From What They See, to What They Think, to What They Do: How Exposure to Interparental Violence Leads to Dating Violence, Through Implicit and Explicit Attitudes

by

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ABSTRACT

FROM WHAT THEY SEE, TO WHAT THEY THINK, TO WHAT THEY DO: HOW EXPOSURE TO INTERPARENTAL VIOLENCE LEADS TO DATING VIOLENCE, THROUGH IMPLICIT AND EXPLICIT ATTITUDES

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Previous research has revealed that children who are exposed to interparental violence are at an increased risk of involvement in dating violence later in life, a relationship that has been found to be mediated by attitudes toward violence. However, such research has focused solely on explicit attitudes, and has not taken into consideration the role of implicit attitudes. The current study sought to fill this gap in the literature by exploring the potential mediating role of both explicit and implicit attitudes in the relationship between interparental violence and dating violence among a young adult sample. Participants were asked to complete self-report measures regarding their exposure to interparental violence, dating violence involvement and explicit attitudes towards violence, as well as two measures of implicit attitudes. The results revealed that for females, explicit, but not implicit, attitudes mediated the relationship between interparental violence and dating violence. However for males, both implicit and explicit attitudes were found to mediate the relationship between interparental violence and dating violence, suggesting that implicit attitudes are an important, though under-researched, predictor of dating violence. The current findings have implications for clarifying the importance of implicit attitudes in theories of the intergenerational transmission of violence, as well as for intervention programs targeting dating violence attitudes and behaviours.
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Introduction

It has been said that the experiences we have as children can last a lifetime. Perhaps one of the most formative examples of this is in the quality of relationships that are developed throughout one’s life, and the behaviours, values and attitudes that are inherent in those relationships. Experiences within an individual’s family in childhood have been shown to influence their experiences in romantic relationships later in life (Ehrensaft et al., 2003; Linder & Collins, 2005; Stith et al., 2000). An unfortunate consequence of such an influence is that children who have grown up exposed to interparental violence are at an increased risk of committing acts of violence towards their romantic partners later in life (Hare, Miga & Allen, 2009; Ireland & Smith, 2009; Kwong, Bartholomew, Henderson & Trinke, 2003; Rosen, Bartle-Haring & Stith, 2001; Tschann et al., 2009). Although dating violence (i.e., actual or threatened violence that occurs in the context of a dating relationship) is of particular interest in the current study, the same trend has been shown to occur within the broader context of intimate partner violence (i.e., actual or threatened violence within current and previous dating and spousal romantic relationships, as well as with other intimate partners; Statistics Canada, 2012). One logical accounting for this increased risk is that children exposed to interparental violence develop accepting explicit attitudes (i.e., conscious beliefs that can guide decisions and behaviours) towards violence, which contributes to their involvement in dating violence later in life (Carr & VanDeusen, 2002; Clarey, Hokoda & Ulloa, 2010; Foshee, et al., 2008; Kinsfogel & Grych, 2004; Lichter & McCloskey, 2004). However, further research is required in order to clarify the potential mediating role that attitudes play in this relationship. The current study helps fill this gap, and also contributes to
the literature by examining the less researched role of implicit attitudes (i.e., unacknowledged attitudes external to awareness that can influence decisions and behaviour) in relation to interparental violence and dating violence. Implicit attitudes towards violence may also be influenced by exposure to interparental violence and be a contributing factor to dating violence behaviour, and the relationship between implicit attitudes and these variables has not previously been explored. The current study is the first to examine how the relationship between interparental violence and dating violence perpetration is mediated by explicit attitudes as well as implicit attitudes towards violence. The relative, and combined, ability of these two types of attitudes to predict dating violence perpetration among young adult males and females is examined in this research.

**Exposure to Inteparental Violence**

It is widely acknowledged that being a recipient of direct abuse at the hands of a mother or father is associated with a multitude of negative outcomes. However, also warranting consideration is the detrimental effect of exposure to aggressive and violent behaviour that occurs between parents. Exposure to interparental violence encompasses hearing or direct witnessing of aggression or abuse by a mother or father towards the other parent, as well as experiencing the aftermath of such conflict (Øverlien, 2009). Although this form of maltreatment does not leave visible scars or inflict physical damage to the child, exposure to aggression, abuse and violence (three terms which tend to be used interchangeably in the dating violence literature; Jackson, 1999) between parents has been found to have a detrimental effect on children’s psychological, emotional, behavioural and social well-being (Blumenthal, Neemann & Murphy, 1998; Fantuzzo et al., 1991; Forsstrom-Cohen & Rosenbaum, 1985; Henning, Leitenberg, Coffey, Turner & Bennett, 1996; Kitzmann,
Gaylord, Holt & Kenny, 2003), as well as their future relationships (Chapple, 2003; Foshee, Bauman & Linder, 1999). The potential damage to children exposed to interparental violence is particularly concerning considering that the proportion of children who are exposed to aggressive and violent behaviour between their parents, either directly by observing such acts, or indirectly by hearing or seeing the after-effects of violent behaviour, is surprisingly high. Approximately 41% of American youths observe violence in their homes (Kilpatrick et al., 2000), and as many as 3.3 to 10 million children are exposed to interparental violence each year (Stone & Fialk, 1997). As well, adult retrospective reports reveal that 20-40% of adults and college students are exposed to domestic violence during their childhood or adolescence (Blumenthal et al., 1998; Henning et al., 1996; Maker, Kemmelmeiere & Peterson, 1998). Not only is the rate of exposure to interparental violence remarkably high, but according to a recent report by Statistics Canada (2010), there also continues to be a significant increase in the number of children who are exposed to interparental violence.

There are various negative outcomes associated with exposure to interparental violence. A meta-analytic review of 118 studies examining the psychosocial outcomes of children exposed to domestic violence revealed that approximately 63% of children who have been exposed to interparental violence have poorer outcomes than the average child who has not been subjected to such familial conflict (Kitzmann, Gaylord, Holt & Kenny, 2003). Such outcomes include externalizing and internalizing problems, higher negative affect, and more negative cognitions in response to inter-adult conflict (Kitzmann et al., 2003). The results of this review also indicated that children who are exposed to interparental violence have similar levels of adjustment difficulties as children who were physically abused, and fair about the
same as children who have experienced both physical abuse and exposure to interparental violence (Kitzmann et al., 2003).

Exposure to interparental violence has also been shown to affect reactions to aggressive or violent situations. According to a meta-analytic review of child exposure to interparental violence, children who were exposed to such violence showed higher negative affect and more negative cognitions in response to simulated or hypothetical interadult conflict, and were more likely to use aggressions themselves in response to the conflict than children who were not exposed to interparental violence (Kitzmann et al., 2003). As such, it is not surprising that exposure to interparental violence may be considered a salient risk factor in the development of abusive tendencies in an individual’s own interpersonal relationships.

Children who have been exposed to interparental violence have been shown to be at an increased risk of involvement, as a perpetrator, victim, or both, in violent dating relationships in adolescence and adulthood, followed by marital violence later in life (Stith, et al., 2000; Ireland & Smith, 2009; Kwong et al., 2003; Tschann et al., 2009). In fact, witnessing violence in the family of origin has been identified as the most consistently reported background factor among male perpetrators of intimate partner abuse (Carr & Vandeusen, 2002). Both males and females who have been exposed to aggressive behaviour between their parents are at an increased risk of perpetrating violence in their own romantic relationships (Arriaga & Foshee, 2004; Chapple, 2003; Foshee et al., 1999).

Examining the relationship between exposure to interparental violence and violence in romantic relationships during adolescence and early adulthood is of particular importance, as this time period is one in which relationship patterns and values may be established, forming the basis for future relationships, and thereby providing an important link in the
intergenerational transmission of violence (Makepeace, 1981). As such, dating violence in adolescence and young adulthood not only contributes to physical injury and emotional distress for the individual and their dating partner, but also potentially contributes to such difficulties in the lives of subsequent generations (e.g., future children and grandchildren). Enhancing the understanding of the contributing role of interparental violence in dating violence behaviour among young adults may assist with the development of effective prevention and early intervention programs designed to combat dating violence and break this cycle of violence.

**Exposure to Interparental Violence and Acceptance of Violence**

Although the exact figures vary from study to study, it has been shown that approximately half of adolescents who have been exposed to interparental violence later become perpetrators (49%) or victims (55%) of dating violence (O’Keefe, 1998). In interpreting the relationship between exposure to interparental violence and dating violence, many variables need to be taken into consideration. For example, the gender of the parent perpetrating abuse towards their spouse, the gender of the child witnessing the abuse, and the form of abuse observed as well as used in dating relationships will be examined in the current study, as each of these variables has previously been found to have a significant impact on the relationship between interparental violence and dating violence (Black, Sussman & Unger, 2010; Foshee, Bauman & Linder, 1999; O’Keefe, 1998; Riggs & O’Leary, 1996; Stith et al., 2000; Wolf & Foshee, 2003).

Another important factor in the relationship between exposure to interparental violence and later involvement in violent relationships is an individual’s attitude towards violence in intimate relationships (Clarey et al., 2010; Kinsfogel & Grych, 2004; O’Keefe, 1998; Reitzel-
Jaffe & Wolfe, 2001). Children who are raised thinking that it is allowable for an individual to be abusive towards their partner are undoubtedly more likely to grow up to think that abusive behaviour in their own romantic relationships is acceptable as well. Attitude towards violent behaviour, and how this attitude is shaped by exposure to interparental violence, as well as how it may predict dating violence perpetration, is the key variable of interest in the current research. For the purpose of this research, attitudes can be defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 1993, p. 1).

The transmission of violent behaviour from one generation to the next has been explained by a number of different theories, with the focus typically on how parents’ violent behaviour towards children leads to violent behaviour perpetrated by those children later in life. Such theories include: attachment theory (Egeland, Jacobvitz, & Sroufe, 1988), biological or temperament theories of aggression (Muller, Hunter, & Stollak, 1995), and ecological or multi-factor approaches (Belsky, 1980). However, one theory in particular has been widely considered to provide the most logical, and popular, explanation of how violence between parents may play an important role in children’s later use of violence in their own relationships – social learning theory. Unlike other theories used to explain the intergenerational transmission of violence, social learning theory takes into account the important role of attitudes in the transmission of violent behaviour.

According to social learning theory, children learn what behaviours are appropriate and acceptable responses to various situations by copying the behaviour that they have seen successfully used or rewarded (Bandura, 1977). Observations of how parents and other role models behave in their intimate relationships serve as the foundation for their own
understanding of appropriate behaviours in such relationships. Thus, children who have grown up witnessing their parents use violence as a response to stress or a means of conflict resolution are at an increased risk of responding in a similar fashion, and imitating aggressive and violent behaviours (Bandura, 1973).

Not only does exposure to violence in the family teach children aggressive behaviours and violent techniques, it also teaches acceptance, tolerance and approval of violent behaviours (Gelles, 1972). Thus, children who have observed their parents respond to stress or resolve conflicts by hitting or yelling at one another may grow up to accept as well as imitate such behaviour, behaviour that may then be maintained through positive reinforcement (e.g., getting their way in a relationship dispute; Bandura, 1973).

