45**	.38**	.38**	.38**	.41**	.36**	.41**	.38**	.38**	.39**	--
15. I brought up an issue that he didn't want to talk about.	.31**	.42**	.41**	.27**	.26**	.41**	.25**	.49**	.20**	.32**	.35**	.26**	.47**	.47**

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

Table 5

Principal Components Analysis with Varimax Rotation on Perceived Provocation Scale (n = 445)

	1	2	3
I cheated on my boyfriend.	**.771**	.079	.243
I flirted with another boy.	**.823**	.177	.120
I was hanging out with another boy.	**.789**	.104	.157
I went to a party or some other social event without him.	**.678**	.243	.152
I tried to break up with my boyfriend.	**.430**	**.451**	.274
I hit my boyfriend.	.353	**.404**	.180
I swore at my boyfriend.	.284	**.807**	.087
I argued with my boyfriend.	.069	**.853**	.095
I annoyed or pestered him.	.128	**.525**	**.426**
I brought up an issue that he didn't want to talk about.	.120	**.565**	**.431**
I embarassed him in front of his peers.	**.400**	.264	**.534**
I led him on sexually.	.356	-.109	**.666**
I was ignoring him.	.379	.293	**.426**
I refused to do something that he asked me to do.	.146	.201	**.701**
I disagreed with him on an issue that was important to him.	.044	.390	**.712**

component matrix shows several items crossloading onto more than one component. Reliability analyses suggest good internal consistency (Cronbach's α = .86).

Because multiple items were crossloading, item removal was considered. Communalities suggested that the item "I hit my boyfriend" had the lowest amount of variance explained by the components. Additionally, this item overlapped with multiple presumed dimensions in the correlation matrix, and seems to be distinctly different from the three expected components (i.e., physical aggression by the victim does not necessarily relate only to threatening the relationship, threatening the partner's authority, or a verbal altercation). Therefore, this item was removed and PCA with varimax rotation was rerun. With this item removed, 59.26% of the variance is explained. Communalities are all sufficiently high (>.41). There were still crossloading items; thus, other items were considered for deletion.

The item "I tried to break up with my boyfriend" crossloaded on two components. It had a relatively low amount of variance explained (.48). Additionally, it is an item that does not seem to relate to only one component specifically. Therefore, this item was removed. The resulting solution had a higher percentage of variance explained (60.62%) and communalities suggest that variance explained in the items was sufficiently high.

The solution was cross-checked in the subsample of adolescent victims. The items retained their principal component loading except for the item "I was ignoring him". Instead, among the subsample of victims, this item was loading more heavily on an alternate component compared to the full sample. Because of this, the item was deleted from further analyses.

With this item removed, PCA with varimax rotation was rerun on the 12-item scale. Communalities indicated that a sufficient amount of variance was explained in each item (>.50). The solution produced three components with an eigenvalue over 1.0 and 62.72% explained variance. Although some items still crossloaded, the solution produced three components: 1) verbal provocation; 2) threatening relationship; and 3) threatening partner's authority. Reliability was good for the full scale (Cronbach's α = .84).

The three subscales were confirmed by running PCA with varimax rotation and reliability on the separate subscales. The first scale consisted of four items and assesses verbal provocation. One component was extracted with an eigenvalue over one and 60.05% variance explained. Communalities were sufficiently high for all items. Scree plot assessment also indicated one factor. Factor loadings were sufficiently high. The four-item verbal provocation subscale yielded sufficient internal reliability (Cronbach's α = .78). This scale could not be improved by removing any items.

The second scale consisted of four items that assess threat to the relationship. One factor was extracted with an eigenvalue over one and 66.69% variance explained. Communalities were sufficiently high for all items. The scree plot confirms the one-factor solution. Factor loadings were high. Reliability was high (Cronbach's α = .75); however, removal of one item ("I cheated on my boyfriend") would improve alpha. This item was removed. PCA with varimax rotation was rerun. The solution indicated one factor with an eigenvalue over one and 71.19% variance explained. All factor loadings were high. Reliability was also improved (Cronbach's α = .79). Reliability analysis also suggests that no items could be removed to improve internal consistency.

Finally, the third scale consisted of four items that assess threatening the partner's authority. One component was extracted with an eigenvalue over one and 54.99% variance explained. The scree plot also suggests one component. The four items loaded sufficiently high. Reliability was low (Cronbach's α = .65). Removal of one item ("I embarrassed him in front of his peers") improved internal consistency. This item was removed and PCA with varimax rotation and reliability were rerun. One component was extracted with an eigenvalue over one and 61.04% variance explained. Factor loadings were also high. Reliability was improved (Cronbach's α = .68). Although removal of "I led him on sexually" would slightly improve internal consistency, this was not done to avoid overfitting the data. Furthermore, removal of this item would remove the third factor from the full scale PCA. Thus, it was retained. See Table 6 for the information on the separate subscales.

The final 10-item perceived provocation scale yielded three components with an eigenvalue over one and 65.42% variance explained. Communalities were all sufficiently high. One item crossloaded highly on two components ("I disagreed with him on an issue that was important to him"). However, this item fits well within the subscale and removal of this item would not improve overall internal consistency. Therefore, the item was not deleted. The final scale has good internal consistency (Cronbach's α = .84). See Table 7 for factor loadings of the 10-item scale.

The final scale was once again cross-checked with the subsample of adolescent victims. The full scale yielded three components with an eigenvalue over one and 66.45% variance explained. Internal consistency was high (Cronbach's α = .83); reliability for the full study is reported because the perceived provocation construct used

Table 6

Single Factor Solutions for Perceived Provocation Subscales (n = 445)

	Factor Loading	Explained Variance	Cronbach's α
Verbal provocation		60.05%	.78
I swore at my boyfriend.	.814		
I argued with my boyfriend.	.819		
I annoyed or pestered him.	.728		
I brought up an issue that he didn't want to talk about.	.734		
Threaten relationship		71.19%	.79
I flirted with another boy.	.849		
I was hanging out with another boy.	.853		
I went to a party or some other social event without him.	.828		
Threaten Authority		61.04%	.68
I disagreed with him on an issue that was important to him.	.800		
I led him on sexually.	.697		
I refused to do something that he asked me to do.	.840		

Table 7

Principal Components Analysis with Varimax Rotation on Perceived Provocation Scale for Final Items (n = 445)

	1	2	3
I swore at my boyfriend.	**.771**	.304	.027
I argued with my boyfriend.	**.847**	.117	.032
I annoyed or pestered him.	**.632**	.153	.286
I brought up an issue that he didn't want to talk about.	**.643**	.115	.300
I flirted with another boy.	.175	**.817**	.154
I was hanging out with another boy.	.111	**.830**	.182
I went to a party or some other social event without him.	.250	**.760**	.129
I disagreed with him on an issue that was important to him.	**.509**	.038	**.662**
I led him on sexually.	-.059	.336	**.742**
I refused to do something that he asked me to do.	.272	.132	**.728**

in the primary analyses combined across the three components. Furthermore, each separate subscale resulted in a similar solution to the full sample. See Tables 8 and 9 for full scale and subscale information related to the subsample of victims.

Perceptions of Alterability Scale (H2-H3). Descriptive information for the Perceptions of Alterability Scale items can be found in Table 10. Bivariate relationships were assessed among the items in the perceptions of alterability scale. Two items were removed prior to further analysis. See Table 11 for the bivariate correlations. The first item ("There's nothing that could have been done to avoid the incident") was not highly correlated with the other items except for the other reverse-scored item. The second item (the other reverse-scored item; "The incident was bound to happen") was related negatively to the other items which is contrary to what would be expected.

Therefore, PCA with oblique rotation was conducted on the remaining six items. Oblique rotation was used because the factors were expected to correlate. The results indicate one component with an eigenvalue over one and 62.56% variance explained. The communalities are all sufficiently high (>.45). The one component solution is confirmed by the scree plot. As can be seen in Table 12, all of the items load high on the one component. Reliability of the scale is also high (Cronbach's $\alpha = .88$).

This solution was confirmed in the subsample of victims. A one component solution was again found with 59.95% variance explained. Internal consistency for the scale among the subsample of victims was good (Cronbach's $\alpha = .86$). See Table 13.

Control over future intimacy scale (H4-H5). Descriptive information for the Control Over Future Intimacy Scale items can be found in Table 14. Bivariate relationships were assessed among the items in the control over future intimacy scale.

Table 8

Principal Components Analysis with Varimax Rotation on Perceived Provocation Scale for Victim Subsample (n = 209)

	1	2	3
I swore at my boyfriend.	**.866**	.204	.005
I argued with my boyfriend.	**.870**	.100	.092
I annoyed or pestered him.	**.522**	.234	.390
I brought up an issue that he didn't want to talk about.	**.615**	.156	**.424**
I flirted with another boy.	.141	**.843**	.063
I was hanging out with another boy.	.101	**.819**	.251
I went to a party or some other social event without him.	.292	**.710**	.164
I disagreed with him on an issue that was important to him.	.368	.057	**.762**
I led him on sexually.	-.125	.360	**.726**
I refused to do something that he asked me to do.	.158	.098	**.706**

Table 9

Single Factor Solutions for Perceived Provocation Subscales for Victim Subsample (n = 209)

	Factor Loading	Explained Variance	Cronbach's α
Verbal provocation		61.99%	.79
I swore at my boyfriend.	.843		
I argued with my boyfriend.	.843		
I annoyed or pestered him.	.704		
I brought up an issue that he didn't want to talk about.	.750		
Threaten relationship		69.39%	.77
I flirted with another boy.	.829		
I was hanging out with another boy.	.856		
I went to a party or some other social event without him.	.813		
Threaten Authority		61.19%	.68
I disagreed with him on an issue that was important to him.	.797		
I led him on sexually.	.758		
I refused to do something that he asked me to do.	.791		

Table 10

Descriptive Information for Perceptions of Alterability Scale Items

	Full Sample (n = 445)					ADV Victim Subsample (n = 209)				
	Observed Range	*M*	*SD*	Skew	Kurtosis	Observed Range	*M*	*SD*	Skew	Kurtosis
1. The situation could have been changed.	1-5	3.06	1.31	.01	-1.08	1-5	3.23	1.31	-.18	-1.00
2. The incident could have turned out differently.	1-5	3.19	1.33	-.11	-1.13	1-5	3.34	1.34	-.27	-1.08
3. The things that led to this incident could have been changed.	1-5	3.03	1.28	.08	-1.07	1-5	3.19	1.31	-.12	-1.09
4. The incident happened because of things we had control over.	1-5	2.93	1.40	.08	-1.24	1-5	3.18	1.39	-.14	-1.22
5. If I acted differently, this would not have happened.	1-5	2.71	1.43	.32	-1.21	1-5	2.81	1.48	.22	-1.35
6. I could have prevented this incident from happening.	1-5	2.68	1.34	.40	-.95	1-5	2.81	1.39	.29	-1.11
7. There's nothing that could have been done to avoid the incident.	1-5	4.04	1.16	-1.03	.10	1-5	4.04	1.18	-1.05	.13
8. The incident was bound to happen.	1-5	3.54	1.30	-.54	-.79	1-5	3.61	1.28	-.53	-.81

Note. Nonvictims were asked to recall an argument or disagreement with a adolescent romantic partner.

Table 11

Intercorrelations Among Perceptions of Alterability Scale Items (n = 445)

	1	2	3	4	5	6	7
1. The situation could have been changed.	--						
2. The incident could have turned out differently.	.86**	--					
3. The things that led to this incident could have been changed.	.66**	.67**	--				
4. The incident happened because of things we had control over.	.44**	.43**	.53**	--			
5. If I acted differently, this would not have happened.	.51**	.52**	.58**	.45**	--		
6. I could have prevented this incident from happening.	.50**	.47**	.51**	.44**	.64**	--	
7. There's nothing that could have been done to avoid the incident. (R)	-.08	-.13**	-.10*	-.09	-.09	-.02	--
8. The incident was bound to happen. (R)	-.16**	-.17**	-.28**	-.25**	-.14*	-.16**	.36**

Note. $*p < .05$. $**p < .01$. (R) indicates reverse-scored item.

Table 12

Principal Components Analysis with Oblique Rotation on Perceptions of Alterability Scale (n = 445)

	Factor Loading	Explained Variance	Cronbach's α
Perceptions of Alterability Scale		62.56%	.88
The situation could have been changed.	.853		
The incident could have turned out differently.	.847		
The things that led to this incident could have been changed.	.839		
The incident happened because of things we had control over.	.675		
If I acted differently, this would not have happened.	.773		
I could have prevented this incident from happening.	.743		

Table 13

Principal Components Analysis with Oblique Rotation on Perceptions of Alterability Scale for Subsample of Victims (n = 209)

	Factor Loading	Explained Variance	Cronbach's α
Perceptions of Alterability Scale		59.95%	.86
The situation could have been changed.	.844		
The incident could have turned out differently.	.825		
The things that led to this incident could have been changed.	.817		
The incident happened because of things we had control over.	.651		
If I acted differently, this would not have happened.	.759		
I could have prevented this incident from happening.	.731		

Table 14

Descriptive Information for Control Over Future Intimacy Scale Items

	Full Sample (n = 445)					ADV Victim Subsample (n = 209)				
	Observed Range	*M*	*SD*	Skew	Kurtosis	Observed Range	*M*	*SD*	Skew	Kurtosis
1. I knew I had control over sharing thoughts and feelings.	1-5	3.50	1.15	-.57	-.34	1-5	3.45	1.14	-.51	-.40
2. I had control over dating those who make my life comfortable and stable.	1-5	3.62	1.13	-.76	-.03	1-5	3.56	1.14	-.68	-.24
3. I had control over finding love.	1-5	3.38	1.18	-.44	-.69	1-5	3.32	1.19	-.37	-.81
4. I had control over dating someone I consider my best friend.	1-5	3.52	1.14	-.62	-.34	1-5	3.47	1.16	-.56	-.44
5. I had control over dating someone I could count on.	1-5	3.57	1.14	-.61	-.34	1-5	3.47	1.14	-.45	-.57
6. I had control over having an emotionally intimate relationship.	1-5	3.53	1.16	-.57	-.45	1-5	3.44	1.16	-.41	-.69
7. I had control over having good future relationships.	1-5	3.53	1.16	-.56	-.51	1-5	3.41	1.18	-.38	-.75
8. I had control over having a fulfilling relationship.	1-5	3.56	1.15	-.60	-.43	1-5	3.45	1.16	-.44	-.70

Note. Nonvictims were asked to recall an argument or disagreement with a adolescent romantic partner.

As can be seen in Table 15, all items were highly intercorrelated, suggesting one underlying construct.

PCA with oblique rotation was used because factors were expected to correlate. This was conducted on the eight items of the control over future intimacy scale.

One component was extracted with an eigenvalue over one and 80.05% variance explained. Communalities suggest that variance explained in the items was sufficiently high. The one component solution is confirmed by the scree plot. Furthermore, all of the items load high on the one component. Reliability of the scale is also high (Cronbach's α = .96). See Table 16.

This solution was confirmed in the subsample of victims. A one component solution was again found with 80.41% variance explained. Internal consistency for the scale among the subsample of victims was good (Cronbach's α = .97). See Table 17.

Assessment of normality of new scales. After creating the new scales, the distribution of these scales were assessed for normality. All scales were sufficiently normal (Tabachnick & Fidell, 2007). See Table 18 for descriptive information for the newly formed and established scales. The bivariate analyses and structural equation modeling were conducted on only the subsample of adolescent victims (*n* = 209).