According to social learning theory, the specific parent that is observed is an important consideration, as this theory predicts that modelling effects are more significant when children observe a parent of the same gender as themselves (Jackson, 1999). This theory lends to the prediction that when children who have been exposed to interparental violence, particularly violence committed by a parent of the same gender as themselves, enter into romantic relationships, and inevitably face some degree of conflict within these relationships, they are more likely to imitate abusive behaviour than peers who have not been exposed to violence in their homes.

Children who grow up watching their role models engage in aggressive and violent behaviour may develop attitudes towards violence that differ from their peers who have not been exposed to such conflict. A number of studies have found this to be the case, in that individuals who have been exposed to interparental violence as children self-report having more accepting attitudes regarding intimate partner violence than their peers (Carr &
Explicit Attitudes Regarding Dating Violence

The relationship between exposure to interparental violence and acceptance of violence is particularly concerning considering that attitude towards intimate partner violence has been identified as a predictor of dating violence perpetration (Carr & VanDeusen, 2002; Clarey et al., 2010; Foo & Margolin, 1995; Foshee et al., 2008; Josephson & Proulx, 2008; Kinsfogel & Grych, 2004; Lichter & McCloskey, 2004; O’Keefe, 1997; Reitzel-Jaffe & Wolfe, 2001; Riggs & O’Leary, 1996; Sears, Byers & Price, 2007). As discussed above, attitude towards dating violence has been linked to both exposure to interparental violence and dating violence behaviour, two variables that have also been linked to one another. A few studies have tried to identify the nature of the relationship between these three important variables by exploring the mediating role of attitudes toward dating violence, with varying results (Clarey et al., 2010; Kinsfogel & Grych, 2004; O’Keefe, 1998; Reitzel-Jaffe & Wolfe, 2001).

Clarey and colleagues (2010) research with a general high school sample of Mexican males and females found that acceptance of dating violence mediates the relationship between exposure to interparental violence and dating violence perpetration. However, the role of gender was not examined, in terms of either parents or participants. In their research with a general sample of Canadian university students, Reitzel-Jaffe and Wolfe (2001) examined the relationship between family violence (child abuse and interparental violence), attitudes towards violence and dating violence perpetration among a sample of young men. Reitzel-Jaffe and Wolfe (2001) found that the association between family violence and relationship
abuse was mediated by attitudes towards violence and gender. Although mediation analyses with interparental violence in specific was not discussed, their model suggests that exposure to interparental violence may be associated with physical and emotional dating violence perpetration, a relationship which might be mediated by accepting attitudes towards dating violence (Reitzel-Jaffe & Wolfe, 2001). As well, a series of correlation analyses revealed that there was a significant positive relationship between physical, sexual and emotional abuse perpetration and father-perpetrated interparental violence, as well as a significant correlation between each form of abuse perpetration and mother-perpetrated interparental violence. Furthermore, father-perpetrated violence was significantly positively correlated with attitudes towards violence, but there was no significant relationship between mother-perpetrated interparental violence and attitudes.

Two studies that have examined the distinct effects of exposure to interparental violence and attitude on male and female participants have found significantly different results for each gender. In a study of dating violence among high school students who had been exposed to interparental violence, O’Keefe (1998) found that acceptance of violence mediated the relationship between exposure to interparental violence and dating violence perpetration for males, but not for females. However, interparental violence as perpetrated by mothers and fathers was not differentiated from one another in this study.

Kinsfogel and Grych’s (2004) study with a general sample of high school students revealed a similar pattern of results to O’Keefe’s (1998), in that males who were exposed to interparental violence were more likely to view aggression in dating relationships as acceptable, which predicted reports of dating violence perpetration. However, among females, exposure to interparental violence was not associated with dating violence perpetration and
attitude towards dating violence was not associated with exposure to interparental violence or
dating violence perpetration. As well, correlation analyses were used to examine the
relationships between dating violence perpetration, acceptance of dating violence in situations
of humiliation or self-defence, and perpetration of interparental abuse by mothers and fathers,
for each gender. The significant correlations for males revealed that both mother-perpetrated
and father-perpetrated interparental violence was associated with dating violence behaviour,
and that mother-perpetrated violence led to increased acceptance of dating violence as used in
self-defence as well as acceptance of dating violence following humiliation. However, father-
perpetrated interparental violence was not associated with attitudes towards dating violence.
The only significant correlation for female participants was that attitudes towards dating
violence following situations of humiliation was significantly correlated with dating violence
perpetration.

These studies reveal that while both exposure to interparental violence and attitudes
towards violence are important factors in predicting involvement in dating violence, there
exists some inconsistencies in the research to date, particularly in regard to the effects of
gender. For example, in Reitzel-Jaffe and Wolfe’s (2001) study with a male population,
attitudes towards violence were significantly positively correlated with father-perpetrated, but
not mother-perpetrated, interparental violence. In contrast, among Kinsfogel and Grych’s
(2004) male participants, father-perpetrated interparental violence was not associated with
attitudes towards dating violence, but a significant relationship existed between mother-
perpetrated violence and attitudes towards dating violence. It is clear that further research is
needed in order to clarify the exact relationship among these various variables and help
reconcile previous inconsistent findings.
Kinsfogel and Grych’s (2004) and O’Keefe’s (1998) significant findings for males, and not females, is in line with previous research indicating that exposure to interparental violence is a better predictor of dating violence for males than for females (DeMaris, 1987; Foo & Margolin, 1995; Gwartney-Gibbs, Stockard, & Brohmer, 1987; O’Keefe, 1997). Davies and Lindsay (2001) propose that this gender difference is due to differences in socialization for boys and girls, in that girls are taught to emphasize communal (relationship-focused) goals, while boys are socialized to emphasize agentic (individually-oriented) goals. As such, when exposed to interparental violence, girls may recognize the damage to the relationship that occurs, whereas boys may be most influenced by the effectiveness of abuse in achieving their own aims within the relationship (Davies & Lindsay, 2001).

An alternate explanation for this gender difference, rooted in social learning theory, is that males are more likely to be influenced by exposure to interparental violence than their female counterparts due to the costs and rewards involved. Based on the premise of social learning theory (Bandura, 1973), behaviours that are observed are accepted, imitated and maintained through positive reinforcement of that behaviour. For males, observing either their mother (Reitzel-Jaffe and Wolfe, 2001) or their father (Kinsfogel and Grych, 2004) engage in violent behaviour may lead males to accept and engage in violent behaviour, as they may be rewarded for this behaviour (e.g., settling a conflict) with little personal cost to themselves. In contrast, the positive reinforcement that is integral to social learning theory may be absent for females, as the cost of imitating their parents’ violent behaviours may outweigh the benefits.

More often than not, violence in intimate relationships is bi-directional or mutual, in that both partners in a relationship occupy the roles of perpetrator and victim (Gray & Foshee, 1997). Thus, as is the case for males, females who perpetrate violence in a relationship are
more likely to also become victims of violence. However, being a victim of dating violence is a qualitatively different experience for females and males, as victimization among females is associated with much more psychologically, physically, and economically damaging repercussions than among males (Straus, 2011). Thus, even if females may receive some positive reinforcement (e.g., winning an argument) from imitating the violent behaviours observed between their parents, the potential cost involved may negate the perceived reinforcement required by social learning theory for behaviours to be accepted and imitated.

The gender difference in the perpetration of dating violence can also be explained by feminist theory. According to a feminist perspective, violence between intimate partners is influenced by the sociocultural context in which relationships develop and violence occurs, and it is rooted in sexism and female inequality that exists in patriarchal societies, such as North America (DeKeseredy, 2011). From an early age, children are taught gender roles, which place boys in a position of power over girls, and which involve condoning violent behaviour by males while condemning such behaviour by girls (Dobash & Dobash, 1977). These socially defined gender roles, and the current patriarchal context of society, lead men to act violently towards their romantic partners, as they exert their power over women through force (Walker, 1984). Consistent with this, research has revealed that self-defence is a much more common motivator for the use of violence among women, than it is among men (29% vs. 17%; Kernsmith, 2005), and the use of violence as a means of self-defence is not examined separately in most analyses of intimate partner violence.

Despite the fact that the effect of interparental violence on dating violence is not necessarily as strong or consistent for females as for males, there have been a number of studies to date that have demonstrated that this relationship exists (Stith et al., 2000).
However, in order to fully understand this relationship, not only must the gender of the participants be taken into account, but the gender of the parent that is perpetrating the interparental violence must also be examined, a factor that is often not taken into consideration.

According to social learning theory, violent behaviours are more likely to be imitated when parents of the same gender engage in behaviours traditionally associated with their gender role (i.e., father as perpetrator and mother as victim; Bandura, 1977). In line with this, research has revealed that males and females may respond differently to violence they observe between parents, depending on the gender of the parent who perpetrated the violence. Stith and colleagues (2000) postulated that the findings from their meta-analysis, that exposure to interparental violence was more strongly associated with perpetrating spousal violence for males and with becoming a victim of spousal violence for females, may be explained by children modelling the behaviour of their parent that is the same gender as themselves. However, Stith and colleagues (2000) acknowledged that there was not enough evidence to substantiate this theory, as too few studies in their meta-analysis had examined such gender effects. As well, an examination of the studies that comprised the meta-analysis reveals that the vast majority of studies examined only father-perpetrated interparental violence, as many of the studies focused solely on husband-to-wife violence. Thus, the impact of being exposed to mother’s perpetration of interparental violence was not adequately considered or represented.

More recently, research has been conducted that explores the influence of exposure to mother-perpetrated, as well as father-perpetrated, interparental violence. The few studies that have examined the influence of parental gender have revealed the important influence of
mothers who perpetrate interparental violence. One recent study revealed that for men, exposure to father-to-mother violence was a significant risk factor for men's perpetration of physical aggression towards their dating partners, while for women, mother-to-father violence significantly increased their perpetration of physical dating violence (Milletich, Kelley, Doane & Pearson, 2010). The influence of mothers perpetration of interparental violence on females’ perpetration of dating violence was also demonstrated in research by Moretti, Obsuth, Odgers and Reebye (2006) and Holt and Gillespie (2008). This suggests that not only may social learning theory account for the originally examined role of males as perpetrators of partner violence, as demonstrated in Stith and colleagues’ (2000) research, but the more recently acknowledged role of mothers as perpetrators of violence may also lead to social learning which can contribute to daughters’ later involvement in perpetration of dating violence.

As such, females’ dating violence perpetration can be explained by social learning theory in two possible ways. Exposure to interparental violence is less likely to predict females involvement in dating violence than males involvement, because imitating such aggressive behaviours may be less reinforcing for females (e.g., may result in greater physical injury) than it would be for males. However, when females dating violence perpetration is predicted by exposure to interparental violence, it may also be accounted for by social learning theory, in that they may be imitating the aggressive behaviour they have witnessed their mothers carry out. Thus, the current study has sought to contribute to the understanding of the relationship between interparental violence, attitudes towards violence, and dating violence perpetration, by examining the relationship between these variables separately for females, as well as for males.

The current research contributes to the literature by examining the effects of parent and
participant gender, and the congruency between them, on the relationship between exposure to interparental violence and dating violence perpetration, as little research to date has examined the unique role of the perpetrating parent’s gender in this relationship, and how this may contribute to the disparate gender effects that have been documented (Kinsfogel & Grych, 2004; O’Keefe, 1998). It is important to note that gender is often referred to and represented in research on dating violence as a fixed binary (male/female), comprised of a set of relatively stable characteristics that people have; however, this simplified perspective does not take into consideration the complex contextual, systemic and constructivist perspectives on gender. While this limitation to the literature, and the current study, is acknowledged, a full examination of the conceptualization and categorization of gender is beyond the scope of the current study.