Table 15

Intercorrelations Among Control Over Future Intimacy Scale Items (n = 445)

	1	2	3	4	5	6	7
1. I knew I had control over sharing thoughts and feelings.	--						
2. I had control over dating those who make my life comfortable and stable.	.82**	--					
3. I had control over finding love.	.67**	.76**	--				
4. I had control over dating someone I consider my best friend.	.61**	.68**	.73**	--			
5. I had control over dating someone I could count on.	.69**	.76**	.82**	.81**	--		
6. I had control over having an emotionally intimate relationship.	.69**	.73**	.82**	.75**	.89**	--	
7. I had control over having good future relationships.	.69**	.73**	.79**	.72**	.87**	.88**	--
8. I had control over having a fulfilling relationship.	.71**	.75**	.78**	.74**	.87**	.87**	.94**

Note: **$p < .01$.

Table 16

Principal Components Analysis with Oblique Rotation on Control Over Future Intimacy Scale (n = 445)

	Factor Loading	Explained Variance	Cronbach's α
Control Over Future Intimacy Scale		80.05%	.96
I knew I had control over sharing thoughts and feelings.	.819		
I had control over dating those who make my life comfortable and stable.	.867		
I had control over finding love.	.890		
I had control over dating someone I consider my best friend.	.842		
I had control over dating someone I could count on.	.940		
I had control over having an emotionally intimate relationship.	.930		
I had control over having good future relationships.	.929		
I had control over having a fulfilling relationship.	.933		

Table 17

Principal Components Analysis with Oblique Rotation on Control Over Future Intimacy Scale for Subsample of Victims (n = 209)

	Factor Loading	Explained Variance	Cronbach's α
Control Over Future Intimacy Scale		80.41%	.97
I knew I had control over sharing thoughts and feelings.	.820		
I had control over dating those who make my life comfortable and stable.	.880		
I had control over finding love.	.894		
I had control over dating someone I consider my best friend.	.828		
I had control over dating someone I could count on.	.935		
I had control over having an emotionally intimate relationship.	.925		
I had control over having good future relationships.	.940		
I had control over having a fulfilling relationship.	.942		

Table 18

Descriptive Information for Variables in Primary Analyses

	ADV Victim Subsample (n = 209)				
	Observed Range	*M*	*SD*	Skew	Kurtosis
1. Investment in relationship	1-5	3.25	1.02	-.57	-.03
2. Satisfaction with relationship	1-5	3.14	1.10	-.27	-.68
3. Quality of perceived alternatives	1-5	2.97	.99	-.07	-.42
4. Commitment to relationship	1-5	3.60	1.03	-.76	.03
5. Threat to future intimacy	1-5	2.64	1.45	.31	-1.27
6. Perceived provocation	1-5	2.15	.86	.87	.38
7. Victim's intoxication	1-5	1.48	1.10	2.20	3.46
8. Partner's intoxication	1-5	1.64	1.23	1.77	1.69
9. Perceived alterability of incident	1-5	3.09	1.06	-.04	-.59
10. Control over future intimacy	1-5	3.44	1.04	-.49	-.17
11. Anxious romantic attachment	1.11-5	3.06	.85	-.09	-.69
12. Avoidant romantic attachment	1-4.22	2.46	.72	-.05	-.74

Note. Victim's intoxication was transformed for proceeding analyses.

Bivariate Relationships (H6-H20)

Bivariate correlations among all of the items were assessed prior to specifying the hypothesized model. This was done to verify that the expected relationships were present as well as to assess for problems with unidimensionality and multicollinearity. Because steps were taken to ensure appropriate scale development and reliability, items associated within the same scale were highly correlated. However, related variables as indicated by the hypothesized structural model were either nonsignificant or exhibited low to moderate correlations. No variables were considered for deletion based on the interitem correlations (correlated above .90 ;Tabachnick & Fidell, 2007).

As can be seen in Table 19, bivariate correlations among the scales and model-relevant items (e.g., victim's and partner's intoxication) were then assessed. Although the proposed model was still specified, the bivariate relationships indicate that the variables are not all related as hypothesized. The investment model constructs are significantly intercorrelated; however, commitment is not significantly associated with perceived threat to future intimacy or insecure adult romantic attachment. Assessment of relationships among constructs on the bottom half of the model indicates that victim's and partner's intoxication are not related to perceived alterability of the incident, control over future intimacy or romantic attachment. Perceived provocation was significantly positively related to perceived alterability of the incident and romantic attachment, but not control over future intimacy. Additionally, perceived alterability of the incident was not related to control over future intimacy. However, perceived alterability was significantly positively related to avoidant romantic attachment. Despite the nonsignificant findings on the proximal end of the model, threat to future intimacy (i.e.,

Table 19

Intercorrelations Among Variables in Primary Analyses

	1	2	3	4	5	6	7	8	9	10	11
1. Investment in relationship	--										
2. Satisfaction with relationship	**.50****	**--**									
3. Quality of perceived alternatives	**-.15***	**-.42****	**--**								
4. Commitment to relationship	**.63****	**.62****	**-.44****	--							
5. Threat to future intimacy	**.18***	-.04	.07	.05	--						
6. Perceived provocation	**.17***	-.04	.11	-.01	**.26****	--					
7. Victim's intoxication	.06	-.01	.12	-.04	.03	.05	--				
8. Partner's intoxication	.03	-.02	**.17***	-.05	.01	.07	**.78****	--			
9. Perceived alterability of incident	-.003	-.06	.08	.001	.12	**.29****	.13	.09	--		
10. Control over future intimacy	-.08	.08	-.02	.07	**-.19****	-.06	.05	.002	.07	--	
11. Anxious romantic attachment	.10	-.11	.10	.003	**.33****	**.20****	.06	.03	.03	**-.17****	--
12. Avoidant romantic attachment	-.03	-.11	.11	-.07	**.22****	**.18****	.12	.03	**.14***	**-.18****	**.34****

Note. $*p < .05$. $**p < .01$. $n = 209$.

primary appraisal) was significantly related to higher anxious and avoidant romantic attachment. Control over future intimacy (i.e., secondary appraisal) was significantly related to lower anxious and avoidant romantic attachment. Therefore, the proposed model was not expected to be fully supported. Structural equation modeling procedures are described below.

Preliminary Preparation for Structural Equation Modeling

Prior to assessing the proposed structural model, necessary prerequisites were established. This includes determining that the appropriate sample size was achieved and the model was overidentified. Additionally, scale items were aggregated using a parceling approach to maximize the sample to parameter ratio.

Sample size. There are numerous guidelines provided for determining appropriate sample size. According to Boomsma and Hoogland (2001), a minimum sample size of 200 is necessary to avoid modeling and interpretation errors when using maximum likelihood procedures. Using this criterion, the subsample of adolescent victims is sufficent for the proposed analyses (n = 209).

Partial disaggregation of indicators. In order to maximize the sample to parameter ratio, scales with six or more items were aggregated using partial disaggregation (Williams & O'Boyle, 2008). Partial disaggregation, or parceling, uses the sum or average of items to create fewer indicators for a latent construct (Williams & O'Boyle, 2008). This involved the following scales: commitment; perceived provocation; perceptions of alterability; control over future intimacy; and romantic relationship attachment. Unidimensional constructs (i.e., commitment; perceptions of alterability; control over future intimacy; anxious attachment; and avoidant attachment) were

parceled using an item-to-construct balance approach. With this approach, items with the highest standardized factor loadings anchor the parcels; then, the next highest loadings are applied to the parcels in an inverted order (Williams & O'Boyle, 2008). Perceived provocation has multidimensional items; thus, they were parceled in a manner to maximize internal consistency. The approach used for this scale was the internal consistency approach (Williams & O'Boyle, 2008). For all scales, three parcels were created. Bivariate correlations among the indicators were assessed. As can be seen in Table 20, findings are consistent with the aforementioned correlations among the scales and model-relevant items (e.g., victim's and partner's intoxication).

Model Identification. Model identification for structural equation modeling is dependent upon the number of parameters being estimated and, consequently, the degrees of freedom afforded by the model. Therefore, the degrees of freedom present for the current model is estimated using the formula: $p\ (p + 1) / 2$ (Raykov & Marcoulides, 2006), where p is the number of observed variables included in the model. The number of parameters being estimated in the model is then subtracted from this value to determine the number of available degrees of freedom. Thirty-six observed variables were included in the CFA and structural models. For the CFA, 135 paths were estimated; thus, there were 531 degrees of freedom. For the structural model, 88 paths were estimated; leaving 578 degrees of freedom. Therefore, both were over-identified models, which is required for running the analyses.

Table 20

Intercorrelations Among Indicators

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1. INV Item #1	--																																		
2. INV Item #2	**.59****	--																																	
3. INV Item #3	**.77****	**.56****	--																																
4. INV Item #4	**.48****	**.62****	**.47****	--																															
5. INV Item #5	**.69****	**.53****	**.77****	**.42****	--																														
6. SAT Item #1	**.40****	**.21****	**.34****	**.22****	**.33****	--																													
7. SAT Item #2	**.42****	**.38****	**.41****	**.39****	**.40****	**.71****	--																												
8. SAT Item #3	**.43****	**.36****	**.43****	**.46****	**.39****	**.71****	**.86****	--																											
9. SAT Item #4	**.48****	**.30****	**.42****	**.30****	**.38****	**.78****	**.70****	**.69****	--																										
10. SAT Item #5	**.43****	**.31****	**.36****	**.33****	**.37****	**.78****	**.77****	**.76****	**.82****	--																									
11. QALT Item #1	-.12	-.02	**-.18****	.10	-.12	**-.32****	**-.35****	**-.32****	**-.34****	**-.39****	--																								
12. QALT Item #2	**-.17***	-.05	-.10	.05	-.14*	**-.33****	**-.35****	**-.31****	**-.26****	**-.37****	**.67****	--																							
13. QALT Item #3	**-.34****	**-.22****	-.27**	-.06	**-.30****	**-.31****	**-.28****	**-.26****	**-.27****	**-.31****	**.53****	**.58****	--																						
14. QALT Item #4	**-.15***	-.05	-.13	.06	**-.14***	**-.27****	**-.29****	**-.27****	**-.26****	**-.32****	**.63****	**.72****	**.63****	--																					
15. QALT Item #5	-.08	.01	.08	-.001	-.13	**-.31****	**-.36****	**-.35****	**-.28****	**-.38****	**.64****	**.69****	**.54****	**.72****	--																				
16. COMM Par #1	**.45****	**.29****	**.42****	**.30****	**.38****	**.39****	**-.39****	**.41****	**.47****	**-.45****	**-.30****	**-.22****	**-.31****	**-.35****	**-.32****	--																			
17. COMM Par #2	**.67****	**.41****	**.61****	**.32****	**.59****	**.52****	**.52****	**.56****	**.59****	**.63****	**-.38****	**-.30****	**-.46****	**-.36****	**-.31****	**.65****	--																		
18. COMM Par #3	**.68****	**.41****	**.61****	**.38****	**.58****	**.51****	**.51****	**.57****	**.58****	**.58****	**-.38****	**-.32****	**-.45****	**-.34****	**-.31****	**.69****	**.93****	--																	
19. Threat Item	**.15***	**.21****	.12	.05	**.20****	-.08	-.01	-.09	.03	-.05	.11	.12	-.05	.04	.08	-.04	.09	.07	--																	
20. PROV Par #1	**.15***	**.16***	**.15***	**.17****	**.18****	-.03	-.03	-.02	-.02	-.02	**.17***	.13	.06	.08	.08	-.01	.01	.01	**.22****	--															
21. PROV Par #2	.10	.10	.06	**.15****	.10	-.04	-.09	-.05	.03	-.03	.09	.12	.03	.02	.06	.02	-.02	-.01	**.19****	**.75****	--														
22. PROV Par #3	.08	**.15***	.12	**.14***	.11	-.02	-.07	-.06	.03	-.01	.10	.10	.08	.04	.09	-.04	.01	-.002	**.27****	**.72****	**.68****	--													
23. Vic Intox Item	-.03	.06	.06	**.16***	-.02	-.05	-.01	.05	.004	-.03	.12	**.18****	.11	.05	.06	.06	-.06	-.09	.03	.04	.04	.05	--												
24. Part Intox Item	-.02	.02	.001	**.14***	-.03	-.04	-.03	.02	.01	-.04	**.16***	**.23****	**.16***	.07	.11	.09	-.11	-.11	-.01	.07	.07	.04	**.78****	--											
25. ALT Par #1	.03	-.10	.02	-.04	.06	-.09	**-.16***	-.12	-.08	-.09	.04	.11	-.01	.01	.03	-.05	-.02	-.003	.05	**.23****	**.22****	**.24****	.07	.06	--										
26. ALT Par #2	-.07	-.12	.001	.07	.01	-.03	-.06	-.03	.04	-.003	.07	**.17***	.00	.06	.09	.05	.01	.02	.11	**.20****	**.20****	**.23****	**.15***	.12	**.75****	--								
27. ALT Par #3	.01	-.06	.06	-.01	.12	.002	-.08	-.09	.03	-.01	.06	.14	.03	.06	.07	.01	.05	.03	**.18***	**.26****	**.25****	**.25****	**.14***	.06	**.69****	**.74****	--							
28. CON Par #1	-.03	**-.19****	-.003	-.09	-.04	.09	.08	.06	-.01	.07	-.10	-.01	.03	-.01	.04	-.10	-.02	-.04	**-.18****	-.05	-.10	-.08	-.02	.03	.10	.05	-.04	--						
29. CON Par #2	-.02	**-.15***	-.01	-.04	-.04	.13	.09	.09	.003	.12	-.09	-.04	.01	-.04	.01	-.09	-.02	-.04	**-.19****	-.05	.08	-.04	-.06	-.01	.13	.08	-.004	**.92****	--					
30. CON Par #3	-.04	**-.16***	-.04	-.11	-.05	.07	.05	.06	-.04	.08	-.07	-.03	.02	.01	.01	**-.16***	-.03	-.08	**-.17***	.01	.05	-.02	-.05	-.03	.13	.08	.01	**.90****	**.91****	--				
31. ANX Par #1	.03	**.17***	.03	.05	.04	**-.14***	**-.19***	-.13	-.11	**-.15***	**.18***	.12	.02	.12	.13	-.04	.02	-.01	**.31****	**.14***	.18	**.19****	.05	.02	.00	.04	.02	**-.21****	**-.19****	**-.19****	--			
32. ANX Par #2	.05	**.15***	.06	-.01	.05	-.04	-.06	-.08	.002	-.05	.09	.04	-.03	.05	.08	-.02	.03	-.01	**.33****	**.21****	.10	**.24****	.03	.02	-.02	.02	.07	-.13	**-.14***	-.12	**.83****	--		
33. ANX Par #3	.07	**.21***	.07	.07	.06	-.08	-.10	-.07	-.04	-.10	**.16***	.07	-.03	.08	.11	.01	.03	.00	**.30****	**.21****	.09	**.20****	.09	.04	-.03	.03	.04	**-.14***	**-.14***	-.12	**.84****	**.86****	--	
34. AVD Par #1	-.02	-.03	-.04	.01	-.04	-.11	-.07	-.03	-.08	**-.14***	.08	.14*	.04	**.14***	.09	-.06	-.06	-.05	**.16***	**.18***	**.21****	**.17***	.09	.002	.12	.14	**.17***	**-.14***	-.12	-.13	**.27****	**.20****	**.14***	--
35. AVD Par #2	-.04	.05	-.09	.04	-.07	-.13	-.09	-.05	-.10	**-.14***	.13	.13	.05	.13	**.14***	-.11	-.08	-.10	**.23****	.11	**.18***	**.14***	.12	.05	.06	.12	**.18****	**-.16***	-.13	-.13	**.39****	**.31****	**.27****	**.82****	--
36. AVD Par #3	-.06	.02	-.07	-.01	-.08	-.12	-.08	-.03	-.07	-.12	.05	.12	.01	.02	.02	.00	-.04	-.07	**.22****	.12	**.18****	.12	.13	.02	.07	.07	.13	**-.22****	**-.20****	**-.21****	**.42****	**.33****	**.31****	**.78****	**.79****

Note. Significant correlations are boldfaced. *$p < .05$. **$p < .01$. $n = 209$. INV indicates Investment Scale. SAT indicates Satisfaction Scale. QALT indicates Quality of Perceived Alternatives Scale. COMM indicates Commitment Scale. PROV indicates Perceived Provocation Scale. Vic Intox indicates victim intoxication. Part Intox indicates Partner's Intoxication. ALT indicates Perceptions of Alterability Scale. CON indicates Control over Future Intimacy Scale. ANX indicates Anxious Romantic Attachment. AVD indicates Avoidant Romantic Attachment. Par indicates parcel.