**Implicit Attitudes Regarding Dating Violence**

The current research also examines the relative contribution of implicit attitudes toward violence compared to explicit attitudes. To date, various studies have examined the relationship between violence acceptability and exposure to interparental violence, as well as between violence acceptability and dating violence involvement. These studies have focused almost exclusively on explicit attitudes towards dating violence, with self-report scales serving as the standard measurement tool. However, implicit attitudes are also an important, though under-researched, factor that may be linked to both exposure to interparental violence and dating violence behaviour.

**Implicit vs. Explicit Attitudes**

Implicit attitudes are those that are unacknowledged or external to an individual’s conscious awareness or attention, but which nonetheless influence behaviour, and therefore
are considered discrete from explicit attitudes. The lack of conscious awareness regarding implicit attitudes has been demonstrated to pertain to unawareness about the cause of attitudes (referred to as *source awareness*), the content of the attitude itself (*content awareness*), as well as the influence the attitude has on other psychological processes (*impact awareness*; Gawronski, Hoffman & Wilbur, 2006). The distinction between implicit and explicit attitudes has been explained by a number of dual-process theories (Chaiken & Trope, 1999). Smith and DeCoster (2000) compared the nine most prominent of these theories, identifying their similarities and discrepancies. Although each of these models of information processing are distinct in some ways (e.g., preferred terminology), the emphasis on the importance of cognitions (i.e., mental processes) in the formation of attitudes (i.e., expression of favor or disfavor) and the underlying processes that occur in the various dual-process theories are virtually the same. Each such model outlines a process that exists within conscious awareness, that occurs optionally when both capacity and motivation are present, that is structured by language and logic, and that may be learned through but a few experiences (Smith & DeCoster, 2000). The second process described by the model occurs automatically and exists outside conscious awareness, or preconsciously, with awareness only of the result of the processing rather than of the processing itself. This process is based largely on well-learned prior associations (Smith & DeCoster, 2000).

The Dual-Attitude model, proposed by Wilson, Lindsey and Schooler (2000), is one of the more recent and influential theoretical frameworks to date. This model is based on the assumption that implicit and explicit attitudes reflect distinct evaluation sources, and these two types of attitudes may have an effect on perception, judgement and behaviour concurrently, consecutively, or interactively (Wilson et al., 2000). According to this model,
implicit attitudes are evaluations that are activated automatically when people encounter an attitude object. Implicit attitudes influence implicit responses, or those responses that are spontaneous, uncontrollable, and that are not considered to be representative of their attitudes and thus one does not attempt to monitor or control (Wilson et al., 2000). In contrast, explicit attitudes are those that require more motivation and cognitive capacity to retrieve, and may be considered products of introspection. This model proposes that implicit and explicit attitudes towards the same attitude object can co-exist in memory, resulting in dual attitudes. When dual attitudes exist, the implicit attitude is activated automatically, while the explicit attitude requires attention, motivation and cognitive capacity in order to be retrieved from memory. As such, when people are lacking the capacity and motivation to retrieve the explicit attitude, implicit attitudes are reported. However, when such sufficient motivation and capacity does exist, explicit attitudes can override more automatic and habitual implicit attitudes, such that explicit attitudes are reported (Wilson et al., 2000).

The time, motivation, and cognitive capacity that are required to access explicit attitudes about dating violence may often be deficient in the context surrounding dating violence experiences, which often occurs “in the heat of the moment” (Foshee et al., 2008). As well, the strong emotions that often accompany such situations has been shown to interfere with cognitive processing, making it more difficult to access explicit attitudes, thus hindering the ability to evaluate potential consequences and reappraise the situation (Jouriles, McDonald, Mueller & Grych, 2012). As a result, individuals often engage in dating violence impulsively, influenced to a greater degree by their implicit attitudes towards dating violence than their explicit attitudes, which are more representative of conscious, deliberative, or reflective thought (Jouriles et al., 2012).
Another important distinction in understanding how each type of attitude may contribute to situations involving dating violence is their relative stability. Implicit attitudes are considered to be based on early social learning, and are relatively stable (Polashek, Bell, Calvert & Takarangi, 2010; Wilson et al., 2000). As such, implicit attitudes are considered to be particularly valuable and informative in predicting a range of behaviours, including behaviour in emotion-laden situations, such as those involving aggression and dating violence (Anderson & Bushman, 2002; Berkowitz, 2008). In contrast, explicit attitudes are largely based on newer learning and are more likely to be influenced by context (Polashek et al., 2010; Wilson et al., 2000). While attitudes do often shape behaviour, it is important to note that having accepting implicit attitudes towards violence does not always lead to violent behaviour, as there are a number of factors that influence the relationship between attitudes and behaviours (Fazio & Olson, 2007).

Due to the differences in stability, processes, monitoring, and information they are based upon, it is clear that implicit and explicit processes are distinct, and as such, the cognitions and attitudes that may be accessed by each process are not necessarily congruent. Although implicit and explicit attitudes can be considered to be distinct, the relative contribution of each to the prediction of dating violence behaviour has been largely unexamined. In order to obtain a clear, accurate, and comprehensive understanding of how attitudes are informed by exposure to interparental violence and how they are associated with dating violence behaviour, the current study examined both implicit and explicit attitudes towards violence, and determined the relative contribution of each.
**Implicit Attitudes Towards Violence: Research Findings**

To examine implicit attitudes, it is necessary to use measures that require quick, spontaneous responses that do not allow for deliberation. Such measures are believed to produce automatic, unmonitored implicit responses. In contrast, measures that provide the time, opportunity and motivation necessary to access explicit attitudes (as self-report measures typically do) may produce responses that involve introspection and the evaluation of potential consequences (e.g., violence leads to more problems in relationships etc.), and a response that is thoroughly evaluated (e.g., condemn violent behaviours).

To date, the research that has explored how implicit attitudes influence aggressive behaviour has been limited. However, when the role of implicit attitudes has been taken into account, such as by examining participants’ interpretations of ambiguous situation cues, it has been found that individuals who have greater implicit acceptance of violent behaviour are more likely to interpret ambiguous situations as aggressive (Anderson & Bushmann, 2002; Dodge & Crick, 1990; Jouriles et al., 2011).

One such study examined the relationship between general aggression in implicit attitudes and teen dating violence behaviour among male and female adolescents who had been remanded into the juvenile court system due to antisocial behaviour (Jouriles et al., 2011). Participants were asked to complete a questionnaire assessing their explicit attitudes towards dating violence, as well as a word-completion task that assessed their implicit attitudes towards general aggression. Dating violence perpetration was assessed at baseline, as well as during follow-up phone calls over the next three months. The results revealed that participants’ implicit attitudes towards general aggression were related to their dating violence perpetration both concurrently and prospectively, after explicit attitudes towards dating
violence were controlled for (Jouriles et al., 2011). Thus, Jouriles and colleagues (2011) research suggests that aggressive implicit attitudes may be an important causal factor in dating violence perpetration. The current study builds on Jouriles and colleagues’ (2011) findings by determining how implicit attitudes affect dating violence perpetration among a more representative population of young adults.

The distinction between implicit and explicit attitudes towards violence has also been examined using the most commonly used measure of implicit attitudinal strength – the Implicit Association Test (IAT; Greenwald, McGhee & Schwartz, 1998). The IAT assesses the strength of association between various concepts by observing the relative response times in a categorization task administered via computer. Participants are asked to categorize words into two contrasting target categories (e.g., violent vs. peaceful) and two contrasting attribute categories (e.g., good vs. bad) using one response key for one target and attribute category, and the other response key for the other categories. The assumption of the IAT is that participants take less time to respond when the concept and attribute that share a response key are strongly associated (e.g., violent and bad) than when they are weakly associated (e.g., peaceful and bad).

The IAT has been used to assess a variety of attitudinal constructs among clinical and non-clinical samples (Greenwald, Poehlman, Uhlman & Banaji, 2009). A review of 122 studies using the IAT revealed that both the IAT and self-report measures provide incremental validity, in that they each account for criterion variance above and beyond that predicted by the other type of measure. The review also revealed that the IAT is particularly effective for sensitive topics, where self-report measures predictive validity can be compromised by participants’ social desirability biases (Greenwald et al., 2009).
Robertson and Murachver (2007) used the IAT in their study comparing correlates of partner violence among 39 incarcerated men and women from New Zealand, and a comparison sample of 133 community adults. Robertson and Murachver (2007) found that the explicit attitudes and beliefs associated with general violence were similar across samples, gender, form of abuse (i.e., physical or psychological), and form of involvement in partner violence (i.e., victim or perpetrator). However, the incarcerated sample was found to have more tolerant implicit attitudes towards violence in general. As well, victims of physical violence were found to have more accepting implicit (but not explicit) attitudes towards violence; however, perpetration was not controlled for, therefore the victims of physical violence were likely also perpetrators of violence, as relationship violence is typically bi-directional (Struas, 2011). The finding that implicit, but not explicit, measures of attitude towards violence showed greater acceptance among the incarcerated sample demonstrates that measures of implicit attitudes towards violence provide a valuable, distinct contribution to the understanding of involvement in aggressive behaviours.

Recently, Eckhardt, Samper, Suhr and Holtzworth-Munroe (2012) used the IAT in their examination of explicit attitudes towards partner violence and implicit general attitudes towards violence among a sample of 50 men enrolled in an intimate partner violence treatment group and a control sample of 40 nonviolent men. Eckhardt and colleagues (2012) found no significant differences between violent and nonviolent participants in regard to explicit attitudes towards relationship violence. However, a significant difference between groups was found in regard to implicit attitudes, in that men in the intimate partner treatment group responded faster when violence-related words were paired with words having a positive evaluative valence, indicating more accepting attitudes toward violence in general. Explicit
attitudes towards relationship violence did not differ between groups, and implicit and explicit measures of attitude towards violence were not associated with one another.

The recent research by Eckhardt and colleagues (2012), Robertson and Murachver (2007) and Jouriles and colleagues (2011) highlights the importance of including measures of both implicit and explicit attitudes towards violence when exploring how attitudes may mediate the relationship between exposure to interparental violence and dating violence behaviour. This study is the first to examine the relationship between exposure to interparental violence and implicit attitudes towards violence, and it is unique in its exploration of the potential mediating role of implicit attitudes on the relationship between exposure to interparental violence and dating violence behaviour. As well, the current research is the first known study to examine these relationships among a university population.

The Current Study

The current study examines how exposure to interparental violence contributes to dating violence perpetration, as mediated by attitudes towards violence. A select few studies have examined the mediating role that explicit attitudes may play on the relationship between exposure to interparental violence and dating violence perpetration (Clarey et al., 2010; Kinsfogel & Grych, 2004; O’Keefe, 1998; Reitzel-Jaffe & Wolfe, 2001), however, no known study has explored this relationship in regard to implicit attitudes towards violence. The current study elucidates the relationship between exposure to interparental violence and implicit and explicit attitudes towards dating violence, as well as examines the relative and combined ability of implicit and explicit attitudes to predict dating violence perpetration.
among a sample of young adults. Three other factors that are taken into consideration in this study are specificity of attitudes, form of abuse and gender.