Structural Equation Modeling

Structural equation modeling was used to assess both a saturated CFA model as well as the proposed structural model. Procedures related to the structural equation modeling analyses are described below.

Assessing goodness of fit. The goodness of fit for the CFA was assessed first and was compared to the goodness of fit indices for the structural model (Anderson & Gerbing, 1988; Hoyle & Panter, 1995). This is possible since they were nested models (Hoyle & Panter, 1995). Model comparison procedures suggests that if the structural model does not fit significantly worse than the CFA, the structural model is preferred due to its increase in parsimony (Anderson & Gerbing, 1988; Hoyle & Panter, 1995).

Four different goodness of fit indices were used to assess the fit of each model and to compare them. Two absolute indices were used: Minimum Fit Function (MFF) Chi-Square and Root Mean Square Error of Approximation (RMSEA). The MFF Chi-Square provides an estimate of how well the reproduced covariance matrix replicates the observed covariance matrix. For MFF Chi-Square, the Critical N (CN) must also be assessed because Chi-Square is often inflated with large sample sizes (Hu & Bentler, 1995; Raykov & Marcoulides, 2006). A CN equal to or greater than 200 suggests that MFF Chi-Square is significant because it is overpowered (Hu & Bentler, 1995). An RMSEA less than .08 suggests an adequate fit and an RMSEA less than .05 suggests a good fit (Raykov & Marcoulides, 2006). Two incremental indices were also used: Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI). For both of these fit indices, a value between .90 and .95 suggests an adequate fit; a value over .95 suggests a good fit (Raykov & Marcoulides, 2006).

In addition to the goodness of fit indices, several parameter estimates were assessed to determine model fit for the structural model. Significance tests were examined for the factor loadings of the indicators with each corresponding latent construct, correlations among the latent constructs and hypothesized relationships between the latent constructs. Model modification was also considered.

Model comparison. Because the CFA and structural models were nested, a comparison of the goodness of fit indices is appropriate to assess an improvement in model fit (Anderson & Gerbing, 1988; Hoyle & Panter, 1995). The difference in degrees of freedom between the models was used as an indication of what the significant cutoff of MFF Chi-Square would be at $p = .05$. If the difference in Chi-Square between models exceeded this value, the new model was considered to fit significantly worse. For the other fit indices (RMSEA, NNFI, CFI), a change greater than .05 between models was used to indicate a worse fitting model.

Model specification: Confirmatory factor analysis. LISREL 8.80 was utilized to conduct the analyses. The covariance matrix was entered manually. A maximum likelihood method of estimation was used. Scale was set by fixing the variance (Phi matrix) of each exogenous latent construct. For single-indicator constructs, error variance for the indicators was also fixed and set to zero. Paths were estimated for each hypothesized relationship in the Lambda X matrix. All latent constructs were allowed to intercorrelate (Phi matrix). See Figure 2 for model specification.

Confirmatory factor analysis findings (H21-H23). As can be seen in Table 21, results of the CFA suggest that the model fits adequately. According to the MFF chi-square statistic, the model fits poorly as indicated by its significance. Additionally, CN

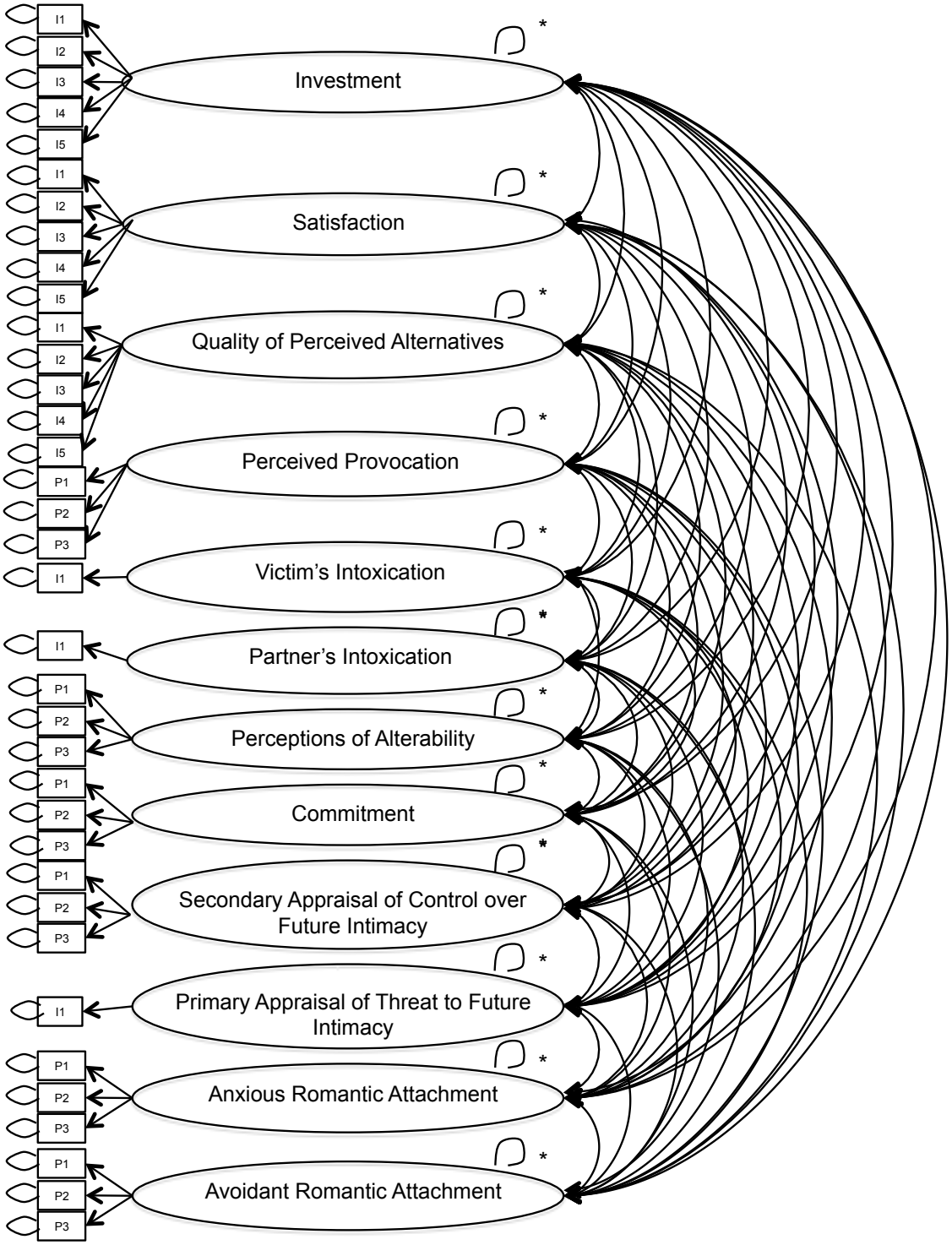

Figure 2. Estimated CFA model. *Note*: * indicates fixed parameter. Phi matrix fixed and set to 1.0.

Table 21

Model Fit Comparison for Measurement Model and Theoretical Model

	CFA	Theoretical Model
DF	531	578
χ2	941.71*	1021.60*
CN	135.68	135.38
RMSEA	.058	.058
CFI	.96	.95
NNFI	.95	.95
ΔDF	--	47
Δχ2	--	79.89*
χ2 cut-off	--	64.00
ΔRMSEA	--	.000
ΔCFI	--	.01
ΔNNFI	--	.00

*$p < .05$. χ2 cut-off at .05.

suggests that this is not due to being overpowered (<200). However, other fit indices suggest otherwise. RMSEA and the incremental indices (i.e., CFI and NNFI) suggest an adequate fit.

Assessment of the parameter estimates indicates that each indicator is significantly associated with its latent construct. Variance explained in the indicators was generally high (≥60%). However, some indicators appeared poorly explained, particularly for items associated with the investment model. Two investment items had little variance explained (≤45%), one item associated with quality of perceived alternatives had little variance explained (49%), and one commitment parcel had little variance explained (49%). Despite these low values, each of these indicators were still significantly associated with the latent construct. See Table 22 for estimates associated with factor loadings.

Correlations among the indicators were also assessed. As can be seen in Table 23, the investment model constructs were significantly intercorrelated. Perceived provocation was also significantly correlated with perceived alterability, as was victim's intoxication (which did not reach significance when assessing bivariate relationships). Additionally, threat to future intimacy and control over future intimacy were related to romantic attachment in the expected directions. However, commitment was not significantly associated with threat to future intimacy nor were perceptions of alterability associated with control over future intimacy. Thus, this mediation link was not expected to be significant in the structural model.

Model specification: Structural model. As previously done for the CFA, LISREL 8.80 was utilized to conduct the analyses. The covariance matrix was entered

Table 22

Standardized Parameter Estimates from CFA: Lambda X Matrix

	Investment	Satisfaction	Qualtiy of Perceived Alternatives	Commitment	Threat	Perceived Provocation	Victim's Intoxication	Partner's Intoxication	Perceptions of Alterability	Control Over Future Intimacy	Anxious Romantic Attachment	Avoidant Romantic Attachment
1. INV Item #1	1.06											
2. INV Item #2	.87											
3. INV Item #3	1.05											
4. INV Item #4	.73											
5. INV Item #5	.99											
6. SAT Item #1		1.00										
7. SAT Item #2		1.11										
8. SAT Item #3		1.11										
9. SAT Item #4		1.01										
10. SAT Item #5		1.12										
11. QALT Item #1			.92									
12. QALT Item #2			.96									
13. QALT Item #3			.85									
14. QALT Item #4			.98									
15. QALT Item #5			.99									
16. COMM Par #1				.71								
17. COMM Par #2				1.12								
18. COMM Par #3				1.13								
19. Threat Item					1.45							
20. PROV Par #1						.86						
21. PROV Par #2						.75						
22. PROV Par #3						.80						
23. Vic Intox Item							.21					
24. Part Intox Item								1.23				
25. ALT Par #1									.94			
26. ALT Par #2									1.03			
27. ALT Par #3									1.02			
28. CON Par #1										1.00		
29. CON Par #2										1.03		
30. CON Par #3										1.05		
31. ANX Par #1											.82	
32. ANX Par #2											.82	
33. ANX Par #3											.84	
34. AVD Par #1												.64
35. AVD Par #2												.71
36. AVD Par #3												.71

Note. All estimates significant at $p < .01$. $n = 209$. INV indicates Investment Scale. SAT indicates Satisfaction Scale. QALT indicates Quality of Perceived Alternatives Scale. COMM indicates Commitment Scale. PROV indicates Perceived Provocation Scale. Vic Intox indicates victim intoxication. Part Intox indicates Partner's Intoxication. ALT indicates Perceptions of Alterability Scale. CON indicates Control over Future Intimacy Scale. ATT indicates Adult Romantic Attachment. Par indicates parcel.

Table 23

Standardized Parameter Estimates: CFA Phi Matrix

	1	2	3	4	5	6	7	8	9	10	11	12
1. Investment	--											
2. Satisfaction	**.54***	--										
3. Quality of Perceived Alternatives	**-.19***	**-.45***	--									
4. Commitment	**.74***	**.66***	**-.44***	--								
5. Threat	**.18***	-.05	.09	.07	--							
6. Perceived Provocation	**.18***	-.04	.13	.00	**.26***	--						
7. Victim's Intoxication	.03	-.01	.13	-.08	.03	.05	--					
8. Partner's Intoxication	.00	-.02	**.17***	-.10	-.01	.07	**.79***	--				
9. Perceptions of Alterability	.00	-.06	.10	.01	.13	**.31***	**.15***	.10	--			
10. Control Over Future Intimacy	-.06	.08	-.03	-.05	**-.19***	-.06	-.05	.00	.08	--		
11. Anxious romantic attachment	.09	-.11	.11	.01	**.34***	**.22***	.06	.03	.03	**-.17***	--	
12. Avoidant romantic attachment	-.06	-.12	.14	-.08	**.23***	**.20***	.12	.03	**.15***	**-.18***	**.35***	--

Note. Significant correlations are boldfaced. *$p < .05$.

manually. A maximum likelihood method of estimation was used. Scale was set by fixing the variance (Phi matrix) of the exogenous latent constructs (relationship investment, relationship satisfaction and quality of perceived alternatives; perceived provocation of the perpetrator, victim's drinking, and partner's drinking) and setting them to 1.0. For the endogenous constructs, scale was set by fixing the factor loadings of individual indicators (Lambda Y matrix; commitment; perceptions of alterability; primary appraisal of threat to future intimacy; secondary appraisal of control over future intimacy; adult romantic attachment) and setting them to 1.0. For single indicator constructs, the error variance of the indicator (i.e., theta delta or theta epsilon) was fixed and set to zero. The disturbances of the romantic attachment constructs were allowed to correlate. Paths were estimated in the Gamma and Beta matrices. See Figure 3 for model specification.

Structural model findings (H24-H35). As can be seen in Table 21, results of the structural model analyses suggest that the theoretical model fits adequately. According to the significant MFF chi-square statistic, the model fits poorly. Additionally, CN suggests that this is not due to being overpowered (<200). However, other fit indices suggest good fit. RMSEA suggests an adequate fit; the incremental indices (i.e. CFI and NNFI) also suggest an adequate fit.

As suggested by the CFA, assessment of the Lambda X and Y matrix parameter estimates indicates that each indicator is significantly associated with its latent construct. Variance explained in the indicators was generally high ($\geq$60%). However, some indicators appeared poorly explained, particularly for items associated with the investment model. The same investment items had little variance explained ($\leq$44%) and

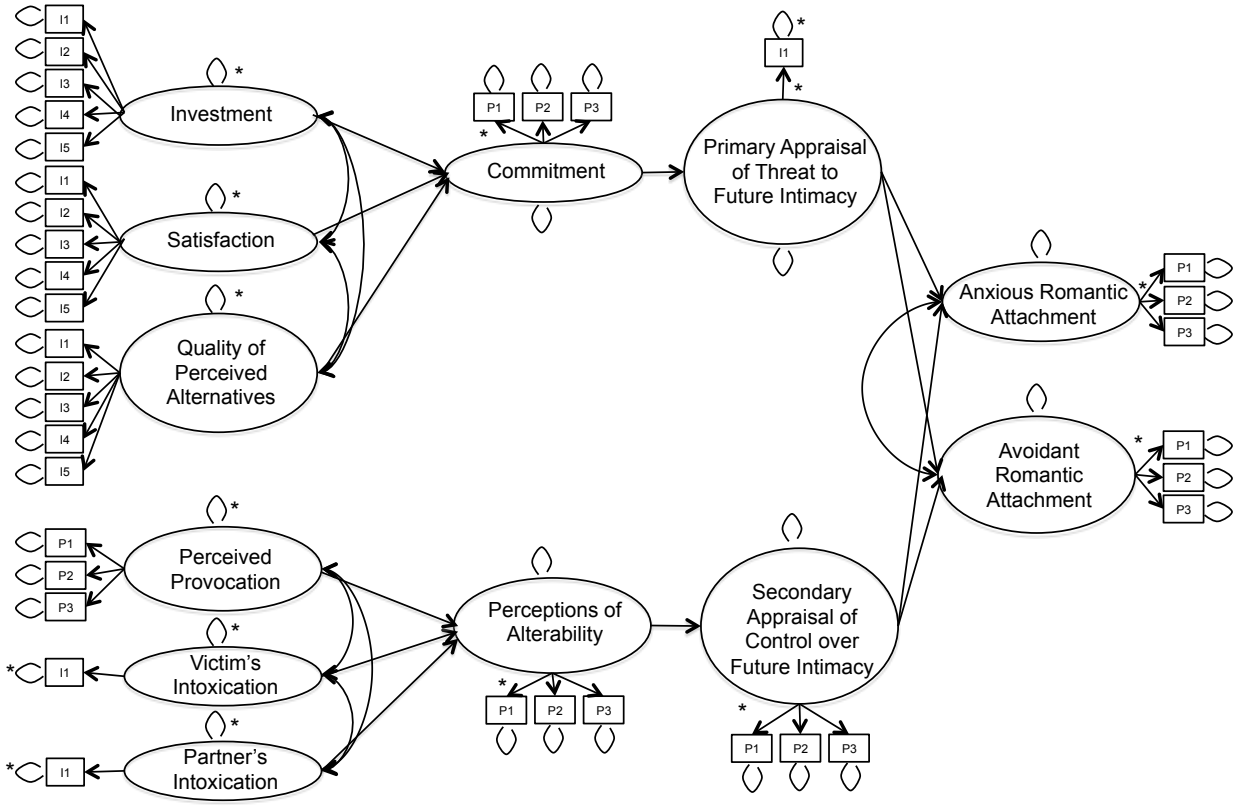

Figure 3. Estimated structural model. *Note*: * indicates fixed path. Phi matrix fixed and set to 1.0. Scale for endogenous constructs set by fixing one element per construct to 1.0 in the Lambda Y matrix. For single item constructs, theta epsilon and theta delta matrix also fixed and set to 0.

the same item associated with quality of perceived alternatives also had little variance explained (49%). However, each indicator was significantly associated with its latent construct. One parcel associated with commitment also had comparatively low variance explained (49%), though it was significantly associated with the latent construct.