**Specificity of Attitudes**

Past research that has examined the relative predictive ability of implicit and explicit attitudes towards dating violence have employed measures of explicit specific attitudes towards violence against a romantic partner, alongside measures of implicit attitudes towards violence in general (e.g., Eckhardt et al., 2012; Jouriles et al., 2011; Robertson & Murachver, 2007). Therefore, it is possible that the discrepancies between implicit and explicit measures that have previously been revealed may be accounted for, at least in part, by the specificity of the construct examined. The current study addresses this limitation, by including an explicit measure that taps into the broader construct of attitude towards violence more generally (i.e., beliefs about physical and psychological aggression to other people in general), alongside the more commonly used measures of specific explicit attitudes towards violence in romantic relationships.

As well, in addition to employing a measure of implicit attitudes towards violence in general, an additional implicit task, created specifically for this study, is used to measure specific implicit attitudes towards violence in a relationship. This is the first known study to employ an implicit measure designed to tap into specific implicit attitudes regarding dating violence. As well, this is the first study to consider and examine the relative relationships between general and specific implicit and explicit attitudes towards violence and dating violence.
Forms of Dating Violence

The majority of studies examining the effect of interparental violence on dating violence have focused primarily on physical violence, with mixed findings produced when other forms of dating violence are taken into consideration. A meta-analytic review of studies examining children’s exposure to domestic violence revealed that children who witnessed physical violence between their parents had worse psychosocial outcomes than children who witnessed other forms of destructive, though not physically violent, interparental conflict, such as verbal aggression (Kitzmann et al., 2003). As such, the primary focus of the current study was on physical abuse as perpetrated by participants and their parents, and physical abuse was the focus of mediation analyses involving attitudes towards violence. However, a study conducted by Tschann and colleagues (2009) revealed that even non-violent parental conflict can contribute to dating violence. Specifically, adolescents who had parents that were physically violent, verbally aggressive, or had poor conflict resolution skills were more likely to become involved in verbal and physical dating violence with a romantic partner as both a perpetrator and a victim than adolescents who were not exposed to any conflict between their parents (Tschann et al., 2009). Thus, the current study also explored psychological aggression that occurs between parents, and how this form of abuse may relate to violence in dating relationships. Although definitional and conceptual issues are commonly referred to in discussions of psychological abuse and aggression (Follingstad, 2009), in this study psychological aggression was examined and conceptualized based on the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy & Sugarman, 1996). Although psychological aggression was initially considered to consist solely of verbally aggressive acts in the original Conflict Tactics Scale, additional non-verbal items were added when the psychological
aggression scale replaced the verbal aggression scale for the Revised version of this scale, as nonverbal acts (e.g., stomped out of the room; destroyed something of partners) were recognized to constitute psychological aggression, alongside verbally aggressive acts (e.g., insulted or swore at partner; called partner fat or ugly).

Exploring alternate forms of dating violence may be particularly informative given that previous research has revealed that similar forms of parent and emerging adult violence are more strongly correlated than different forms of violence (e.g., interparental physical violence is more strongly correlated with the use of physical violence in dating relationships than with psychological abuse; Black et al., 2010). As such, the relationship between forms of violence between parents and the forms of violence present in dating relationships were explored.

**Gender Differences**

Another important factor that is examined in the current study is gender. While certain studies have documented similar findings for males and females in regards to exposure to interparental violence, attitudes towards violence, and dating violence behaviour, many studies have highlighted the important role that gender can play. For example, males and females have been shown to differ in regards to dating violence behaviour (Foo & Margolin, 1995; Gover, Kaukinen & Fox, 2008; Spinney, Goforth & Cohn, 2007), dating violence attitudes (Ponce, Williams & Allen 2004; Price et al., 1999; Simon et al., 2001), and the effect of exposure to interparental violence on dating violence perpetration and victimization (Foshee, Bauman & Linder, 1999; O’Keefe, 1998; Riggs & O’Leary, 1996; Stith et al., 2000; Wolf & Foshee, 2003).

Previous research has indicated that males and females differ in regards to their attitudes towards dating violence, with males generally being more accepting of dating violence than
females in regards to sexual, physical, and psychological abuse (Kaura & Lohman, 2009; Ponce et al., 2004; Price et al., 1999; Simon et al., 2001). As well, a discrepancy has emerged in regards to males and females dating violence behaviour. A review of 118 studies examining the prevalence of dating violence among adolescents and college students revealed that rates of perpetration for females is significantly higher than the rates of perpetration for males (Spinney et al., 2007). The current study examines the prevalence of dating violence perpetration among males and females, and the relationship between attitudes and dating violence perpetration according to gender. As well, this study builds on past research that has revealed that the relationship between interparental violence and dating violence is influenced by the gender of participants as well as their parents. For the current study, it was important to consider not only the role that participants’ gender may play, but also the gender of the parent that has perpetrated interparental violence, and whether such factors might influence dating violence perpetration.

**Hypotheses**

It was predicted that there would be a significant relationship between exposure to physical interparental violence and physical dating violence perpetration.

**H1:** Exposure to physical interparental violence will be associated with physical dating violence perpetration.

It was also hypothesized that individuals who were more accepting of violence in terms of their explicit or implicit attitudes would be more likely to perpetrate dating violence than individuals who had less accepting attitudes.

**H2:** Explicit and implicit attitudes towards violence will be associated with dating violence perpetration.
It was expected that exposure to interparental violence would be associated with both explicit and implicit attitudes towards violence, in that individuals who had been exposed to physical abuse between their parents would be more accepting of violent behaviour than individuals who had not been exposed to such violence between their parents.

**H3: Exposure to interparental violence will be associated with more accepting explicit and implicit attitudes towards violence.**

It was expected that implicit and explicit attitudes towards violence would be linked to exposure to interparental violence, as well as dating violence perpetration, such that explicit and implicit attitudes would each mediate the relationship between exposure to interparental violence and dating violence perpetration.

**H4: Explicit and implicit attitudes towards violence will mediate the relationship between exposure to interparental violence and dating violence perpetration.**

Both explicit and implicit attitudes were predicted to mediate the relationship between exposure to interparental violence and dating violence perpetration, as well, it was expected that the mediating role of implicit attitudes would be unique, in that it would account for variance in the relationship between these variables even once explicit attitudes towards dating violence was controlled for.

**H5: Implicit attitudes towards dating violence will account for variance in the relationship between exposure to interparental violence and dating violence above and beyond that accounted for by explicit attitudes towards dating violence.**

Although physical violence was of primary interest in this study, psychological dating violence was also explored, with the prediction that a relationship would exist between the forms of violent behaviour used by their parents and the forms of violent behaviour that
participants had perpetrated (e.g., individuals exposed solely to psychological abuse would be at greater risk of having perpetrated psychological abuse than physical abuse within a dating relationship).

**H6: A relationship will exist between forms of violent behaviour used between parents and those used in dating relationships.**

Based on previous research and social learning theory, it was expected that female participants exposed to their mothers perpetration of interparental violence would be at an increased risk of perpetrating dating violence relative to females whose mothers did not engage in interparental violence. It was also expected that male participants whose fathers had perpetrated interparental violence would be more likely to perpetrate dating violence.

**H7: Participants who had a parent of the same gender perpetrate interparental violence will be at an increased risk of perpetrating dating violence relative to participants whose same gender parent did not engage in interparental violence.**

**Methods**

**Participants**

Five hundred and eleven undergraduate students from the University of Guelph participated in this study. The data from 22 participants were removed from all analyses, as their responses on the Implicit Association Test were deemed invalid (i.e., more than 10% of responses were completed in less than 300 ms). As well, there were missing data from an additional 16 participants, who were removed from the analyses. The final data for 473 participants (76% female) were analyzed. Participants were between the ages of 17 and 24 ($M = 19$ yrs $SD = 1.4$ yrs) and were predominantly White/Caucasian (89%). All of the participants had been in a dating relationship of three months or longer within the past year,
with the mean length of participants’ current or most recent relationship being 17.5 months 
\((SD = 14.86)\). All participants were heterosexual and had their primary residence in a 
household with two parental figures at the age of 13.

**Procedure**

A description of this study was posted on a psychology research website for 
introductory psychology students. Individuals who met the eligibility criteria based on the 
pre-screening questionnaire were able to view a brief description of the study before deciding 
to participate. Psychology students who were enrolled in a third-year psychology course were 
also offered the opportunity to participate, and were provided with a website that would allow 
them to access the study. The website that all participants were directed to contained a 
consent form, which participants were asked to read before providing consent and advancing 
to the study, which was completed online.

After providing consent, participants were presented with the word completion task, 
which they had five minutes to complete. After the time expired on the word completion task, 
participants completed the items from the Attitude Towards Dating Violence Scales, followed 
by the Beliefs Measure. Participants were then asked to complete the Revised Conflict Tactics 
Scale, as well as the Adult-Recall Version of the Revised Conflict Tactics Scale. The order 
that these two scales were presented in was counterbalanced to eliminate order effects. Next, 
participants completed the IAT, following which they were asked to complete demographic 
questions. Participants were then provided with debriefing information as well as the contact 
information of the lead researcher.
Measures\(^1\)

**Dating violence.** Dating violence was assessed using The Revised Conflict Tactics Scale (CTS2; Straus et al., 1996), which is the most commonly used instrument for measuring violence between romantic partners. This is a 78-item scale designed to measure the extent to which psychological abuse, physical aggression and sexual coercion is used between partners in romantic relationships. Respondents were asked to indicate how often each behaviour occurred with their current, or most recent, partner within the past year. Response options included: once in the past year, twice in the past year, 3-5 times in the past year, 6-10 times in the past year, 11-20 times in the past year, more than 20 times in the past year, not in the past year but it did happen before, and, this has never happened. Each question was asked twice to assess the respondents’ behaviour towards their partner, for example “I pushed or shoved my partner” (perpetrator data), and the partners’ behaviour towards the respondent, such as “My partner did this to me” (victim data). The mid-point value of response options were summed for each response, producing a total perpetrator score and victim score, with higher values indicating higher levels of aggression. With the present sample, the physical abuse, psychological abuse and sexual abuse scales had internal consistencies of .95, .88 and .84, respectively.

**Interparental violence.** The Adult-Recall Version of the Revised Conflict Tactics Scale (CTS2-CA; Straus, 1999) was used to assess participants’ exposure to psychological abuse and physical aggression between their parents. Participants were asked to report on their parents’ behaviour towards one another during the year when they were 13 years old. Sixty-two questions were asked in pairs, such that participants reported on mother-to-father

\(^1\)See Appendix A for a copy of each of the measures.
behaviour (e.g., “Mother insulted or swore at Father”) as well as father-to-mother behaviour (e.g., “Father insulted or swore at Mother”). Response options ranged from 0 (this never happened), to 6 (more than 20 times). Scores were generated for mother-to-father violence and father-to-mother violence, with higher numbers indicating greater exposure to parental violence. The frequency of acts were recoded, as per Straus’ (1990) recommendation, such that the mean value was used to represent the category (e.g., 3-5 times = 4, 11-20 times = 15, over 20 times = 25). In the current study, the physical abuse and psychological abuse scales had internal consistencies of .95 and .87, respectively.

Explicit attitudes towards violence- General. A general measure of explicit attitudes towards violence as well as a specific measure of explicit attitudes towards violence in dating relationships was used in the current study. To examine general explicit attitudes towards the use of aggression, the General Approval of Aggression subscale of Huesmann and Guerra’s (1997) Normative Beliefs About Aggression Scale was used. This subscale consists of eight items examining beliefs about physical and psychological aggression (e.g., “It is wrong to insult other people). The response options for these questions include, “It’s perfectly OK”, “It’s sort of OK”, “It’s sort of wrong”, or “It’s really wrong.” With the present sample, the Cronbach’s alpha for this scale was .79.

Explicit attitudes towards violence- Specific. Specific explicit attitudes towards violence in dating relationships were assessed for three forms of dating violence (physical, psychological, and sexual), using a dating violence measure by Price and colleagues (1999). Attitudes to dating violence were assessed with the Attitudes Towards Female Psychological Dating Violence Scale (AFDVPsyc; 13 items; e.g., “Girls have a right to tell their boyfriends what to do.”), the Attitudes Towards Female Physical Dating Violence Scale (AFDV-Phys;
12 items; e.g., “It is no big deal if a girl shoves her boyfriend”), and the Attitudes Towards Female Sexual Dating Violence Scale (AFDV-Sex; 12 items; e.g., “It is alright for a girl to force her boyfriend to kiss her”). The other three scales measure attitudes towards dating violence by males, and are called the Attitudes Towards Male Psychological Dating Violence Scale (AMDV-Psyc; 15 items), the Attitudes Towards Male Physical Dating Violence Scale (AMDV-Phys; 12 items), and the Attitudes Towards Male Sexual Dating Violence Scale (AMDV-Sex; 12 items). Response options for each scale range from strongly disagree (1) to strongly agree (5), with higher scores indicating greater acceptance of violent behaviour. The items from each of these six scales were presented together as one scale, with items ordered randomly using a random number generator. For this study a composite of the Attitudes Towards Female Physical Dating Violence Scale and the Attitudes Towards Male Physical Dating Violence Scale was used. The Cronbach’s alpha was .69 for the AMDV-Phys subscale, .84 for the AFDV-Phys subscale, and for the combined physical dating violence subscale that was used throughout the analyses the Cronbach’s alpha was .85.

Implicit attitudes towards violence – General. Both a general measure of implicit attitudes towards dating violence and a specific measure of implicit attitudes towards dating violence were using in this study. Participants’ implicit attitudes regarding general aggression was assessed using a word completion task created by Anderson, Carnagey and Eubanks (2003), and adapted by Jouriles and colleagues (2011). This previously paper-and-pencil task was modified for this study such that it was completed using a computer. This task required participants to fill in missing letters in order to create a real word as quickly as possible. Each word could be completed in many different ways (e.g., h _ t can be completed as “hat”, “hit”, “hot”, etc.), with certain options creating a word that is characterized as aggressive (e.g.,
“hit”). Participants were presented with 98 words missing one or more letters, and they had five minutes to fill each of them in. This task was designed to take more than five minutes to complete, therefore due to the time pressure, they did not have an adequate opportunity to reflect on their letter selections, and their responses were considered to reflect their automatic cognitions. Aggressive responses were coded based on an adapted version of the Word Count Task coding guide (Anderson et al., 2003; Jouriles et al., 2011). The total number of aggressive words reflected the degree of aggression in automatic cognitions.

**Implicit attitudes towards violence – Specific.** Implicit attitudes specific to dating violence were measured using an Implicit Association Test (IAT). The IAT, developed by Greenwald, McGhee and Schwartz (1998), is the most widely used measure of implicit attitudinal strength, and multiple versions have been created to assess a range of attitudinal constructs. The IAT is based on the premise that people are able to make the same behavioural response (i.e., a key press) to strongly associated categories more easily, and thus more quickly, than categories that are not associated (Greenwald et al., 1998). The specific IAT used in the current study was created by a software programmer from the University of Guelph, specifically for the purposes of the current study, and was identical in all respects to the IAT software provided by Inquisit by Millisecond software.

The version of the IAT used for this study was developed in a Pilot study (see Appendix B), and based on Robertson and Murachver’s (2007) and Eckhardt and colleagues’ (2012) research, in which participants categorized stimuli from two different target categories (violent and non-violent) and from two different attribute categories (good and bad). The category labels for the current study were modified to “violent relationships” and “non-violent relationships” and “I like” and “I don’t like.” Participants responded to the stimuli by sorting
it into one of two categories. One category was assigned a left response key (i.e., the “control” key), and the other category was assigned to the right response key (i.e., the right arrow key). Participants were provided with instructions that emphasized that they were to perform the task as quickly and as accurately as possible.

The IAT was comprised of five blocks of trials, three training blocks and two critical blocks. The first block was a target concept discrimination task, in which participants sorted aggression related words (e.g., hit) and non-aggression related words (e.g., calm) into the categories violent relationships and non-violent relationships for 20 trials. In the second block of trials, which was the associated attribute discrimination task, participants sorted words into the attribute categories I like (e.g., joyful) and I don’t like (e.g., agony) for 20 trials. The third set of trials, which was the initial combined task, constituted one of the critical blocks in that the same response key (i.e., the “control” key) was assigned for both violent relationships and I don’t like words, and the other key (i.e., the right arrow key) was used to categorize both non-violent relationships and I like words. The first 20 trials of this block were considered practice trials, followed by 40 critical trials.

The fourth block of trials, which was the reverse target-concept discrimination task, consisted of 20 trials designed to familiarize participants with responding to the target concepts using the opposite response key than the key used previously (e.g., the “control” key rather than the right arrow key for non-violent relationships). The fifth set of trials, which was the reverse combined task and also constituted the second critical block, was the same as the initial combined task, except that this time the categories violent relationships and non-violent relationships were assigned the same way as in the fourth block, such that violent relationships and I like are assigned to the same response key, and non-violent relationships
and I don’t like share a response key. This block consisted of 40 practice trials followed by 40 critical trials.

Each block of trials began with instructions as to the categories and assignment of response keys. As a reminder to participants, the category names remained on the side of the screen congruent with their response key throughout the trial block. The word stimuli appeared in the centre of the white screen. The order in which the words in each block were presented was random. Instead of using counterbalancing to reduce order effects, extensive practice trials were introduced before the second critical block, as such practice has been shown to be effective in reducing order effects (Nosek, Greenwald & Banaii, 2005).

Results of the IAT were examined by computing a $D$ statistic, which examines the discrepancy in response latencies between the congruent category pairs (i.e., violent and bad) and the incongruent pairing (i.e., violent and good) on practice and critical trials (Greenwald et al., 2003), and dividing this by the pooled standard deviation for these tasks. Shorter response latencies on the incongruent pairing indicate more accepting implicit attitudes towards violence.

In conducting the analysis, when error trials occurred, such that participants miscategorized a word (e.g., sorting joyful into the category bad), a built-in error penalty was added (Greenwald et al., 2003). Also in line with research conducted by Greenwald and colleagues (2003), trials with response latencies greater than 10,000 ms were removed from the analyses. As well, participants for whom more than 10% of trials had a latency less than 300 ms were removed from all analyses.
**Demographics.** Participants were asked to provide information about their gender, age, ethnicity, sexual orientation, year of university they are in, university major, and how they found out about this study. As well, participants were provided with questions regarding the length of their current or most recent romantic relationship, their current relationship status, the number of romantic relationships they have previously had and their living situation at 8 and 13 years of age.

**Results**

**Preliminary Analyses and Descriptive Statistics**

This study examined the mediating role of explicit and implicit attitudes in the relationship between exposure to interparental violence and dating violence perpetration. Prior to conducting analyses, the distribution of variables was examined. Study variables were highly skewed with the exception of implicit-general attitudes. Consistent with previous research (Carr & VanDeusen, 2002; Fite, Bates, Holtzworth-Munroe, Dodge, Nay & Pettit, 2008), Log10+1 transformations were applied to improve the normality of the variables. As well, there were some extreme cases in regard to reporting of dating violence perpetration and interparental violence, particularly among male participants. However, it was important to include these cases in the analyses, as they are believed to contribute legitimate and meaningful data as to the experiences of participants who have considerable experience with violence. See Table 1 for means, standard deviations and zero-order correlations for the transformed study variables.

Similar to previous research with undergraduate samples, an examination of rates of dating violence revealed that 29% reported having engaged in at least 1 of the 12 physical dating violence items assessed (see Table 2 for frequencies and means). However, further
exploration of the data revealed that the majority of participants who reported having perpetrated physical dating violence only endorsed one (53%) or two (19%) of the 12 items, with the most commonly reported items for males and females being those that may be considered to be of least severity (i.e., “pushed or shoved”, “slapped” and “grabbed”).

To examine gender differences in dating violence perpetration, a Chi-square analysis was conducted, with dating violence perpetration coded as having (1) or not having (0) perpetrated any physical violence in the past year. Females were more likely than males to have previously engaged in physical dating violence perpetration, 31.9% vs. 18.6%, respectively; $\chi^2(1) = 7.49, p < .01$. In examining the context in which physical dating violence occurred, that is, whether occurring dating violence is reciprocal or non-reciprocal: 4.4% of males reported being a perpetrator (and not a victim) of physical dating violence; 16.8% report being a victim but not a perpetrator of such violence; and 14.2% reported being the perpetrator as well as the victim of physical dating violence. For females: 12.8% reported being a perpetrator but not a victim of physical dating violence; 3.9% report being only the victim of such violence; and 19.2% of participants reported that the violence was mutually occurring, in that they were both a perpetrator and victim of physical dating violence in their relationship. Although victimization data were collected to provide information about the sample, subsequent analyses will focus solely on perpetration data.

To examine gender differences in physical dating violence perpetration as a continuous variable, a one-way ANOVA was carried out. Results revealed a non-significant trend with females reporting more perpetration of physical dating violence ($M = 1.22, SD = .39$) than males ($M = 1.14, SD = 0.40$), $F(1, 471) = 3.71, p = .06$. In consequence and consistent with the literature, subsequent analyses will include gender as a main effect.
Further, and in order to possibly reduce the number of analyses to be conducted, the relationship between mother- and father-perpetrated physical interparental violence was examined using two Pearson correlation analyses. One analysis was conducted for male participants and one for females. For both male ($r(113) = .95, p < .001$) and female ($r(360) = .54, p < .001$) participants, the perpetration of physical violence by mothers and by fathers was strongly correlated with one another. Therefore, as mother- and father-perpetrated interparental violence was closely correlated for both males and females, and the rates of parental violence were relatively low for both mother- and father-perpetrated violence, these variables were collapsed to form a general physical interparental violence variable that was used throughout the analyses. The specific influence of parents’ gender on participants dating violence perpetration was explored in H7.