As can be seen in Figure 4, correlations among exogenous constructs were assessed. Only constructs associated with the same directional path were allowed to intercorrelate (i.e., investment model constructs and perceived alterability constructs). Findings suggest that the investment model constructs are all significantly intercorrelated. Victim's and partner's drinking were significantly intercorrelated. However, neither intoxication variable was signficantly associated with perceived provocation.

As can be seen in Table 24, directional paths were then assessed as estimated in the Gamma and Beta matrices. As expected, investment, satisfaction and quality of perceived alternatives were all related to commitment in the expected directions. Only perceived provocation was associated with perceptions of alterability; victim's and partner's intoxication were not significantly associated. As indicated by the correlation estimates reported above, greater perceived threat to future intimacy was associated with anxious and avoidant romantic attachment. Greater perceptions of control over future intimacy was associated with lower avoidant romantic attachment; perceptions of control were not significantly associated with anxious romantic attachment. Despite the expected associations, perceived threat to future intimacy was not related to commitment nor was control over future intimacy related to perceptions of alterability.

Table 24

Standardized Parameter Estimates from Theoretical Model: Gamma and Beta Matrices

	Investment	Satisfaction	Quality of Perceived Alternatives	Perceived Provocation	Victim's Intoxication	Partner's Intoxication
	Gamma Matrix					
Commitment	**.55***	**.26***	**-.22***			
Threat						
Perceptions of Alterability				**.30***	.18	-.07
Control over Future Intimacy						
Anxious Romantic Attachment						
Avoidant Romantic Attachment						

	Commitment	Threat	Perceptions of Alterability	Control Over Future Intimacy	Adult Romantic Attachment
	Beta Matrix				
Commitment					
Threat	.07				
Perceptions of Alterability					
Control over Future Intimacy			.07		
Anxious Romantic Attachment		**.32***		-.11*	
Avoidant Romantic Attachment		**.20***		**-.14***	

Note. Significant loadings are boldfaced. *$p < .05$.

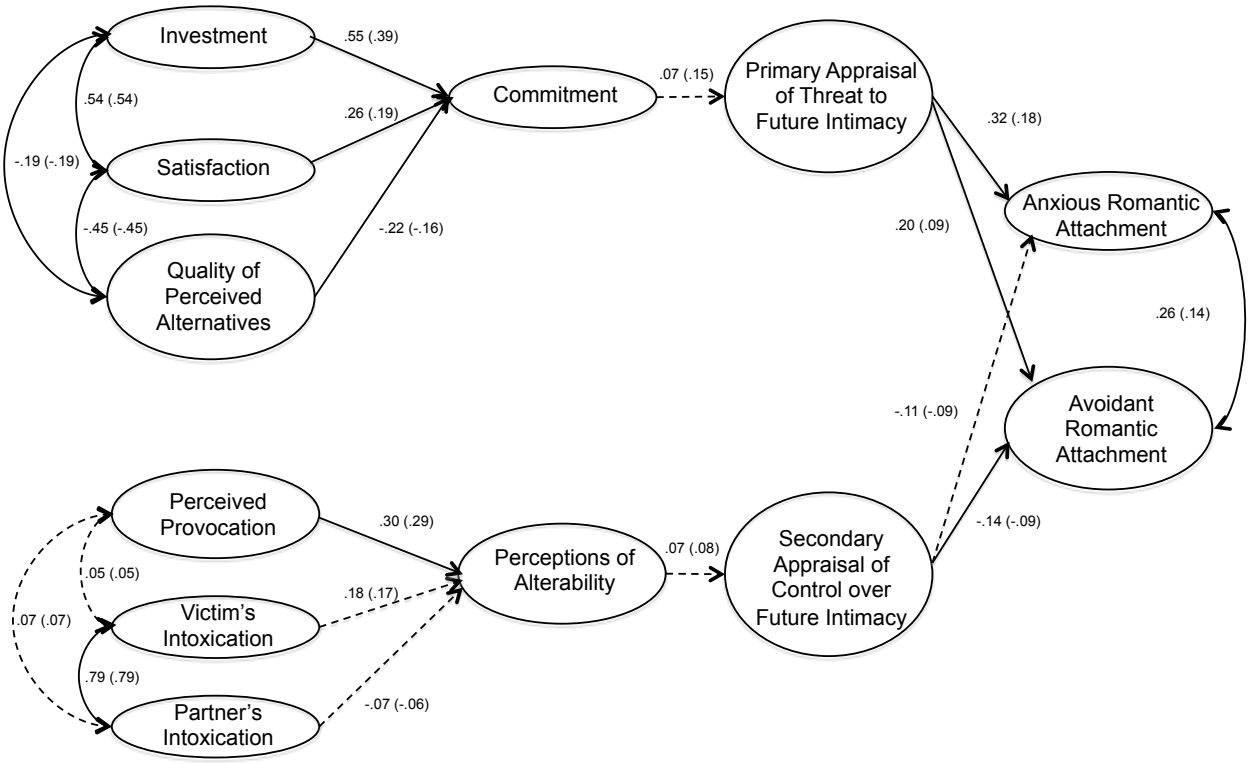

Figure 4. Theoretical model linking commitment and perceptions of alterability to adult romantic attachment. *Note*: Dashed lines indicate nonsignificant paths. Unstandardized estimates are included in parentheses.

Total and indirect effects were also assessed, particularly for anxious and avoidant romantic attachment. Results suggest that only the proximally related threat to future intimacy and control over future intimacy are significantly related to adult romantic attachment. Furthermore, threat to future intimacy and control over future intimacy were not significantly related to any distal exogenous constructs (e.g., satisfaction; perceived provocation).

Variance explained in the latent constructs was generally low. A good amount of variance was explained in commitment (68%). However, a relatively low amount of variance was explained in perceived alterability (11%), anxious romantic attachment (12%), and avoidant romantic attachment (6%). Contrarily, very low variance was explained in threat to future intimacy (1%) and control over future intimacy (1%).

Modification indices suggest that model improvement could be achieved by allowing the error terms of two items related to satisfaction to correlate. This suggests that there is another factor influencing responses to these items that is not captured by the latent construct. Because the modification would be associated with the measurement model and is not, therefore, a substantive alteration, it was not pursued.

Model comparison (H36). As can be seen in Table 21, the CFA and theoretical model were compared. Model comparison suggests that the more parsimonious theoretical model can be retained. Although the change in chi-square is significant, which suggests a poorer fitting model, the change in RMSEA, CFI and NNFI did not exceed the cut-off of .05. Thus, it can be deduced that the parsimonious solution is acceptable. Despite this conclusion, it must be reiterated that the expected paths were

not significant. Thus, the model poorly explains construct relationships. These findings are explored in more detail in the discussion below.

DISCUSSION

The present study had two primary goals. First, it sought to develop three new scales to aid in theory testing. These new scales assessed perceived provocation of a violent dating incident, perceived alterability of a violent dating incident, and the perception of control over future intimacy. Second, it explored numerous predictors and subsequent mediators of adult romantic attachment. In particular, it was expected that among individuals who experienced a physical or sexual assault during adolescence, current adult romantic attachment would be related to the perceived alterability of that incident as well as commitment to that adolescent relationship. These perceptions were presumed to be mediated through the appraisal constructs of perceived threat to future intimacy and ability to control future intimacy. Support for this model would have strengthened the argument that a poignant incident, particularly during a period of drastic socioemotional development, could affect romantic attachment orientations in young adulthood.

A description of the findings is included below. This is followed by a discussion of the strengths and limitations of the study, as well as suggestions for future research.

Review of Findings

Scale development. ***Perceived provocation (H1)***. According to Flynn and Graham (2010), intimate partner violence may be attributed to stable characteristics of the perpetrating partner; intermediate factors such as life stressors; or proximal factors such as situational or emotional triggers. The present study sought to explore situational or emotional factors that are thought to contribute to violence since these factors may be viewed as less stable and more alterable. Fifteen items were developed based on

the five potential proximal reasons for relationship violence according to Flynn and Graham. These include: (a) potentially provoking behavior by the victim; (b) factors that may anger or incite the perpetrator; (c) communicative factors; (d) controlling factors; and (e) "hot button" issues (Flynn & Graham, 2010). Furthermore, items were worded such that the victim's *behavior* was assessed; this was deemed crucial in order to capture antecedents that are viewed as controllable.

Because this scale was not intended to assess a unidimensional attitudinal construct but rather distinct behavior, a single factor structure was not necessarily expected. A priori hypotheses were not made regarding the findings. However, a three component solution was found. The first component assessed verbal provocation of the partner. The second component assessed behavior with other boys that threatened the relationship. The final component seemed to assess behavior that threatened the partner's authority. As expected, the full scale yielded good internal consistency.

Perceptions of Alterability (H2-H3). Another scale was created to assess the degree to which victims believe a violent incident could have been avoided. As hypothesized, the final perceptions of alterability scale yielded high internal consistency reliability and a single component.

Control Over Future Intimacy (H4-H5). A scale was also created for the present study to assess victims' beliefs that they can control the fulfillment of intimacy goals. As hypothesized, the control over future intimacy scale yielded good internal consistency. It also resulted in a single component.

Bivariate relationships (H6-H20). Hypotheses 6 through 20 list expectations for bivariate relationships among the latent constructs. Some hypotheses were confirmed;

however, many were not. The investment model constructs correlated highly and in expected directions. Previous research suggests that investment in a relationship and satisfaction with that relationship are positively correlated with commitment (Le & Agnew, 2003; Rusbult 1980; 1983). Alternatively, quality of perceived alternatives is associated with decreased commitment to that relationship (Le & Agnew, 2003; Rusbult 1980; 1983). These findings were confirmed in the present study.

Perceived provocation was positively correlated with perceived alterability as hypothesized. However, victim's and partner's intoxication were not. Perceived provocation was not correlated with either intoxication variables; however, victim's intoxication was strongly related to partner's intoxication. Previous research suggests that in drinking situations, both partners are typically drinking (Abbey et al., 2003). The lack of relationship between perceived provocation and intoxication suggests that drinking may be a distinct factor in violent incidents and is not necessarily related to verbal provocation, threats to the relationship, or threats to the partner's authority.

An interesting pattern emerged for perceived provocation which was not hypothesized a priori. Perceived provocation was associated with greater investment in a relationship. It is possible that greater relationship investment is associated with more self-blaming attributions for the violence, and the construct of perceived provocation is similar to self-blame. Previous research suggests that women who have experienced abuse are less likely to leave an abusive partner when they were more committed, more invested, were less dissatisfied with the relationship and had poorer alternatives (Rusbult & Martz, 1995). Additionally, greater commitment was associated with making more benign attributions for violence (Rusbult & Martz, 1995). Thus, self-blaming

attributions for relationship violence may aid the victim in making sense of the violence and her inability to dissolve the relationship. It is also possible that greater investment in combination with lower satisfaction may be associated with greater conflict in unstable relationships. However, perceived provocation was not correlated with the other investment model constructs in the present study.

Perceived provocation was also positively associated with the sense of threat to future intimacy. This was unexpected, and perceived provocation was not associated with control over future intimacy as was hypothesized. Previous research suggests that self-blaming attributions for violence can be either characterological (i.e., blaming one's own character for a traumatic incident) or behavioral (i.e., blaming one's behavior for a traumatic incident; Janoff-Bulman, 1979). Janoff-Bulman (1979) suggested that behavioral self-blame, because of its perceived controllability in the future, is adaptive for recovery after trauma. However, a review on research investigating causal attributions made for negative events found that, while characterological self-blame was consistently associated with poorer outcomes, findings related to behavioral self-blame were inconsistent (Hall, French & Marteau, 2003). Behavioral self-blame was related to both positive and negative outcomes in some studies and others have found no relationship at all (Hall et al., 2003). Furthermore, some studies suggest that both characterological and behavioral self-blame is maladaptive and leads to more distress (Arata & Burkhart, 1998; Frazier, 1990). Frazier (1990) found that behavioral self-blame was related to perceived past control over an experienced rape, but not future controllability; this contradicts the mediating mechanism proposed by Janoff-Bulman. Finally, although the present study attempted to assess perceived provocation, which

seems similar to the construct of behavioral self-blame, it is possible that these items were, instead, assessing a more stable set of beliefs regarding relationships generally and one's quality as a relationship partner. Previous research suggests that the two forms of blame are highly correlated and not well distinguished (Frazier, 1990; Ullman, 1997).

Relatedly, perceived provocation was also associated with higher insecure adult romantic attachment. Again, recalling events that were thought to provoke the partner may elicit attitudes regarding one's character (Frazier, 1990). Alternatively, the causal pathway may be reversed. Individuals who are insecurely attached in romantic relationships may be more likely to verbally provoke their partner, threaten the relationship by interacting with other potential relationship partners or threaten the partner's authority. This alternative explanation is explored in more detail below.

It was expected that commitment to a relationship in which violence occurs would be associated with an increased sense of threat to future intimacy. However, this finding was not confirmed. Additionally, it was hypothesized that perceptions of alterability would be positively correlated with a sense of control over future intimacy. This was also not confirmed. An interpretation of these results is provided below. Furthermore, the sense of threat to future intimacy was associated with lower perceptions of control over achieving it.

Finally, hypotheses regarding appraisal were confirmed. A greater sense of threat to future intimacy was associated with more insecure adult romantic attachment. Contrarily, a greater sense of control over future intimacy was associated with less insecure adult romantic attachment.

Assessment of CFA (H21-H23). As hypothesized, the CFA fit adequately. Although the model was significant and this was not due to being overpowered, other fit indices suggest an adequate fit. The indicators all loaded significantly on their respective latent construct and the bivariate correlations that were previously found were confirmed. One additional correlation was found which was previously hypothesized. In the CFA, victim's intoxication was signficantly associated with perceptions of alterability. This suggests that, when accounting for measurement error, the expected relationship was able to emerge. However, the directional path was not confirmed (see below).

Assessment of Theoretical Model (H24-H35). The structural model suggested that the investment model constructs are all associated as predicted. Greater investment and greater satisfaction is associated with greater commitment. Investment in a relationship is also associated with greater satisfaction. The perception that there are better alternatives to one's relationship is associated with lower investment, satisfaction and, ultimately, commitment to that relationship.

Perceived provocation of a partner prior to experiencing a violent incident is associated with greater perceptions of alterability regarding that incident. However, it is not associated with one's own intoxication or one's partner's intoxication. As previously suggested, perceived provocation seemed to assess verbal provocation, threatening the relationship and threatening the partner's authority. Given the disparate behaviors being assessed, it is understandable why intoxication would not be related to perceived provocation. The behaviors being assessed by the provocation scale do not necessarily co-occur with drinking. Additionally, very few participants reported drinking during the

incident; 87% of the participants and 80% of their partners were not at all intoxicated when the incident occurred. This may have reduced the ability to detect statistical relationships.

Furthermore, victim's and partner's drinking were significantly related. The more intoxicated the victim was, the more intoxicated the partner was. As suggested above, this has been found in previous research. When one partner has been drinking, the other often has been drinking as well (Abbey et al., 2003). Intoxication was not, however, related to perceptions of alterability. This is an interesting finding, since intoxication is typically seen as a behavior that one has control over. Victim's drinking was related in the expected direction. However, the sense that one's own intoxication is associated with whether the incident could have been prevented may be weak. Furthermore, although it was not significant, partner's drinking was associated in the opposite, unexpected direction such that higher partner's intoxication was associated with less perceived alterability. Victims may believe that because the partner's drinking is not directly under their own control, the incident could not have been avoided. These findings should be interpreted with caution considering the low percentage of participants and romantic partners who were intoxicated at the time of the incident.

Commitment to the relationship and perceptions of alterability were not associated with appraisal of the incident in regards to its meaning to relationships in general. It was hypothesized that the more committed the victims were to that particular relationship in which violence occurred, the more their goal of achieving secure intimacy in the future would be affected. Similarly, it was expected that the more the victims perceived control over that particular situation, the more they would believe they had

control over obtaining a secure romantic relationship in the future. Neither of these paths were significant. This suggests that specific relationship- and incident-level variables are not associated with general perceptions or working models of relationships.

The lack of relationship between attitudes toward the specific relationship and incident and appraisal of its impact on relationships generally suggests that attachment may be more stable than what has been suggested in this study. When an individual experiences dating violence, neither commitment to that partner nor beliefs about the incident are related to an individual's perceived ability to attain a secure romantic relationship in the future. Hazan and Shaver (1987) found that individuals who were insecurely attached described not being able to find "true love" (p. 515). This is similar to the threat and control scale developed for the current study. These constructs did not appear to be unidimensional given the moderate correlations; thus, overlap between these constructs is not a concern. However, the direction of the paths may go in the opposite direction, such that attachment influences appraisals of threat and control in response to negative relationship experiences. Rather than dating violence experiences causing a change in attachment systems, pre-existing systems may, instead, frame how an individual interprets a violent experience with a dating partner. Furthermore, an individual may establish unhealthy relationships based on a pre-existing insecure attachment style. These interpretations lend credence to the belief that attachment is highly canalized and behavior drives homeorhesis, or continuity (Fraley, 2004).

Relatedly, assessment of appraisals immediately after the incident may have been different from those assessed during young adulthood. If assessed closer to the

incident, commitment and perceptions of alterability may, in fact, have been related to appraisals. However, with time, reflection on the incident may reflect stable attachment orientations. Previous research suggests that individuals may have a stable attachment style as well as a fluctuating attachment style that is apt to short-term changes (Cozzarelli et al., 2003).

Previous research suggests that mood can influence the emotional valence of recalled events (Bower, 1981; Natale & Hantas, 1982). There is also some evidence that inducing certain attachment style cognitions affects recall of emotional stimuli (Rowe & Carnelley, 2003). In the present study, the attachment style measure preceded items related to the adolescent dating violence incident. Thus, by priming participants' current attachment orientation, the recall of past events may have been impacted. It is difficult to determine how this would have impacted the constructs of commitment and perceptions of alterability. For example, if a negative attachment orientation is primed, would individuals recall greater commitment to a violent partner in the past or less? However, this may be the reason why primary appraisal of threat to future intimacy and secondary appraisal of control over future intimacy following an incident of adolescent dating violence showed a significant association with adult romantic attachment.

Model comparison (H36). The final hypothesis involved comparison of the CFA and structural models. This hypothesis was supported. Although the model fit significantly worse according to a chi-square difference test, comparison of other fit indices suggest that model fit did not differ greatly. Thus, the more parsimonious

structural model would be retained. However, because the hypothesized directional paths were not significant, this full structural model may be of little meaningful value.

Strengths and Limitations

The present study filled a gap in the literature by attempting to predict adult romantic attachment from appraisal of an adolescent dating violence incident. Many studies have assessed sexual and physical dating violence among college women; fewer studies have explored this important issue in adolescence. Furthermore, studies that have assessed dating violence during this critical developmental period typically assess risk factors for experiencing violence victimization or perpetration. Instead, this study explored appraisal of these events and how they impact future relationship functioning. Additionally, details regarding the first incident of adolescent dating violence were assessed as this first incident was presumed to "set the stage" for future relationship interactions, beliefs and capabilities.

Because the present study attempted to predict romantic attachment in young adulthood from an adolescent dating violence incident, it was appropriate that a young adult sample was recruited. The context of the present study required some reflection on how a first incident of adolescent dating violence was assessed. However, the age range of the sample also suggests that the incident did not happen very long ago. Thus, the age range of the participants seemed ideal for the aims. Additionally, a large sample size was recruited and was, therefore, appropriate for the statistical analyses conducted.

Another strength of the present study was the introduction of new variables. Three new scales were created to specifically test appraisal of an adolescent dating

violence incident as well as perceived provocation during the incident. As previously mentioned, appraisal of a specific incident (particularly the first experience of dating violence) has seldomly been explored in previous research. Thus, this study provides an important step forward in understanding how poignant dating experiences can impact relationship functioning later in life.

Despite these strengths, the study also had many limitations. There were numerous methodological difficulties. The initial survey hosting site had limited branching capabilities. Therefore, self-report checkpoints were needed. The unreliability of self-report suggests that this checkpoint method may have led to underreporting of violent events. These methodological issues are discussed in more detail below under the suggestions for future research.

Although it can also be a strength, the use of new scales can be considered a limitation. Scale construction procedures were conducted on a separate sample of participants (See Appendix A) and the results were not identical. Thus, findings related to these scales should be interpreted cautiously. As suggested below, scale structure should be further explored in future research.

This study combined both sexual and physical dating violence experiences. This can be a valuable way to investigate dating violence. Previous research suggests that sexual and physical violence frequently co-occur (Sears, Byers & Price, 2007) and both forms of victimization are associated with similar risk factors and outcomes (Banyard & Cross, 2008). Additionally, definitions of dating violence have called for the joint assessment of both forms of victimization (Shorey, Cornelius, & Bell, 2008). However, there may be distinct differences in how these experiences are interpreted and how they

impact future relationships. Thus, this definition of adolescent dating violence may have limited the interpretability of the results.

Finally, participants were asked to recall the first incident of adolescent dating violence victimization. Although this was done to determine if this type of incident sets a precedent for future relationships, it may be more important to assess multiple experiences. This is explained in greater detail below under suggestions for future research.

Suggestions for Future Research

Based on the findings of this study, there are numerous areas of inquiry that should be pursued in the future. Questions that remain include: 1) What is the relationship between parent-child attachment, romantic attachment and appraisal of violent incidents?; 2) What is the impact of multiple experiences on attachment as opposed to a single violent incident?; 3) What is the relationship between perceived provocation, relationship investment and primary appraisal of threat to future intimacy following a violent incident?; 4) What is the future utility of the scales that were created for the present study?; and 5) What concerns should be explored and ameliorated regarding internet data collection systems?

Some hypotheses in this study were confirmed, including the relationship between appraisal of a violent incident and insecure romantic attachment in young adulthood. The direction of the relationship between these constructs should be explored in more depth. As previously mentioned, it is possible that adolescents enter relationships with an established attachment orientation. This may, in turn, affect how violence is appraised rather than the reverse relationship. The present study sought to

assess violent incidents that occurred with a romantic partner between the ages of 14 and 18. However, research suggests that some adolescents have already established loose romantic ties by this time (Connolly et al., 2004). Thus, the age range that was included in the present study may not have captured the time of romantic relationship initiation. Because of this, participants may have already established romantic attachment orientations prior to the relationship in which the violent incident occurred. Future research would benefit from disentangling this change over time. It would be ideal to conduct a longitudinal study of adolescents in which they could be recruited in middle school prior to establishing romantic relationships with opposite-sex peers. Attachment orientations with parents could be assessed at the beginning of the study. These individuals could be followed over time to establish a trajectory of change in romantic attachment orientations. A study like this would help to establish how infant attachment is related to nascent romantic attachment orientations. Furthermore, it could explore the impact of romantic relationship experiences on romantic relationship attachment in adulthood. This change could be modeled in relation to positive and negative relationship events, including violence.

The relationship between dating violence and subsequent attachment style may be time-limited. Individuals may only experience attachment style change for a short period of time following a traumatic event and eventually return to their typical attachment style. As previously mentioned, Cozzarelli et al. (2003) suggests that individuals may have a stable "baseline" attachment style as well as a "working" attachment style that is subject to short-term changes (p. 342). It would be important to assess this model in a sample of adolescents to explore appraisal processes

immediately after a violent event occurs. Furthermore, following these individuals over time may provide greater insight into the direction of effects. It is important to explore changes in attachment processes during adolescence, given the high degree of stability in attachment during adulthood compared to infancy and childhood (Fraley & Brumbaugh, 2004). Canalization is stronger with age (Fraley & Brumbaugh, 2004). Relatedly, threat and control appraisals following a violent incident may be associated with the type of relationship individuals enter after the violent relationship has dissolved. A longitudinal study tracking relationship behaviors among adolescents, positive and negative events including violence, appraisals of those events and subsequent attachment and relationship qualities would be an ideal goal. However, these types of studies are difficult to conduct due to the extended period of time required, the challenge of maintaining contact with participants, and the cost of data collection.

It is also important to explore other forms of appraisals in response to violence. The present study focused on the link between situation-specific characteristics (e.g., relationship commitment and alterability of a violent incident) and appraisals related to intimacy goals. Future research should explore if commitment and perceptions of alterability perhaps impact other types of appraisal, such as those related to personal safety. Additionally, understanding coping responses (e.g., approach versus avoidant coping) may be important outcomes to assess. These types of questions could be explored using the aforementioned methodology.

Fraley and Shaver (2000) state that the relationship between infant attachment and adult romantic attachment is moderate at best. But, what accounts for this change? It is possible that the more romantic relationships individuals experience that contradict

their pre-existing attacment orientation, the less likely infant attachment will be correlated with adult romantic attachment. As previously mentioned, a longitudinal study exploring change in attachment orientations throughout adolescence would be optimal.

The relationship between perceived provocation, relationship investment and primary appraisal of threat to future intimacy warrants further inquiry. These questions should be explored specifically in the context of a violent relationship. Investigating adolescent romantic dyads may help provide more information. Future research would benefit from recruiting adolescent romantic partners and measuring investment model constructs, then following them over time. At future time points, the frequency of occurrence for positive and negative relationship events, including violence, could be assessed. Then, researchers could explore how investment model constructs were associated with the violence perpetration and victimization and whether it was related to perceived provocation. Furthermore, change in investment model constructs could be explored as well as primary and secondary appraisal of the incident. Studying the dyad would also provide for greater insight into how the investment model constructs are related between the partners. Is perceived provocation greater when the victim is highly invested or committed and the partner is not? Or, is perceived provocation greater when both are highly invested but satisfaction is low for both partners? Such a design would also allow researchers to investigate typical interaction behaviors and reciprocal aggression (Archer, 2000). By investigating how the couple interacts doing a benign task and then following the couple over time, the predictive ability of negative interaction behaviors on change in investment model constructs, perceived provocation in a violent event and later appraisal could be explored. Many of the items that assessed perceived

provocation such as swearing at or arguing with the partner may exist beyond that violent incident and predict violence in the future.

It would also be fruitful to conduct an experimental study in which short-term changes in investment model constructs and appraisals are investigated. Romantic partners could be brought in for a laboratory session in which one partner provokes the other in some way and short-term changes in investment model constructs and appraisals of threat to and control over intimacy goals would be assessed. This type of study, however, would suffer from ethical concerns by manipulating an existing relationship. Furthermore, if dating violence exists in this relationship, having one participant provoke the other may cause conflict in the relationship and lead to an increased risk of victimization. Extensive debriefing would be required.

The present study developed three new scales to assess perceived provocation, perceived alterability of the violent incident and control over future intimacy. Future research should attempt to replicate and validate these scales. The present study attempted to replicate the scale construction findings in a separate sample and discrepencies emerged. Replication of these scales may be more likely with a similar sample. The separate sample for the present study was asked to recall an argument or disagreement with a romantic partner during adolescence. If this sample had instead been instructed to recall an incident of dating violence, the factor structure may have been more similar. Furthermore, items related to perceived provocation and its potential subscales likely require further exploration and refinement. The scale was initially developed based on Flynn and Graham's (2010) model and the five potential proximal reasons for relationship aggression. Factor analysis of the items instead

revealed three components that did not coincide with this model. Thus, this model may not be ideal for conceptualizing perceived provocation or these items need to be re-evaluated. Additionally, convergent validity can be explored for these scales. For example, perceived provocation may correlate highly with other behavioral self-blame measures. Discriminant validity could also be assessed by correlating these scales with apparently unrelated measures.

Online surveys are becoming more popular, but future research would benefit from careful consideration of the pros and cons of such methods. As mentioned previously, the first hosting site used for the present study had very limited logic options for the necessary branching. The second hosting site was far more advanced and drastically streamlined the logic that was required. Thus, it is important to weigh the numerous hosting sites available to determine which best fits the goals of the research. Additionally, it was clear that participants do not necessarily self-select based on advertising criteria. Even though the advertisement and information sheet for this study clearly stated the inclusion criteria, participants who did not fit these requirements took the survey. It is important to keep this in mind and carefully screen the data despite having carefully communicated the inclusion criteria in printed materials.

Practical Implications for Prevention and Treatment

The present study suggests numerous implications for prevention and treatment. As previously mentioned, appraisal of stressful events is an important predictor of subsequent psychological and physical health (Folkman, Lazarus, Gruen & DeLongis, 1986; Frazier, Mortenson, & Steward, 2005). Additionally, one's attachment style is

related to relationship health and functioning (Collins et al., 2002; Hazan & Shaver, 1987).

Based on these potentially impactful connections, it will be important for clinicians to explore appraisals in response to dating violence among clients who have been victimized. Individuals who exhibit insecure attachment in their current romantic relationships may have experienced a dating violence incident. Their interpretation of that specific event may be strongly related to their current relationship functioning. By exploring this connection, individuals may be able to approach future romantic relationships in a healthier, more fulfilling way. Victims should be encouraged to acknowledge their victimization, yet recognize that future relationships can be positive.

In the present study, participants expressed moderately high levels of commitment, investment and satisfaction with relationships in which violence occurred. Prevention programs would benefit from incorporating information about relationship commitment and related investment model constructs into their dating violence prevention protocol. Adolescents who are strongly committed to their partner, invested in the relationship and otherwise satisfied with the relationship, may be more likely to remain with an abusive partner after violence has occurred (Rusbult & Martz, 1995). Additionally, they may appraise the violence as being more benign compared to individuals were were less committed, invested and satisfied (Rusbult & Martz, 1995). Because remaining in an unhealthy relationship may still provide positive benefits such as better social status and intimacy, adolescents must be provided with quality alternatives to that relationship in order to achieve these goals (Jessor, 1991). For example, prevention programs should encourage adolescents to embrace other aspects

of themselves and other social relationships to fulfill developmental needs. Expanding their self-concept may lessen their need to remain in an abusive relationship. Additionally, by explaining that feelings of commitment to a relationship partner does not mean that violence will not occur and does not diminish the seriousness of such occurrences, adolescents may be more effective at identifying victimizing behavior and taking steps to end the unhealthy relationship.