**Analytic Strategy**

In conducting the current analyses, there were some limits as to the sophistication of analyses that could be employed in examining specific hypotheses, due to positive skewness and a number of outliers with high scores, particularly among the data supplied by male participants. In conducting the analyses, scatterplots and skewness for all measures were examined. In all instances, data responded to a Log 10 transform, except for the interparental violence ($\text{kurtosis} = 10.97, SE = .22$) and dating violence ($\text{kurtosis} = 6.23, SE = .22$) variables. Due to limitations of the complexity in terms of number of interactions possible, it was decided not to go beyond 2-way interactions when conducting regression analyses. Furthermore, in examining hypotheses involving the relationship between interparental violence and dating violence (H1 and H7), regression analyses yielded some erroneous results where simple slopes were plotted in data regions where no actual data existed. As such, when
exploring Hypotheses 1 and 7, simple zero-order correlations were utilized instead of regression analyses. Scatterplots depicting the relationship between physical dating violence perpetration and exposure to physical interparental violence for males and for females are provided in Figures 1 and 2.

A number of regressions were carried out in analyzing the data, which increased the potential for Type I error (i.e., erroneously rejecting the null hypothesis). While statistical corrections (e.g., Bonferroni’s correction) were considered to adjust for multiple analyses, it was ultimately decided to proceed without such corrections. This conclusion was arrived at on the basis that all analyses were informed by previous research findings and theoretical rationale, as well as following consideration of the trade-off between Type I and Type II error, as not acknowledging an actual risk factor of dating violence may pose a more concerning limitation than Type I error given the nature and ramifications of dating violence.

**H1: Interparental Violence Predicts Physical Dating Violence**

The relationship between exposure to physical interparental violence and physical dating violence perpetration (H1) revealed that interparental violence and dating violence was significantly positively associated, $r(473) = .29, p < .001$. When looked at separately by gender, a positive association was found between interparental violence and dating violence for females, $r(360) = .15, p < .01$. When this relationship was examined for male participants, the correlation appeared to be much stronger than when collapsed across gender, $r(113) = .64, p < .001$, however, this is largely the result of extreme cases that impact the results.

**H2: Attitudes Predict Physical Dating Violence**

In determining the role of attitudes in predicting dating violence, a 2 (Attitude Type: Explicit, Implicit) x 2 (Attitude Specificity: General, Specific) design was examined. First and
within the *implicit* type of attitudes, general and specific attitudes to dating violence were examined in predicting dating violence perpetration. On the basis of simple zero-order correlations, implicit-general attitudes were uncorrelated with physical dating violence, as well as with any of the other study variables. The measure of implicit-general attitudes was therefore dropped from further analysis.

Second, and within the *explicit* type of attitudes, general and specific attitudes to dating violence were examined in predicting dating violence perpetration. Zero-order correlations were examined, which revealed that both explicit-specific and explicit-general attitudes are associated with physical dating violence perpetration. To determine the relative predictive ability of explicit-specific and explicit-general attitudes, two hierarchical regressions were carried out. For the first regression, when entered at step 1, explicit-specific attitudes accounted for 10.8% of the variance, $\beta = .28$, $t (470) = 5.74$, $p < .001$. Explicit-general attitudes entered at step 2 accounted for an additional 1.2% of unique variance, $\beta = .12$, $t (470) = 2.50$, $p = .01$. When step 1 and 2 were reversed for the second regression, after controlling for explicit-general attitudes, explicit-specific attitudes accounted for a significant additional 6.2% of variance explained, $\beta = .28$, $t (470) = 5.74$, $p < .001$.

The explicit-general measure predicted a significant amount of variance in dating violence beyond that accounted for by the explicit-specific measure, however, the amount of unique variance accounted for was minimal (1.2%), and the explicit-specific measure was found to be a better predictor of dating violence perpetration. As such, to reduce the number of subsequent analyses, and to enhance conceptual clarity given that the corresponding measure of implicit-general attitudes was being removed from analyses, the explicit-general
measure was also dropped from future analyses. All subsequent analyses are undertaken for only the explicit and implicit assessment of specific attitudes towards dating violence.

To examine if attitudes towards violence were associated with dating violence perpetration and to examine the role of gender in this relationship, two hierarchical regressions were conducted, one for explicit-specific (hereafter, simply explicit) attitudes and one for implicit-specific (hereafter, simply implicit) attitudes. In the first regression, dating violence perpetration was regressed upon explicit attitudes and gender in step one, with the gender X explicit-specific attitudes interaction term entered in step two. Gender was dummy coded (0 = males, 1 = females).

The first step was significant, $F(2, 470) = 36.50, p < .001$, and accounted for 13.4% of the variance in dating violence perpetration. Significant main effects were found for explicit attitudes, $t(470) = 8.29, p < .001$, indicating that more accepting explicit attitudes were associated with greater dating violence perpetration. As well, a significant main effect of gender was found, $t(470) = 3.81, p < .001$, indicating that females engaged in more dating violence than males at high and low levels of explicit attitudes towards dating violence. The gender X explicit attitudes interaction term entered at the second step did not account for any additional variance, and was not significant, $\Delta F (1, 469) = .25, p = .62$.

In the second regression, step one was significant, $F(2, 470) = 4.39, p = .01$, with implicit attitudes and gender accounting for 1.8% of the variance in dating violence. Main effects were found for implicit attitudes, $t(469) = -3.16, p < .01$, as well as for gender, $t(469) = -2.18, p = .03$. The gender X implicit attitudes interaction term entered at the second step was significant, $\Delta F (1, 469) = 5.19, p = .02$, qualifying the main effects and accounting for an additional 1.1% of the variance in dating violence.
A test of simple slopes revealed a significant association between implicit attitudes and dating violence, $\beta = -0.18$, $t(469) = -3.16$, $p < .01$, such that males with high implicit attitudes were more likely to perpetrate dating violence than males with low implicit attitudes. The slope for females did not reach significance, $\beta = 0.01$, $t(470) = 0.18$, $p = .86$, thus implicit attitudes do not appear to be a predictor of dating violence perpetration for females.

**H3: Interparental Violence Predicts Attitudes**

In order to examine H3, that exposure to interparental violence is associated with more accepting explicit and implicit attitudes towards violence, two hierarchical regressions were examined, one for explicit attitudes one for implicit attitudes. For the first regression, which examined the predictors of explicit attitudes, the first step was significant, $F(2, 470) = 20.06$, $p < .001$, and accounted for 7.9% of the variance. A significant main effect was found for interparental violence, $t(469) = 3.68$, $p < .001$. However, there was no significant main effect found for gender, $t(469) = -1.74$, $p = .08$, and the gender X interparental violence interaction was not significant, $\Delta F(1, 469) = 2.91$, $p = .09$. Therefore, greater exposure to interparental violence led to more accepting explicit attitudes towards dating violence for both males and females.

For the second hierarchical regression, the first step was significant, $F(2, 470) = 5.96$, $p < .01$, and accounted for 2.5% of the variance in implicit attitudes. A significant main effect was found for interparental violence, $t(469) = -3.76$, $p < .001$, although there was no main effect of gender, $t(469) = -1.74$, $p = .08$. Of greatest interest was the significant gender X interparental violence interaction, which accounted for an additional 1.5% of the explained variance in implicit-specific attitudes, $\Delta F(1, 469) = 7.31$, $p < .01$. An examination of the simple slopes indicated that exposure to interparental violence predicted implicit attitudes for males, $\beta = -0.22$, $t(469) = -3.79$, $p < .001$, but not females, $\beta = 0.01$, $t(469) = 0.15$, $p = .88$. 


H4 & H5: Attitudes as a Mediator of Interparental Violence and Dating Violence

Mediation analyses were carried out to determine if the relationship between exposure to interparental violence and dating violence perpetration was mediated by implicit and explicit attitudes towards violence (H4). Three mediation analyses were conducted to separately examine the mediating role of implicit and explicit attitudes for males, as well as the potential mediating role of explicit attitudes for females. The mediation analyses were carried out using the SPSS Process macro developed by Hayes (2013). This macro employed nonparametric bootstrapping to evaluate indirect effects, as it has been found to be superior to alternate approaches to mediation for a number of reasons (e.g., validity, power, makes no assumption about normality of sampling distribution), and is currently considered a best practice approach (Hayes, 2009). In these analyses, the mediation was significant if the 90% (default setting for macro) Bias Corrected and accelerated confidence intervals (CIs) for the indirect effect do not include 0 (Preacher & Hayes, 2004). Results were based on 1000 resamples.

The first model, which evaluated if explicit scores mediated the relationship between physical interparental violence and physical dating violence perpetration for males, was significant, $F(2, 110) = 39.94, p < .001$, and accounted for 42.1% of the variance in dating violence perpetration. Explicit attitudes significantly mediated the relationship between interparental violence and dating violence (lower 90% CI = .002, upper 90% CI = .090).

The second model, which examined the meditational effect of implicit attitudes for males, was significant, $F(2, 110) = 39.06, p < .001$, and accounted for 41.5% of the variance in dating violence perpetration. Implicit attitudes significantly mediated the relationship
between interparental violence and dating violence (lower 90% CI = .002, upper 90% CI = .100).

The third analysis, which examined the role of explicit attitudes for females, was also significant, \( F (2, 357) = 30.75, p < .001 \), and accounted for 14.7% of the variance in dating violence. Explicit attitudes were a significant mediator of the relationship between interparental violence and dating violence for females (lower 90% CI = .013, upper 90% CI = .090).

To examine H5, that implicit attitudes towards dating violence would predict variance in the relationship between interparental violence and dating violence, over and above the variance predicted by explicit attitudes, a multiple mediation analysis was carried out for males. The model that examined the concurrent mediational effects of explicit and implicit attitudes for males was significant, \( F (3, 109) = 27.13, p < .001 \), accounting for 42.8% of the variance in dating violence perpetration. However, implicit attitudes did not significantly mediate the relationship between interparental violence and dating violence once explicit attitudes were controlled for (lower 90% CI = -.004, upper 90% CI = .092). As well, explicit attitudes did not mediate the relationship between interparental violence and dating violence once implicit attitudes were controlled for (lower 90% CI = -.006, upper 90% CI = .086).

**H6: Parents’ Forms of Violence Predict Participants’ Forms of Violence**

**Forms of violence.** To determine if a relationship existed between forms of violent behaviour (physical, psychological) used in participants’ dating relationships and those used between their parents (physical, psychological; H6), analyses were conducted on a 2 (dating violence form: physical, psychological) x 2 (gender: male, female) design, resulting in four linear regression analyses. The two forms of dating violence were entered as the criterion
variable, with the two predictor variables being exposure to physical and psychological interparental violence.

*Physical Dating Violence.* To examine the relationship between parents forms of violence and males’ physical dating violence, physical dating violence was regressed onto parents’ physical and psychological violence. The regression was significant, $F(2, 110) = 37.67, p < .001$, and the predictor variables accounted for 40.6% of the variance in males physical dating violence perpetration. After controlling for parents psychological violence perpetration, physical interparental violence predicted a significant portion (32%) of unique variance in males perpetration of physical dating violence, $\beta = .62, t(110) = 7.67, p < .001$. Parents psychological violence was not a significant predictor of males physical dating violence, $\beta = .05, t(110) = .59, p = .56$.

The regression examining females physical dating violence was significant, with predictor variables accounting for 2.6% of the variance, $F(2, 357) = 4.77, p < .01$. Physical interparental violence predicted a significant proportion (1%) of unique variance in females physical dating violence perpetration, $\beta = .13, t(357) = 2.31, p = .02$, while psychological interparental violence did not account for unique variance once physical interparental violence was controlled for, $\beta = .06, t(110) = .96, p = .34$.