The findings related to perceived provocation imply that behavior that potentially jeopardizes a relationship or leads to self-blame is connected to relationship investment, appraisals of threat to future intimacy attainment following an experience of dating violence, and romantic attachment orientation in adulthood. Prevention programs should address the use of negative interaction styles in adolescent relationships. Adolescents are often unsure of what is normal and appropriate in romantic relationships and this makes them vulnerable to abuse (Livingston et al., 2007). By teaching young adolescents appropriate conflict resolution skills and how to communicate needs and wants effectively with romantic partners, victimization may be prevented. Additionally, adolescents should be informed that, although they may behave in ways that they believe results in victimization, nothing justifies violence. By combating perceptions of self-blame, threat appraisals and subsequent insecure attachment orientations in adulthood may be reduced.

APPENDIX A

Pilot Study

A preliminary study was conducted to assess the factor structure of the three new scales. This study utilized a separate sample prior to the primary study. The methodology and results of this study are described below. The original goal was to complete this pilot prior to initiating the primary study. The resu lts of the pilot were intended to guide item selection for these three scales in the primary study. Delays in HIC approval, access to the participant pool and the large amount of participants who were screened out (see below) delayed this study so long that the full study was initiated without the benefit of these results. Thus, this pilot study is now best conceptualized as an independent validation of the factor structure of these measures.

Method

Participants

Participants were 136 undergraduate women at Wayne State University between the ages of 18 and 22 (*M* = 19.91; *SD* = 1.22). Participants were required to be female; currently between the ages of 18 and 22; and to have exclusively dated an opposite-sex individual for at least one month when they were between the ages of 16 and 18. Forty-nine self-identified as White/Caucasian (*n* = 66), 27% were Black/African American (*n* = 37), 10% were Asian/Pacific Islander (*n* = 14), 10% described their ethnicity as “other” (*n* = 13), 2% were Biracial/Multiracial (*n* = 3) and 2% declined to answer (*n* = 3). Most of the participants were either in an exclusive dating relationship (46%; *n* = 63) or single and not dating exclusively (38%; *n* = 51). Seven percent were living with a partner but

not engaged or married (*n* = 10), 5% were engaged (*n* = 7), 1% was married (*n* = 2), 1% indicated "other" (*n* = 1) and 2% declined to answer (*n* = 2).

Procedure

The pilot study was administered as an online survey through the psychology department's online research participation website. Participants received .5 course credit toward any course that would allow it for completing the survey. All participants were identified by a random code; no identifying information was recorded.

Measures

Seriousness of argument. Participants were instructed to: "Think back on an argument with someone you liked and who liked you back when you were between the ages of 16 and 18. This can include relationships such as a boyfriend, someone you were dating, or someone you were 'seeing' or 'hanging out with' in a romantic way. Think back on an argument or disagreement that led to hurt feelings or tension with this person." Participants were then asked: "How upsetting was this argument". Response options ranged from 1 (*Extremely upsetting*) to 5 (*Not at all upsetting*).

Perceived provocation. Perceived provocation during the incident was assessed with a new scale consisting of 15 items. Sample items include: "I hit my boyfriend"; "I cheated on my boyfriend" and "I flirted with another boy." Response options ranged from 1 (*Not at all true*) to 5 (*Very much true*).

Perceptions of alterability. Perceptions of alterability were assessed with a new scale created by the author. The piloted scale consisted of eight items. Sample items include: "The situation could have been changed" and "The incident was bound to

happen" (reverse-coded). Response options ranged from 1 (*Not at all true*) to 5 (*Very much true*).

Control over future intimacy. To assess secondary appraisal, items from Sanderson and Cantor's (1995) *Social Dating Goals Scale* were used to construct a new scale. Sanderson and Cantor's scale consists of 13 items that assess the importance of independence and intimacy goals as they relate to relationships. An example is: "In my dating relationships, I try to date people with whom I might fall in love" (intimacy goal). The piloted scale consisted of eight items that were derived from the intimacy items in Sanderson and Cantor's scale. Modified sample items include: "I knew I had control over sharing my most intimate thoughts and feelings in the future" and "I knew I had control over dating those who make my life more comfortable and stable in the future." Response options ranged from 1 (*Completely disagree*) to 5 (*Completely agree*).

Results

Pilot Testing to Develop New Measures

Pilot data cleaning. Data were obtained through two waves of collection during the winter through summer semesters of 2012. The first wave of data were cleaned prior to collecting the second wave of data. Therefore, data cleaning for the two waves are described separately below. Cases were screened based on eligibility criteria. Two hundred nine participants completed the survey. As can be seen in Table A1, after screening the data, only 136 cases were retained.

Missing data ranged from zero to 12.38% data per case. The average amount of missing data per participant was 2.72%. Missing values analysis was conducted on

Table A1

Number of Cases Deleted Due to Screening Criteria

Reason for case deletion	Phase 1	Phase 2	Combined
Initial sample size	147	62	209
Age (>22 years or refused to answer)	28	10	38
Gender (male or refused to answer)	14	1	15
Indicated they never experienced a fight or disagreement in and adolescent romantic relationship	6	3	9
Time to complete survey (<9 minutes)	12	5	17
Combination of questionable data, percentage of missing data and time taken to complete	8	0	8
Sample size in analyses	89	47	136

Note. Parenthetical values represent the criteria used for deletion. Some cases overlap in multiple criteria.

each of the scales separately. Little's MCAR test was assessed to determine whether the data were missing completely at random. Missing data for the perceived provocation scale were determined to be missing completely at random, χ^2 (197) = 197.55, p = .476. Six items had no missing data. For the items that had missing data, the percentage of missing data ranged from .7 to 6.6%. Missing data for the perceived alterability scale were also missing completely at random, χ^2 (110) = 130.78, p = .086. Each item had some missing data, ranging from 3.7 to 7.4%. Finally, missing data for control over future intimacy were not missing completely at random, χ^2 (65) = 107.23, p = .001. Missing data, therefore, are either missing at random (based on observable data) or missing not at random (based on external data). Expectation maximization techniques are appropriate for data that are missing completely at random or missing at random. The distinction between missing at random and missing not at random varies along a continuum and cannot be determined (Newman, 2010). Therefore, expectation maximization is still an appropriate technique to use (Newman, 2010). For this scale, each item had some missing data, ranging from 1.5 to 4.4%.

Missing data were then estimated within each scale separately using expectation maximization techniques. Some data fell outside the acceptable range for the data (i.e., slightly below one). Therefore, these data were truncated to be the smallest value. This was done for three variables in the perceived provocation scale: "I led him on sexually"; "I annoyed or pestered him"; and "I embarassed him in front of his peers". For each of these items, only one datum met this criteria and was recoded to one.

Data were screened for nonnormality. Skew and kurtosis was assessed for each variable. Three items in the perceived provocation scale were skewed and kurtotic: "I hit

my boyfriend" (Skew: 3.231; Kurtosis: 12.838); "I cheated on my boyfriend" (Skew: 3.672; Kurtosis: 14.511); and "I embarassed him in front of his peers" (Skew: 2.378; 4.849). A square root transformation was first performed on these variables but nonnormality was not sufficiently corrected. Therefore, these variables were corrected using a log 10 transformation. This improved skew and kurtosis for one variable: "I embarassed him in front of his peers" (Skew: 1.821; 1.963). The final two variables were corrected using an inverse transformation: "I hit my boyfriend" (Skew: -1.795; Kurtosis: 1.558); "I cheated on my boyfriend" (Skew: -2.259; Kurtosis: 3.618). After correcting for nonnormality, variables that were worded in the opposite direction were reverse-coded.

Pilot data scale building. Scale building proceeded through three primary analyses for each scale: assessment of bivariate correlations; principal components analysis (PCA); and reliability analysis. The intercorrelations among the perceived provocation scale items was expected to differ somewhat between the pilot study and the full study due to the nature of the interaction being assessed (i.e., a serious disagreement versus adolescent dating violence). However, participants stated that the argument or disagreement was, on average, very upsetting (M = 1.86; SD = .88). The other scales were expected to result in similar loadings regardless of the type of interaction they assessed.

Perceived Provocation Scale (H1). Descriptive information for the Perceived Provocation Scale items prior to transformations can be found in Table A2. Bivariate relationships were assessed among the items in the perceived provocation scale (See Table A3). One item was removed prior to proceeding with PCA and reliability analyses. The item "I led him on" was not highly correlated with any other items. Visual

Table A2

Descriptive Information for Perceived Provocation Scale Items

	Observed Range	*M*	*SD*	Skew	Kurtosis
1. I hit my boyfriend.	1-5	1.25	.62	3.23	12.84
2. I swore at my boyfriend.	1-5	2.47	1.33	.59	-.77
3. I argued with my boyfriend.	1-5	3.44	1.18	-.13	-1.07
4. I cheated on my boyfriend.	1-5	1.24	.70	3.67	14.51
5. I flirted with another boy.	1-5	2.05	1.24	1.07	.16
6. I tried to break up with my boyfriend.	1-5	3.30	1.59	-.26	-1.51
7. I led him on sexually.	1-5	1.96	1.24	1.19	.42
8. I annoyed or pestered him.	1-5	2.28	1.22	.77	-.34
9. I was hanging out with another boy.	1-5	1.71	1.14	1.66	1.80
10. I went to a party or some other social event without him.	1-5	2.68	1.46	.32	-1.25
11. I was ignoring him.	1-5	1.82	1.10	1.35	1.01
12. I refused to do something that he asked me to do.	1-5	2.39	1.31	.65	-.65
13. I disagreed with him on an issue that was important to him.	1-5	2.80	1.42	.11	-1.27
14. I embarassed him in front of his peers.	1-5	1.46	1.02	2.38	4.85
15. I brought up an issue that he didn't want to talk about.	1-5	2.78	1.55	.28	-1.42

Note. Items 1, 4 and 14 were transformed for analyses. The nontransformed descriptives are provided above.

Table A3

Correlations and Descriptive Statistics Perceived Provocation Scale Items

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. I hit my boyfriend.	--													
2. I swore at my boyfriend.	-.37**	--												
3. I argued with my boyfriend.	-.26**	.48**	--											
4. I cheated on my boyfriend.	.24**	-.17*	-.20	--										
5. I flirted with another boy.	.25**	.28**	.25**	-.46**	--									
6. I tried to break up with my boyfriend.	-.21	.30**	.37**	-.21*	.30**	--								
7. I led him on sexually.	-.07	.15	.05	-.16	.25**	.07	--							
8. I annoyed or pestered him.	-.22*	.52**	.46**	-.15	.29**	.24**	.23**	--						
9. I was hanging out with another boy.	-.10	.25**	.15	-.38**	.48**	.21*	.10	.18*	--					
10. I went to a party or some other social event without him.	-.09	.16	.10	-.35**	.35**	.09	.21*	.11	.44**	--				
11. I was ignoring him.	-.14	.16	.19*	-.24**	.24**	.21*	.09	.32**	.16	.28**	--			
12. I refused to do something that he asked me to do.	-.26**	.04	.23**	-.30**	.19*	.19*	.11	.15	.21*	.26**	.46**	--		
13. I disagreed with him on an issue that was important to him.	-.05	.06	.22*	-.01	-.06	.18*	.00	.31**	.09	.00	.07	.25**	--	
14. I embarassed him in front of his peers.	-.41**	.31**	.10	-.20*	.15	.09	-.06	.36**	.16	.06	.30**	.24**	.22**	--
15. I brought up an issue that he didn't want to talk about.	-.26**	.33	.42**	-.02	.09	.35**	.11	.48**	.10	.12	.14	.14	.27**	.15

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

assessment of the bivariate correlations appeared to support at least two separate subscales. One subscale appears to assess verbal provocation and the other subscale assesses threatening the relationship by interacting with another individual. Another possible subscale may assess the participant threatening the boyfriend's authority.

PCA with varimax rotation was used because factors were expected to be orthogonal based on the nature of the scale, which was assessing actual behavior instead of attitudes. This was conducted on the 14 retained items of the perceived provocation scale. Four components were extracted with an eigenvalue greater than one. Visual inspection of the scree plot suggests four components as well. Communalities were sufficiently high (above .30) suggesting that the extracted components explain an acceptable amount of variance in the items.

Factor loadings were assessed in the rotated component matrix. As can be seen in Table A4, four factors are supported by the analyses. As previously mentioned, three factors appear to assess a verbal provocation, threatening the relationship by interaction with another person and threatening the boyfriend's authority. A fourth factor contained physical assault by the participant and embarassing the boyfriend. The item "I swore at my boyfriend" also loads highly on this factor. Because this factor was driven by two items that do not cleanly hang together and this problem was also identified through visual inspection of the correlation matrix, these two items were removed and PCA was rerun. This was done separately with both items. Although removing "I hit him" resulted in a higher percentage of cumulative variance explained (60.86%), a fourth factor was still retained in which several items from the first factor were cross-loading. Alternatively, removing "I embarrassed him" resulted in a cleaner three factor solution

Table A4

Principal Components Analysis with Varimax Rotation on Pilot Data
Perceived Provocation Scale

	1	2	3	4
I argued with my boyfriend.	**.743**	.153	.102	.060
I tried to break up with my boyfriend.	**.585**	.270	-.036	.101
I annoyed or pestered him.	**.678**	.076	.329	.160
I brought up an issue that he didn't want to talk about.	**.749**	-.048	.061	.139
I cheated on my boyfriend.	-.013	**-.684**	-.220	-.158
I flirted with another boy.	.202	**.748**	.190	-.075
I was hanging out with another boy.	.157	**.727**	-.008	.074
I went to a party or some other social event without him.	.042	**.692**	-.077	.200
I hit my boyfriend.	-.191	-.127	**-.747**	-.023
I swore at my boyfriend.	**.607**	.215	**.473**	-.228
I embarassed him in front of his peers.	.068	.009	**.779**	.322
I was ignoring him.	.087	.294	.236	**.600**
I refused to do something that he asked me to do.	.044	.277	.152	**.761**
I disagreed with him on an issue that was important to him.	**.415**	-.214	-.090	**.590**

but lower variance explained (52.89%). Additionally, with this item removed, only 27% of the variance in the item “I hit him” was explained by the extracted components. Therefore, both items were removed. This resulted in a clean three factor solution with 55.63% of variance explained. See Table A5. The analyses that follow used the three subscales separately.

PCA with varimax rotation was run with each scale separately. The first scale consisted of five items and assess verbal provocation. One item was extracted with an eigenvalue over one and 52.05% variance explained. Communalities were sufficiently high for all items. Scree plot assessment also indicated one factor. Factor loadings were sufficiently high. The second scale consisted of four items that assess threat to the relationship. One factor was extracted with an eigenvalue over one and 55.85% variance explained. Communalities were sufficiently high for all items. The scree plot confirms the one-factor solution. Factor loadings were high. Finally, the third scale consisted of three items that assess threatening the boyfriend’s authority. One component was extracted with an eigenvalue over one and 51.73% variance explained. Only 23% of the variance was explained in the item “I disagreed with him on an issue that was important to him”. The scree plot suggests that there are two components; however, this is not unusual given that three items were included. The three items loaded sufficiently high, although one item indicated a relatively low factor loading (“I disagreed with him on an issue that was important to him”; .483).