*Psychological Dating Violence.* The regression to examine how parents’ psychological and physical violence predicted psychological dating violence for males was significant, $F(2, 110) = 9.16, p < .001$, and the predictor variables accounted for 14.3% of the variance in males psychological dating violence perpetration. Once physical interparental violence was controlled for, a significant proportion (6%) of the variance was predicted by psychological interparental violence, $\beta = .27, t(110) = 2.83, p < .01$. Physical interparental violence was not
a significant unique predictor of males psychological dating violence, $\beta = .17$, $t(110) = 1.78$, $p = .08$.

The regression for females psychological dating violence was also significant, $F(2, 357) = 19.24$, $p < .001$, with physical and psychological interparental violence accounting for 9.7% of the variance. Again, parents’ psychological violence predicted a significant unique proportion (8%) of variance in psychological dating violence perpetration, $\beta = .32$, $t(357) = 5.75$, $p < .001$, while physical interparental violence was not a significant predictor of dating violence once psychological violence was controlled for, $\beta = -.01$, $t(357) = -1.30$, $p = .90$.

The results reveal that a relationship did exist between the form of violent behaviour used by participants and that used by their parents, as physical dating violence perpetration was predicted by exposure to physical (but not psychological) interparental violence, and psychological dating violence was predicted by psychological (but not physical interparental violence), for both males and females. It was not possible to determine if a relationship existed in regard to the perpetration of sexual abuse, as data was not collected on sexual interparental violence.

**H7: The Influence of Parents’ Gender**

To examine if a relationship existed between participants same-gendered parents use of violence and participants perpetration of dating violence (H7), zero-order correlations were conducted (see Table 3). Examination of correlations for female participants revealed that physical violence perpetration was associated with both mothers and fathers physical interparental violence. For males a similar pattern emerged in that physical dating violence perpetration was associated with mothers and fathers physical perpetration.
Discussion

Overall, the purpose of this dissertation was to examine a proposed model in which explicit and implicit attitudes mediated the relationship between interparental violence and dating violence. This involved examining the links between each of these variables, as well as the overall mediation model. In general, the hypotheses regarding these relationships were largely supported, particularly for male participants.

Summary of Findings

To get a better understanding of this study’s sample, the occurrence of dating violence perpetration among male and female participants was examined. Nearly one third of female participants (32%) and 19% of male participants reported that they had perpetrated at least one act of physical dating violence within the past year. The prevalence of dating violence has been found to vary widely among research studies, from 4.6% to 52.1% for young women, and from 2.5% to 53.6% for young men (Spinney et al., 2007). However, the dating violence perpetration reporting among our sample is consistent with previous research indicating that physical aggression occurs in more than 20% of ongoing relationships among college students (Arias, Samios & O’Leary, 1987; Riggs & O’Leary, 1996; Riggs, O’Leary & Breslin, 1990; Strauss, 2004), with the more commonly reported forms of aggression being those that can be characterized as “low level aggression”, such as pushing, grabbing and shoving (Riggs & O’Leary, 1996). A study on dating violence prevalence among a Canadian university sample also yielded similar perpetration rates to the current study, as 22% of males and 40.5% of females reported having used physical aggression toward a dating partner (Pedersen & Thomas, 1992).
As well, the current finding that females were more likely to perpetrate physical dating violence than males was congruent with the results from a review of 118 studies examining the prevalence of dating violence among adolescents and college students, which revealed that rates of perpetration for females is significantly higher than the rates of perpetration for males (Spinney et al., 2007). However, when perpetration rates among our sample were examined further, it became apparent that while females were significantly more likely than males to report having engaged in at least one act of physical dating violence perpetration in the past year, the “annual frequency” score, which was calculated based on the frequency with which violent acts were perpetrated in the past year, did not significantly differ among male and female participants.

One potential explanation for this inconsistent gender discrepancy is that females are more likely than males to experiment with using physical violence in response to conflict in their relationship; however, as violence in intimate relationships is often bidirectional or mutual, females who perpetrate violence in a relationship are more likely to also become victims of violence (Gray & Foshee, 1997). Thus, females may experience dating violence perpetration as less rewarding than their male counterparts given the greater risks of retaliatory injury incurred for females (i.e., victimization among females is associated with much more damaging physical, psychological and economic repercussions than among males; Straus, 2011; Tjaden & Thoennes, 2000), and may become discouraged from repeatedly engaging in violence perpetration.

Another potential explanation for why more females than males reported having engaged in an act of violence perpetration may be related to the accuracy of violence reporting among males and females. The greater reporting of violence perpetration among
female participants is consistent with previous research indicating that females report higher frequencies of violence than their male counterparts, as males may be more inclined to minimize, deny, and under-report violence (Edleson & Brygger, 1986). As such, Stets and Straus (1990) suggest that males reporting on their own violence needs to be viewed with some skepticism.

This differential reporting of violence by males and females extends beyond self-reported violence, to reported exposure to violence perpetrated by one’s mother and father. Females’ reporting of exposure to father- and mother-perpetrated interparental violence (11% and 12%, respectively) was consistent with previous studies in which 10 – 30% of college-aged students reported being exposed to physical interparental violence (Edleson, 1999; Jankowski et al., 1999; Sappington, Pharr, Tunstall, & Rickert, 1997). However, males’ reporting of exposure to father- and mother-perpetrated physical violence was somewhat below this range (6% and 8%, respectively). This finding is consistent with research by Gully, Pepping and Dengerink (1982), which revealed that males are less likely than their female counterparts to report violence between their parents.

In reporting both their own dating violence perpetration and their parents’ violence perpetration, both males and females consistently reported that females perpetrated more physical violence than males. It is possible that this increased reporting of female-perpetrated violence may be because female aggression is more salient in participants’ memory than male-perpetrated violence. Female-perpetrated violence may be more frequently reported than male-perpetrated violence because it is considered less typical, or more “abnormal” in society, and therefore stands out in one’s memory.
Interparental Violence, Attitudes, and Dating Violence

The primary purpose of this study was to explore if attitudes, both explicit and implicit, significantly mediate the previously demonstrated relationship between interparental violence and dating violence. Both explicit and implicit attitudes were explored, with the potential mediating role of the less examined implicit attitudes being of primary interest. In examining how interparental violence, implicit and explicit attitudes, and dating violence perpetration are associated with each other, it was important to first examine each of these various relationships independently.

The relationship between interparental violence and dating violence was examined using zero-order correlations, which revealed that exposure to physical interparental violence was positively associated with physical dating violence perpetration for both males and females. This finding is consistent with previous research that has identified exposure to interparental violence as a risk factor for later perpetration of violence in romantic relationships, for both males and females (Arriaga & Foshee, 2004; Chapple, 2003; Foshee et al., 1999; Stith et al., 2000; White & Koss, 1991). This intergenerational transmission of violence has often been discussed in terms of social learning theory, in that children learn which behaviours are acceptable and appropriate by observing their parents’ successful behaviour in similar situations (Bandura, 1977). The effect of social learning may be general, in that engagement of either parent in violent behaviour leads to increased involvement in dating violence in both boys and girls, however, it has also been suggested that the social learning of violent behaviour may be heightened when the observed parent is one of the same gender as the observing child (Jackson, 1999; Moretti et al., 2006).
The role of gender in the social learning of violent behaviour was examined in hypothesis 7, in which the gender of parents and participants were taken into consideration when exploring the relationship between interparental violence and dating violence. As predicted, participants who had parents of the same gender perpetrate physical violence were more likely to perpetrate physical violence themselves. This was true for both males and females. In addition, having cross-gender parents perpetrate violence was also associated with physical dating violence perpetration for both males and females. Therefore, it appears as though both parents have an important influence on dating violence perpetration for both male and female participants, a finding which helps to demonstrate that the traditionally overlooked influence of mother-perpetrated interparental violence is as important a factor to consider as father-perpetrated violence, both for male and female populations. However, given that violence was typically mutually occurring in both participants’ relationships and parents’ relationships, as is characteristic of intimate partner violence (Langhinrichsen-Rohling, Misra, Selwyn & Rohling, 2012), it is difficult to extrapolate exactly how the relationship between dating violence perpetration and interparental violence perpetration may have differed had violence perpetration been unidirectional. Although this finding adds to the sparse literature in which the specific influence of mother- and father-perpetrated interparental violence are independently examined, future research may be able to go one step further, by examining how unidirectional vs. bidirectional mother- and father-perpetrated interparental violence impacts participants unidirectional violence perpetration as well as involvement in bidirectionally violent relationships. To conduct such research, targeted sampling among a large population would likely be necessary, as involvement in, and exposure to, unidirectional
violence occurs in a minority of relationships in which violence is reported (Langhinrichsen-Rohling et al., 2012).

There has been relatively little research examining the unique relationship between mother- and father-perpetrated interparental violence and dating violence perpetration by males and females, with the results to date revealing some inconsistencies, both within themselves and in relation to the current finding. Moretti and colleagues (2006) found that mothers physical violence perpetration towards their partner was significantly related to physical dating violence perpetration by both males and females, while fathers violence perpetration was not associated with either males or females perpetration. However, the measure of interparental violence differed from the current study, as did the target sample, as Morretti and colleagues (2006) sample consisted of adolescents ages 13-18 admitted to correctional facilities and suspected to be at increased risk of Posttraumatic Stress Disorder. As well, Kinsfogel and Grych (2004) found that both mothers and father physical interparental violence was associated with males dating violence perpetration, however, no significant relationship emerged between mothers or fathers violence perpetration and females dating violence perpetration. Again, the sample differed from the current study, in that it was comprised of high school students with greater ethnic diversity, in which a proportion (11%) of the participants had not yet been involved in a dating relationship; as well, the measure of dating violence differed from that used in the current study. Milletich and colleagues (2010) found that father-to-mother violence was a significant risk factor for males, but not females, dating violence perpetration, while mother-to-father violence significantly increased females, but not males, perpetration of physical dating violence. However, Milletich and colleagues (2010) examined the relative impact of mother- and father- perpetrated interparental violence
on males and females through the use of regression interaction terms, while the current study looked at the unique impact of parents on each gender individually through zero-order correlations.

Thus, while the findings to date have been inconsistent, the targeted samples, measures used, and analysis procedures have differed among studies, which may contribute to the discrepant findings. Therefore, it is clear that attempts to replicate current research findings as to the relationship between interparental violence and dating violence should be conducted in order to clarify the role of each parent in modelling violent behaviour. Ideally, sufficient research will be conducted on this topic to warrant a systematic literature review of the relationship between interparental violence and dating violence, as influenced by gender, which will enable the assessment of the quality of individual studies on this topic and help to enhance the understanding of the relationship between these variables.