Reliability was then assessed for each subscale separately. The five-item verbal provocation subscale yielded sufficient internal reliability (Cronbach’s α = .76). By

Table A5

Principal Components Analysis with Varimax Rotation on Pilot Data Perceived Provocation Scale Two Items Removed

	1	2	3
I swore at my boyfriend.	**.735**	.266	-.197
I argued with my boyfriend.	**.737**	.121	.134
I tried to break up with my boyfriend.	**.529**	.219	.158
I annoyed or pestered him.	**.761**	.106	.165
I brought up an issue that he didn't want to talk about.	**.718**	-.083	.183
I cheated on my boyfriend.	-.065	**-.703**	-.185
I flirted with another boy.	.253	**.759**	-.049
I was hanging out with another boy.	.152	**.718**	.047
I went to a party or some other social event without him.	.010	**.666**	.203
I was ignoring him.	.140	.317	**.620**
I refused to do something that he asked me to do.	.037	.270	**.809**
I disagreed with him on an issue that was important to him.	.343	-.247	**.560**

removing “I tried to break up with my boyfriend”, alpha would be slightly improved (Cronbach’s α = .76). This item was determined to assess something different from what the other items assessed. The other items distinctly assess a verbal altercation with the partner. However, attempting to break up with the partner does not necessitate a verbal altercation. Therefore, it was removed. PCA with varimax rotation was rerun on the four factors. One component was extracted with an eigenvalue over one and 58.86% variance explained.

The four-item threatened relationship subscale was assessed and yielded poor internal reliability (Cronbach’s α = .55). One item was removed (“I cheated on my boyfriend”). This improved alpha (Cronbach’s α = .68). This is reasonable given that this is a discrete event that does not necessarily overlap with the other items; although an individual who cheated on a partner may endorse the other items, endorsement of the other items does not necessarily mean the participant cheated on her partner. PCA with varimax was rerun on the three-item scale. This resulted in a one component extracted with an eigenvalue over one and 61.66% variance explained.

Finally, the three-item threatened authority subscale was assessed and also yielded poor internal reliability (Cronbach’s α = .50). One item was removed, which improved internal consistency (Cronbach’s α = .62). PCA with varimax rotation on the two-item scale resulted in 72.84% variance explained. See Table A6 for the final scales.

Reliability analyses were conducted on the final nine item scale. As hypothesized, internal consistency was good (Cronbach’s α = .75).

Table A6

Single Factor Solutions for Perceived Provocation Subscales

	Factor Loading	Explained Variance	Cronbach's α
Verbal provocation		58.86%	.76
I swore at my boyfriend.	.765		
I argued with my boyfriend.	.773		
I annoyed or pestered him.	.811		
I brought up an issue that he didn't want to talk about.	.716		
Threat to relationship		61.66%	.68
I flirted with another boy.	.777		
I was hanging out with another boy.	.829		
I went to a party or some other social event without him.	.748		
Threaten Authority		72.84%	.62
I was ignoring him.	.853		
I refused to do something that he asked me to do.	.853		

Perceptions of Alterability Scale (H3-H4). Descriptive information for the Perceptions of Alterability Scale items can be found in Table A7. Bivariate relationships were assessed among the items in the perceptions of alterability scale. Three separate subscales seem to be evident. One appears to assess the perception that the incident could have been avoided; another assesses personal culpability; and the last shows a high correlation between two items that are reverse coded. Because of its low intercorrelations with all items except for the other reverse coded item, one item was removed from further analyses ("The incident was bound to happen"). See Table A8.

PCA with oblique rotation was used because factors were expected to correlate. This was conducted on the seven retained items of the perceptions of alterability scale. Two components were extracted with eigenvalues over one; these components explained 62.68% of the variance. Communalities suggest that a sufficient amount of variance was explained in the items by the components except for one item; only 21% of the variance was explained in the item: "There's nothing that could have been done to avoid the incident". The scree plot also suggests a two factor solution. The pattern matrix was assessed to determine factor loadings. Two components emerged. One appears to assess perceptions of alterability and another seems to assess personal culpability. See Table A9.

Based on the correlation matrix and the PCA, one item was removed and PCA was rerun ("If I acted differently, this would not have happened"). This item assesses a distinctly different sentiment; it asks about the person's actions rather than general control. This item did not correlate highly with the other items (except for the other item that assessed personal control) and had the highest loading on the second component,

Table A7

Descriptive Information for Perceived Alterability Scale Items

	Observed Range	*M*	*SD*	Skew	Kurtosis
1. The situation could have been changed.	1-5	3.19	1.36	.02	-1.34
2. The incident could have turned out differently.	1-5	3.39	1.32	-.26	-1.08
3. The things that led to this incident could have been changed.	1-5	3.33	1.29	-.28	-1.00
4. The incident happened because of things we had control over.	1-5	3.13	1.42	-.11	-1.28
5. If I acted differently, this would not have happened.	1-5	2.45	1.44	.57	-1.06
6. I could have prevented this incident from happening.	1-5	2.41	1.40	.67	-.83
7. There's nothing that could have been done to avoid the incident.	1-5	3.91	1.26	-.98	-.10
8. The incident was bound to happen.	1-5	2.73	1.43	.19	-1.29

Table A8

Intercorrelations of Items in Perceptions of Alterability Scale

	1	2	3	4	5	6	7
1. The situation could have been changed.	--						
2. The incident could have turned out differently.	.67**	--					
3. The things that led to this incident could have been changed.	.59**	.67**	--				
4. The incident happened because of things we had control over.	.28**	.39**	.36**	--			
5. If I acted differently, this would not have happened.	.19*	.27**	.24**	.11	--		
6. I could have prevented this incident from happening.	.25**	.36**	.39**	.34**	.72**	--	
7. There's nothing that could have been done to avoid the incident.	.21*	.36**	.19*	.10	.10	.13	--
8. The incident was bound to happen.	-.02	.05	-.06	-.03	-.03	-.01	.34**

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

Table 8

Principal Components Analysis with Oblique Rotation on Pilot Data Perception of Alterability Scale

	1	2
The situation could have been changed	**.838**	-.061
The incident could have turned out differently	**.877**	.051
The things that led to this incident could have been changed	**.789**	.100
The incident happened because of things we had control over	**.498**	.135
There's nothing that could have been done to avoid the incident	**.478**	-.090
If I acted differently, this would not have happened	-.066	**.940**
I could have prevented this incident from happening	.116	**.888**

thereby potentially driving this component. After removing this item, PCA with oblique rotation was rerun. One component was extracted with an eigenvalue over one and 47.97% of the variance was explained. The scree plot also indicates one component. All of the items were sufficiently loading on the component.

However, the amount of variance explained was rather poor and the communalities suggested that only 17% of the variance in one item was being explained ("There's nothing that could have been done to avoid the incident"). This item was also problematic in previous analyses, including the correlation matrix and the initial PCA. This item was removed and PCA was rerun. One component was extracted with an eigenvalue over one and 55.27% of the variance explained. The communalities were sufficiently high (over .30). The scree plot confirms the one component solution. Furthermore, each item loads highly on the component. Reliability was run on this five-item scale and was acceptable (Cronbach's α = .79). Reliability analyses suggest that removing one item would improve alpha ("I could have prevented this incident from happening"). This item was therefore removed and PCA was rerun. One component was extracted with an eigenvalue over one and 62.96% variance explained. Communalities were all sufficiently high. The scree plot also suggests a one component solution. Each item loaded highly on the component. Reliability analysis was run on this final four-item scale and was acceptable (Cronbach's α = .79). See Table A10.

Control over future intimacy scale (H8-H9). Descriptive information for the Control Over Future Intimacy Scale items can be found in Table A11. Bivariate relationships were assessed among the items in the control over future intimacy scale.

Table 9

Principal Components Analysis with Oblique Rotation on Pilot Data Perception of Alterability Scale Four-Item Scale

	Factor Loading	Explained Variance	Cronbach's α
Perceptions of Alterability Scale		62.96%	0.791
The situation could have been changed	**.827**		
The incident could have turned out differently	**.885**		
The things that led to this incident could have been changed	**.847**		
The incident happened because of things we had control over	**.577**		

Table A11

Descriptive Information for Control Over Future Intimacy Scale Items

	Observed Range	*M*	*SD*	Skew	Kurtosis
1. I knew I had control over sharing thoughts and feelings.	1-5	3.70	.95	-.45	-.23
2. I had control over dating those who make my life comfortable and stable.	1-5	3.93	.93	-.87	.55
3. I had control over finding love.	1-5	3.41	1.08	-.31	-.69
4. I had control over dating someone I consider my best friend.	1-5	3.83	.96	-.71	.08
5. I had control over dating someone I could count on.	1-5	3.91	.96	-.81	.26
6. I had control over having an emotionally intimate relationship.	1-5	3.66	.98	-.53	-.12
7. I had control over having good future relationships.	1-5	3.71	1.03	-.45	-.61
8. I had control over having a fulfilling relationship.	1-5	3.72	.92	-.36	-.37

All items were highly intercorrelated, suggesting one underlying construct. See Table A12.

PCA with oblique rotation was used because factors were expected to correlate. This was conducted on the eight items of the control over future intimacy scale. Two components were extracted with eigenvalues over one; these components explained 69.66% of the variance. Communalities suggest that a sufficient amount of variance was explained in the items by the components. The scree plot suggests a one factor solution. The pattern matrix was assessed to determine factor loadings. Two components emerged. Two items load heavily on the second component: “I knew I had control over sharing my thoughts and feelings” and “I had control over dating those who make my life comfortable and stable”. See Table A13.

Based on the the PCA results, one item was removed and PCA was rerun (“I knew I had control over sharing thoughts and feelings”). This item is oddly worded and may not assess romantic intimacy per se. When this item was removed, one component was extracted with an eigenvalue over one and 59.90% of variance explained. The communalities suggest that sufficient variance is explained in the items. The factor loadings are all sufficiently high. Reliability was then run on this final seven-item scale. Reliability was good (Cronbach’s α = .88). See Table A14.

Comparison of Pilot Study Findings to Full Study Findings

As can be seen in Table A15, the items retained and deleted in the pilot study were compared to those retained and deleted from the full study. For the perceived provocation scale, three items did not match on inclusion for the pilot and full studies. Each of these items differed in the subscale associated with threatening the boyfriend’s

Table A12

Intercorrelations of Items in Control Over Future Intimacy Scale

	1	2	3	4	5	6	7
1. I knew I had control over sharing thoughts and feelings.	--						
2. I had control over dating those who make my life comfortable and stable.	.65**	--					
3. I had control over finding love.	.31**	.39**	--				
4. I had control over dating someone I consider my best friend.	.43**	.44**	.41**	--			
5. I had control over dating someone I could count on.	.44**	.47**	.41**	.59**	--		
6. I had control over having an emotionally intimate relationship.	.48**	.47**	.44**	.60**	.67**	--	
7. I had control over having good future relationships.	.30**	.44**	.49**	.52**	.54**	.68**	--
8. I had control over having a fulfilling relationship.	.36**	.33**	.49**	.56**	.61**	.70**	.78**

Table A13

Principal Components Analysis with Oblique Rotation on Control Over Future Intimacy Scale

	1	2
I had control over finding love.	**.621**	.059
I had control over dating someone I consider my best friend.	**.633**	.212
I had control over dating someone I could count on.	**.672**	.211
I had control over having an emotionally intimate relationship.	**.783**	.137
I had control over having good future relationships.	**.939**	-.140
I had control over having a fulfilling relationship.	**.971**	-.162
I knew I had control over sharing thoughts and feelings.	-.007	**.909**
I had control over dating those who make my life comfortable and stable.	.085	**.844**

Table A14

Principal Components Analysis with Oblique Rotation on Control Over Future Intimacy Scale with Seven Items

	Factor Loading	Explained Variance	Cronbach's α
Control Over Future Intimacy Scale		59.90%	.88
I had control over finding love.	.652		
I had control over dating someone I consider my best friend.	.763		
I had control over dating someone I could count on.	.801		
I had control over having an emotionally intimate relationship.	.855		
I had control over having good future relationships.	.837		
I had control over having a fulfilling relationship.	.844		
I had control over dating those who make my life comfortable and stable.	.631		

Table A15

Items Included in Pilot and Full Studies

Scale	Item	Included in Final Version: Pilot Study	Included in Final Version: Full Study
Perceived Provocation Scale			
	1. I hit my boyfriend.	No	No
	2. I swore at my boyfriend.	Yes	Yes
	3. I argued with my boyfriend.	Yes	Yes
	4. I cheated on my boyfriend.	No	No
	5. I flirted with another boy.	Yes	Yes
	6. I tried to break up with my boyfriend.	No	No
	7. I led him on sexually.	**No**	**Yes**
	8. I annoyed or pestered him.	Yes	Yes
	9. I was hanging out with another boy.	Yes	Yes
	10. I went to a party or some other social event without him.	Yes	Yes
	11. I was ignoring him.	**Yes**	**No**
	12. I refused to do something that he asked me to do.	Yes	Yes
	13. I disagreed with him on an issue that was important to him.	**No**	**Yes**
	14. I embarassed him in front of his peers.	No	No
	15. I brought up an issue that he didn't want to talk about.	Yes	Yes
Perceptions of Alterability Scale			
	1. The situation could have been changed.	Yes	Yes
	2. The incident could have turned out differently.	Yes	Yes
	3. The things that led to this incident could have been changed.	Yes	Yes
	4. The incident happened because of things we had control over.	Yes	Yes
	5. If I acted differently, this would not have happened.	**No**	**Yes**
	6. I could have prevented this incident from happening.	**No**	**Yes**
	7. There's nothing that could have been done to avoid the incident.	No	No
	8. The incident was bound to happen.	No	No
Control over Future Intimacy Scale			
	1. I knew I had control over sharing thoughts and feelings.	**No**	**Yes**
	2. I had control over dating those who make my life comfortable and stable.	Yes	Yes
	3. I had control over finding love.	Yes	Yes
	4. I had control over dating someone I consider my best friend.	Yes	Yes
	5. I had control over dating someone I could count on.	Yes	Yes
	6. I had control over having an emotionally intimate relationship.	Yes	Yes
	7. I had control over having good future relationships.	Yes	Yes
	8. I had control over having a fulfilling relationship.	Yes	Yes

Note. Items that do not match on inclusion for the pilot and full studies are boldfaced.

authority. The other two subscales (verbal provocation and threat to relationship) were the same for both the pilot study and the full study.

Two items that were deleted in the perceptions of alterability scale for the pilot data were retained in the full study. These items are unique in that they capture self-blame compared to the other items that assess alterability generally. The two reverse-scored items were removed for both the pilot and full studies.

Finally, one item in the control over future intimacy scale that was deleted in the pilot data were retained in the full study. All other items were retained in both studies.

APPENDIX B

Study Measures

SEXUAL ASSAULT VICTIMIZATION

The following questions concern sexual experiences that you may have had that were unwanted. We know that these are personal questions, so we do not ask your name or other identifying information. Your information is completely anonymous. We hope that this helps you to feel comfortable answering each question honestly. Mark the box showing the number of times each experience has happened to you. If several experiences occurred on the same occasion – for example, if one night someone told you some lies and had sex with you when you were drunk, you would check both of these boxes.

Some questions ask you to think back to a relationship with someone you liked and who liked you back when you were between the ages of 14 and 18. This would include relationships such as a boyfriend, someone you were dating, or someone you were "seeing" or "hanging out with" in a romantic way.

0 = Never, 1 = Once, 2 = Twice, 3 = 3 or more times

How many times did this happen with someone you liked and who liked you back (i.e., a boyfriend or someone you were "seeing") when you were between the ages of 14 and 18?

1) A guy fondled, kissed or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (*but did not attempt sexual penetration*) by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
2) A guy fondled, kissed or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (*but did not attempt sexual penetration*) by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
3) A guy fondled, kissed or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (*but did not attempt sexual penetration*) by taking advantage of me when I was too drunk or out of it to stop what was happening.
4) A guy fondled, kissed or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (*but did not attempt sexual penetration*) by threatening to physically harm me or someone close to me.
5) A guy fondled, kissed or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (*but did not attempt sexual penetration*) by using force, for example holding me down with their body weight, pinning my arms or having a weapon.
6) A guy had oral sex with me or made me have oral sex with him without my consent by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
7) A guy had oral sex with me or made me have oral sex with him without my consent

by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
8) A guy had oral sex with me or made me have oral sex with him without my consent by taking advantage of me when I was too drunk or out of it to stop what was happening.
9) A guy had oral sex with me or made me have oral sex with him without my consent by threatening to physically harm me or someone close to me.
10) A guy had oral sex with me or made me have oral sex with him without my consent by using force, for example holding me down with their body weight, pinning my arms or having a weapon.
11) A guy put his penis into my vagina, or inserted his fingers or objects without my consent by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
12) A guy put his penis into my vagina, or inserted his fingers or objects without my consent by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
13) A guy put his penis into my vagina, or inserted his fingers or objects without my consent by taking advantage of me when I was too drunk or out of it to stop what was happening.
14) A guy put his penis into my vagina, or inserted his fingers or objects without my consent by threatening to physically harm me or someone close to me.
15) A guy put his penis into my vagina, or inserted his fingers or objects without my consent by using force, for example holding me down with their body weight, pinning my arms or having a weapon.
16) A guy put his penis into my butt, or inserted his fingers or objects without my consent by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
17) A guy put his penis into my butt, or inserted his fingers or objects without my consent by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
18) A guy put his penis into my butt, or inserted his fingers or objects without my consent by taking advantage of me when I was too drunk or out of it to stop what was happening.
19) A guy put his penis into my butt, or inserted his fingers or objects without my consent by threatening to physically harm me or someone close to me.
20) A guy put his penis into my butt, or inserted his fingers or objects without my consent by using force, for example holding me down with their body weight, pinning my arms or having a weapon.
21) Even though it did not happen, a guy TRIED to have oral sex with me, or make me have oral sex with him without my consent by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
22) Even though it did not happen, a guy TRIED to have oral sex with me, or make me have oral sex with him without my consent by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
23) Even though it did not happen, a guy TRIED to have oral sex with me, or make me have oral sex with him without my consent by taking advantage of me when I was too drunk or out of it to stop what was happening.
24) Even though it did not happen, a guy TRIED to have oral sex with me, or make me have oral sex with him without my consent by threatening to physically harm me or someone close to me.

25) Even though it did not happen, a guy TRIED to have oral sex with me, or make me have oral sex with him without my consent by using force, for example holding me down with their body weight, pinning my arms or having a weapon.
26) Even though it did not happen, a guy TRIED to put his penis into my vagina, or tried to stick in fingers or objects without my consent by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
27) Even though it did not happen, a guy TRIED to put his penis into my vagina, or tried to stick in fingers or objects without my consent by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
28) Even though it did not happen, a guy TRIED to put his penis into my vagina, or tried to stick in fingers or objects without my consent by taking advantage of me when I was too drunk or out of it to stop what was happening.
29) Even though it did not happen, a guy TRIED to put his penis into my vagina, or tried to stick in fingers or objects without my consent by threatening to physically harm me or someone close to me.
30) Even though it did not happen, a guy TRIED to put his penis into my vagina, or tried to stick in fingers or objects without my consent by using force, for example holding me down with their body weight, pinning my arms or having a weapon.
31) Even though it did not happen, a guy TRIED to put his penis into my butt or tried to stick in objects or fingers without my consent by telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.
32) Even though it did not happen, a guy TRIED to put his penis into my butt or tried to stick in objects or fingers without my consent by showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.
33) Even though it did not happen, a guy TRIED to put his penis into my butt or tried to stick in objects or fingers without my consent by taking advantage of me when I was too drunk or out of it to stop what was happening.
34) Even though it did not happen, a guy TRIED to put his penis into my butt or tried to stick in objects or fingers without my consent by threatening to physically harm me or someone close to me.
35) Even though it did not happen, a guy TRIED to put his penis into my butt or tried to stick in objects or fingers without my consent by using force, for example holding me down with their body weight, pinning my arms or having a weapon.

PHYSICAL VIOLENCE VICTIMIZATION

We now have some questions about conflict in relationships. No matter how well two people get along, there are times when they disagree, get annoyed with the other person, 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. People also have many different ways of trying to settle their differences. This is a list of things that might have happened when you had differences. Like before, someone you liked and who liked you back would include relationships such as a boyfriend, someone you were dating, or someone you were "seeing" or "hanging out with" in a romantic way. Please check the box to show how many times someone used the following methods during a disagreement or fight with you:

0 = Never, 1 = Once, 2 = Twice, 3 = 3 or more times

How many times did this happen with someone you liked and who liked you back (i.e., a boyfriend or someone you were "seeing") when you were between the ages of 14 and 18?

1) Threatened to hit or throw something at you.
2) Threw or smashed or hit or kicked something.
3) Threw something at you.
4) Pushed, grabbed or shoved you.
5) Slapped you.
6) Kicked, bit, or hit you with a fist.
7) Hit or tried to hit you with something.
8) Beat you up.
9) Choked you.
10) Threatened you with a knife or gun.
11) Used a knife or fired a gun.

INVESTMENT

We all feel differently about boyfriends and relationships we have had. The following questions ask about your feelings about your boyfriend and relationship at the time you experienced the incident. Please consider how you felt immediately before this incident. Although feelings can change over time, please think back to how you felt at that time.

1 = Disagree completely, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

1) At that time, I felt I had put a great deal into our relationship that I would have lost if the relationship ended.
2) At that time, I felt many aspects of my life had become linked to my boyfriend (such as recreational activities, etc.) and I would have lost all of this if we broke up.
3) At that time, I felt very involved in our relationship – like I had put a great deal into it.
4) At that time, my relationships with friends and family members would have been complicated if my boyfriend and I broke up (e.g., my boyfriend was friends with people I cared about).
5) At that time, compared to other people I knew, I had invested a great deal in my relationship with my boyfriend.

SATISFACTION

Please consider how satisfied with your relationship to your boyfriend at the time. Again, think back to how you felt immediately before the incident occurred.

1 = Disagree completely, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

1) At that time, I felt satisfied with our relationship.
2) At that time, my relationship was much better than others' relationships.
3) At that time, my relationship was close to ideal.
4) At that time, our relationship made me very happy.
5) At that time, our relationship did a good job of fulfilling my needs for intimacy, companionship, etc.

QUALITY OF PERCEIVED ALTERNATIVES

It is common for people to think that they would be happier in different relationships or being apart from their boyfriend. Please consider how much fulfillment you thought you could experience in alternative situations at the time. Again, think back to how you felt immediately before the incident occurred.

1 = Disagree completely, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

1) At that time, the people other than my boyfriend with whom I might have become involved were very appealing.
2) At that time, my alternatives to our relationship were close to ideal (such as dating another, spending time with friends or on my own, etc.).
3) At that time, I felt that if I wasn't dating my boyfriend, I would do fine – I would have found another appealing person to date.
4) At that time, my alternatives were attractive to me (such as dating another, spending time with friends or on my own, etc.).
5) At that time, I felt my needs for intimacy, companionship, etc., could have easily been fulfilled in an alternative relationship.

COMMITMENT

1 = Disagree completely, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

1) At that time, I wanted our relationship to last for a very long time.
2) At that time, I was committed to maintaining my relationship with my boyfriend.
3) At that time, I would not have felt very upset if our relationship were to end. (R)
4) At that time, I felt very attached to our relationship – very strongly linked to my boyfriend.
5) At that time, I wanted our relationship to last forever.
6) At that time, I was oriented toward the long-term future of my relationship (for example, I imagined being with this boyfriend in the future).

THREAT TO FUTURE INTIMACY

Please indicate the extent to which each important goal or desire was involved or threatened in the incident. For example, if you felt that the incident threatened your self-esteem, "losing your self-esteem" would apply to the incident. Please think back to how you felt and thought right after the incident.

1 = Does not apply, 2 = Applies a little, 3 = Somewhat applies, 4 = Applies quite a bit, 5 = Applies a great deal

1) Ability to have a loving relationship in the future.

PERCEIVED PROVOCATION

We now have some questions about your behavior and your boyfriend's behavior during the incident and leading up the incident. Please answer these questions as honestly and openly as possible. To what extent did you or your boyfriend engage in the following behaviors either before the incident occurred or during the incident?

1 = Not at all true, 2 = A little true, 3 = Somewhat true, 4 = Quite a bit true, 5 = Very much true

1) I hit my boyfriend.
2) I swore at my boyfriend.
3) I argued with my boyfriend.
4) I cheated on my boyfriend.
5) I flirted with another boy.
6) I tried to break up with my boyfriend.
7) I "led him on" sexually (for example, doing some sexual things but refusing to do anything more).
8) I annoyed or pestered him.
9) I was hanging out with another boy.
10) I went to a party or some other social event without him.
11) I was ignoring him.
12) I refused to do something that he asked me to do.
13) I disagreed with him on an issue that was important to him.
14) I embarrassed him in front of his peers.
15) I brought up an issue that he didn't want to talk about.

VICTIM'S INTOXICATION

We would like to know what happened during the incident. Remember, we would like to know about when someone you liked and who liked you back (i.e., your boyfriend) (insert tactic) when you were (insert age). Like before, we refer to the individual who you liked and who liked you back as your boyfriend, even if it was not "official". Please think back to what happened at this time.

1 = Not at all intoxicated, 2 = A little, 3 = Somewhat, 4 = Quite a bit, 5 = Very intoxicated

1) How intoxicated were you at the time of the incident?

PARTNER'S INTOXICATION

1 = Not at all intoxicated, 2 = A little, 3 = Somewhat, 4 = Quite a bit, 5 = Very intoxicated

1) How intoxicated was he at the time of the incident?

PERCEPTIONS OF ALTERABILITY

We now have questions about how you felt immediately after the incident occurred. Although our thoughts about why certain things happen can change over time, we want you to think back to how you felt and thought right after the incident.

1 = Not at all true, 2 = A little true, 3 = Somewhat true, 4 = Quite a bit true, 5 = Very much true

1) The situation could have been changed.
2) The incident could have turned out differently.
3) The incident was bound to happen.

4) The things that led to this incident could have been changed.
5) If I had acted differently, this would not have happened.
6) The incident happened because of things we had control over.
7) There's nothing that could have been done to avoid the incident.
8) I could have prevented the incident from happening.

CONTROL OVER FUTURE INTIMACY

Right after the incident,…

1 = Completely disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Completely agree

1) I knew I had control over sharing my most intimate thoughts and feelings with a romantic partner in the future.
2) I knew I had control over dating those who make my life more comfortable and stable in the future.
3) I knew I had control over finding love.
4) I knew I had control over dating someone I consider my best friend.
5) I knew I had control over dating someone I could count on.
6) I knew I had control over having an emotionally intimate relationship in the future.
7) I knew I had control over having good future relationships.
8) I knew I had control over having a fulfilling relationship.

ROMANTIC ATTACHMENT

The following questions concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just what is happening in a current relationship. Please respond to each statement by indicating how much you agree or disagree with it.

1 = Disagree strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree Strongly

ANXIOUS ATTACHMENT

1) I worry about being abandoned.
2) I worry a lot about my relationships.
3) I worry that romantic partners won't care about me as much as I care about them.
4) I worry a fair amount about losing my partner.
5) I often wish that my partner's feelings for me were as strong as my feelings for him.
6) I often want to merge completely with romantic partners, and this sometimes scares them away.
7) I worry about being alone.
8) My desire to be very close sometimes scares people away.
9) I need a lot of reassurance that I am loved by my partner.
10) Sometimes I feel that I force my partners to show more feeling, more commitment.
11) I do not often worry about being abandoned.
12) If I can't get my partner to show interest in me, I get upset or angry.
13) I find that my partner(s) don't want to get as close as I would like.
14) When I am not involved in a relationship, I feel somewhat anxious and insecure.
15) I get frustrated when my partner is not around as much as I would like.
16) I get frustrated if romantic partners are not available when I need them.

17) When romantic partners disapprove of me, I feel really bad about myself.
18) I resent it when my partner spends time away from me.

AVOIDANT ATTACHMENT

1) I prefer not to show a partner how I feel deep down.
2) I am very comfortable being close to romantic partners.
3) Just when my partner starts to get close to me I find myself pulling away.
4) I get uncomfortable when a romantic partner wants to be very close.
5) I don't feel comfortable opening up to romantic partners.
6) I want to get close to my partner, but I keep pulling back.
7) I am nervous when partners get too close to me.
8) I feel comfortable sharing my private thoughts and feelings with my partner.
9) I try to avoid getting too close to my partner.
10) I find it relatively easy to get close to my partner.
11) I find it difficult to allow myself to depend on romantic partners.
12) I prefer not to be too close to romantic partners.
13) I tell my partner just about everything.
14) I usually discuss my problems and concerns with my partner.
15) I feel comfortable depending on romantic partners.
16) I don't mind asking romantic partners for comfort, advice or help.
17) It helps to turn to my romantic partner in times of need.
18) I turn to my partner for many things, including comfort and reassurance.

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ABSTRACT

ADOLESCENT DATING VIOLENCE AND ROMANTIC RELATIONSHIP ATTACHMENT IN YOUNG ADULTHOOD: THE EFFECTS OF RELATIONSHIP COMMITMENT AND PERCEPTIONS OF ALTERABILITY

by

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Romantic relationships are crucial to adolescents' development. These relationships fulfill numerous goals such as independence and intimacy (Bouchey & Furman, 2003; Sanderson & Cantor, 1995; Zimmer-Gembeck & Petherick, 2006). Because these relationships determine adolescents' successful attainment of important developmental objectives, negative relationships or experiences may impact later behavior, attitudes, beliefs and expectations (Connolly, Furman, & Konarski, 2000; Crockett & Crouter, 1995; Deal & Wampler, 1986; Furman, 2002; Magdol, Moffitt, Caspi, & Silva, 1998). Physical and sexual violence within adolescent romantic relationships is quite common; studies suggest that up to half of all girls have experienced dating violence (Arriaga & Foshee, 2004; Giordano et al., 2010; Halpern et al., 2001; Jackson, Cram & Seymour, 2000; Munoz-Rivas, Grana, O'Leary & Gonzalez, 2009; Temple & Freeman, 2011; Tjaden & Thoennes, 2000; Yan et al., 2010; Young, Grey & Boyd, 2009). Appraisal of an adolescent dating violence incident as it relates to general goals of intimacy attainment may impact working models of romantic relationships, specifically

being associated with insecure attachment orientations in adulthood. The present study sought to explore the relationship between commitment to an adolescent relationship in which violence occurred and perceived alterability of that incident on insecure romantic attachment as mediated by appraisals of threat to and control over future intimacy goals immediately after the event. Participants were 209 women who experienced an incident of physical or sexual violence perpetrated by a romantic partner when they were between the ages of 14 and 18. They completed an online survey. Three new measures were created to assess perceived provocation of the partner during the incident, perceived alterability of the incident and appraisal of control over future intimacy immediately after the incident happened. Results showed that threat and control appraisals were related to insecure romantic attachment in adulthood. However, commitment to the relationship and perceptions of alterability of the incident were not related to appraisals. Suggestions for future research and practical implications are discussed.

AUTOBIOGRAPHICAL STATEMENT

Jennifer Pierce earned her Bachelor of Arts in Psychology from University of Michigan – Dearborn. She is currently a doctoral student majoring in Social/Health Psychology at Wayne State University. Her research interests include understanding the predictors, correlates and consequences of sexual assault and dating violence perpetration and victimization; risk, resilience and health; and integrating biological measurement into the study of social behavior.