In examining Hypothesis 2, the relationship between attitudes towards violence and dating violence perpetration were explored. This allowed for an exploration as to whether having generally accepting attitudes towards violence was a predictor of dating violence perpetration, and how this relationship compared to the association between dating violence perpetration and attitudes that are accepting of violence in dating relationships in specific. This was particularly worthy of interest in the current study given that the few studies that have examined implicit attitudes regarding violence have employed measures which examined attitudes towards violence in general, and then compared such attitude ratings to explicit measures of attitudes towards violence in the context of a romantic relationship (e.g., Eckhardt et al., 2012; Jouriles et al., 2011; Robertson & Murachver, 2007).
Although it was the intention to examine both general and specific implicit and explicit attitudes, using a 2 (attitudes: implicit, explicit) x 2 (specificity: general, specific) model, analyses revealed that the general implicit measure (i.e., the word completion task), did not work as expected, because it was not associated with dating violence perpetration, interparental violence, or any other measure of attitude. Although the word completion task has been used in a previous study to assess attitudes towards violence, it had previously been used in a paper-and-pencil format (Jouriles et al., 2011). However, for the current study, the word completion measure was adapted into an online task. The design of the online study reflected the nature of the paper-and-pencil format, and included the additional scoring function of being able to determine the total number of violent words, as well as the number of violent words that had later in the task been replaced with non-violent words. However, it is possible that the transition to an online format may have introduced limitations to this task (e.g., participants may have been less focused or motivated when completing the task online rather than in the presence of a researcher), which contributed to the lack of significant relationships between this task and other study variables.

Given that the word completion task was not an effective measure of implicit-general attitudes, it was not possible to proceed with a 2 (attitudes) x 2 (specificity) model, as initially intended. Therefore, although the explicit-general task did provide some unique variance beyond the more substantial variance accounted for by the explicit-specific task, suggesting that both attitudes towards violence in general and attitudes towards violence specifically in dating situations are predictive of dating violence, the explicit-general measure was not explored further in the analyses for the sake of brevity and conceptual clarity. One potential area for future exploration involves examining the relative importance of general and specific
implicit attitudes, and how these attitudes interact with general and specific explicit attitudes towards violence to account for dating violence perpetration. However, the first step in such research would involve establishing an effective measure of general implicit attitudes towards violence, which may potentially be done by attempting to replicate Jouriles and colleagues’ (2011) results using the same format (i.e., paper-and-pencil) for the word completion task.

Although it was not possible to get a full picture of how general and specific attitudes towards violence compare to one another, the current study was able to examine the variables that were of greatest interest, implicit attitudes specific to dating violence and explicit attitudes specific to dating violence. Analyses revealed that more accepting explicit attitudes towards dating violence were associated with increased dating violence perpetration for males as well as females. This finding is consistent with existing research conducted on the relationship between these variables, which has indicated that explicit attitude towards intimate partner violence is a predictor of dating violence perpetration (Carr & VanDeusen, 2002; Clarey et al., 2010; Foo & Margolin, 1995; Foshee et al., 2008; Josephson & Proulx, 2008; Kinsfogel & Grych, 2004; Lichter & McCloskey, 2004; O’Keefe, 1997; Reitzel-Jaffe & Wolfe, 2001; Riggs & O’Leary, 1996; Sears et al., 2007).

In regard to the lesser-examined counterpart, more accepting implicit attitudes towards dating violence were associated with increased dating violence perpetration for males, but not for females. The relationship between implicit attitudes and dating violence perpetration that was found among male participants was expected given that individuals often engage in dating violence impulsively and reflexively in “heat of the moment” situations (Jouriles et al., 2012). In addition, research has shown that males generally have a tendency to under-report their violence perpetration (Edleson & Brygger, 1986; Stets & Straus, 1990), so it is
conceivable that males with implicit attitudes accepting of violence were not as likely to deny, minimize or otherwise under-report engaging in dating violence perpetration as males who did not have as accepting implicit attitudes towards violence.

The relationship between implicit attitudes and dating violence perpetration among males supported predictions, however, what is less understood is the unanticipated discrepancy in the impact of implicit attitudes on dating violence between males and females. As there have been very few studies to date that have explored the relationship between implicit attitudes and dating violence perpetration, particularly among female participants, the reason for the gender discrepancy is unclear. Two recent studies examining the relationship between implicit attitudes and dating violence perpetration among both males and females demonstrated that a relationship existed between these variables for females, as well as for male participants (Jouriles et al., 2011; Robertson & Murachver, 2007). However, the current study was distinct from these previous studies in that in both prior studies the sample consisted of individuals involved in the correctional system, and measures of implicit attitudes towards violence in general were utilized. As well, it is possible that the implicit task may have been interpreted and responded to differently by male and female participants; greater discussion regarding this possibly is presented in a subsequent section of this discussion.

In examining Hypothesis 3, the relationship between interparental violence and attitudes towards dating violence were explored. These analyses revealed that increased exposure to interparental violence was associated with more accepting explicit attitudes towards dating violence for both males and females. This finding corroborates previous research which has demonstrated that individuals who have been exposed to interparental violence as children self-report having more accepting attitudes regarding intimate partner
violence than their peers (Carr & VanDeusen, 2002; Clarey et al., 2010; Foshee et al., 1999; Jaffé et al., 1990; Lichter & McCloskey, 2004; O’Keefe, 1998).

As well, greater exposure to interparental violence was associated with more accepting implicit attitudes for males, but not for females. This was the first known study to explore the relationship between interparental violence and implicit attitudes, and as such, it provides a significant contribution to the literature by demonstrating that not only may exposure to violence between parents impact explicit attitudes, but such exposure also has a significant influence on implicit attitudes, at least among males. The relationship between interparental violence and implicit attitudes was anticipated, given that implicit attitudes are believed to be formed based on early social learning, and are considered to be relatively stable over time (Polashek et al., 2010; Wilson et al., 2000). Again, the lack of relationship between exposure to interparental violence and implicit attitudes among females is unclear; however, a potential measurement-based explanation for this discrepancy is discussed in the following section.

**Attitudes as a Mediator of Interparental Violence and Dating Violence**

As relationships between each of the primary variables of interest were established, of particular interest was the role of attitudes in mediating the relationship between interparental violence and dating violence. The results revealed that, as expected, explicit attitudes were a significant mediator of this relationship for both males and females. This relationship had previously been established among a sample of Mexican high school students (Clarey et al., 2010), although in that study males and females were combined for the analyses, therefore drawing conclusions as to the significance of this relationship for each gender was not possible. As well, previous research has found that explicit attitudes mediated the relationship between exposure to interparental violence and dating violence perpetration for males, but not
for females (Kinsfogel & Grych 2004; O’Keefe, 1998). Thus, while the mediating role of explicit attitudes in the relationship between interparental violence and dating violence was previously established for males, this is the first known study to clearly demonstrate that this relationship also exists among a female population.

In addition to demonstrating that explicit attitudes mediate the relationship between interparental violence and dating violence, implicit attitudes were also found to mediate the relationship between these variables for male participants. Thus, findings from this study indicate that exposure to interparental violence as a child predicts explicit and implicit attitudes towards dating violence, which in turn predicts dating violence perpetration as a young adult. The results supported the proposed meditational model of dating violence, as derived from social learning theory. Although these were important findings in themselves, the next logical step involved determining the relative strength of implicit and explicit attitudes as mediators in the relationship between interparental violence and dating violence among male participants.

When both explicit and implicit attitudes were entered into the mediation analysis simultaneously for males, the results indicated that explicit attitudes did not mediate the relationship between interparental violence and dating violence above and beyond implicit attitudes. As well, implicit attitudes did not mediate the relationship above and beyond explicit attitudes toward dating violence. As such, the conclusion can be drawn that both explicit and implicit attitudes significantly mediate the relationship between interparental violence and dating violence for males, and neither type of attitude can be considered a superior or stronger mediator than the other attitude type.
Although a number of studies to date have examined explicit attitudes as a mediator of interparental violence and dating violence (Clarey et al., 2010; Kinsfogel & Grych, 2004; O’Keefe, 1998; Reitzel-Jaffe & Wolfe, 2001), this is the first study that has explored the relationship between implicit attitudes and interparental violence, as well as the first to examine the role of implicit attitudes in mediating the relationship between interparental violence and dating violence perpetration. The results from this study suggest that while explicit attitudes towards violence have already been acknowledged as an important factor in predicting dating violence, and as such has warranted substantial exploration, implicit attitudes appear to be just as strong of a predictor, at least for males, and yet this variable has been virtually absent from dating violence literature to date. Therefore, greater awareness and research regarding the instrumental role of implicit attitudes in the prediction of dating violence is an important avenue for future exploration.

Even though implicit attitudes were found to be an important factor associated with both dating violence perpetration and exposure to interparental violence for male participants, implicit attitudes were not associated with either of these variables for female participants. It is possible that the discrepancy in the predictive ability of implicit attitudes for males and females may be due, at least in part, to participants subjective interpretation of the Implicit Association Test. Commonly perceived social roles of males as perpetrators of dating violence and females as victims of such violence may have activated different perspectives from which male and female participants viewed and interpreted this task. Such pervasive conceptualizations of violence perpetration can be traced to accountings of women’s abuse by men throughout history, with such violence often condoned and even legalized as an acceptable means for husbands to control their wives (Muehlenhard & Kimes, 1999). Despite
the fact that substantial progress in regard to women’s rights has been made in western society during recent decades (Muehlenhard & Kimes, 1999), the traditional perception that dating violence is predominantly perpetrated by males appears to be persistent, despite substantial evidence that females perpetrate dating violence at least as frequently as males (Carney, Buttel & Dutton, 2007; Spinney et al., 2007). Thus, implicit beliefs about gender roles in dating relationships may have influenced participants’ interpretation, and thus results, regarding the IAT.

For this task, participants were asked to sort stimuli words into the categories “I Like” and “I Don’t Like” as well as into the categories “Violent Relationships” and “Non-Violent Relationships.” Responding at a faster rate to trials in which “I Like” and “Violent Relationships” were paired together was representative of more accepting attitudes towards violence in romantic relationships. However, it is possible that ambiguity existed in regard to the specific role that participants were to place themselves in when they were completing this task. For example, males who completed the IAT may have completed this word-sorting task with the mindset that they were to sort the words as though they were the aggressor of violence. Therefore, for individuals who have accepting implicit attitudes towards engaging in violent behaviour, they would have responded more quickly when “I Like” and “Violent Relationships” were paired together than males who have less accepting implicit attitudes towards violence.

However, with female participants, it is possible that their approach to the task differed from their male counterparts, in that they were more likely to place themselves in the role of victim when conceptualizing the task. As such, attitudes associated with being a victim, rather than perpetrator, of “Violent relationships” would have been activated while
completing this task. Therefore, even for females who have accepting implicit attitudes regarding their own perpetration of violence in a relationship, their acceptance of violence as perpetrated against them may be low, and it may have been this implicit attitude regarding their own dating violence victimization that the IAT was inadvertently measuring for female participants. This speculation is supported by the finding that females had significantly less accepting implicit attitudes than their male counterparts ($F(1, 471) = 4.61, p = .03$).

This potential response propensity on the IAT would explain otherwise inexplicable current findings for females, as the lack of association between implicit attitudes and dating violence, was unanticipated given the significant relationship between these variables for males, as well as previous research findings regarding implicit attitudes towards violence and violence perpetration among females (Jouriles et al., 2011; Robertson & Murachver, 2007). Jouriles and colleagues (2011) used a paper-and-pencil version of the word-completion task, and Robertson and Murachver (2007) were able to demonstrate an association between implicit attitudes and violence perpetration using an IAT. However, the IAT measure they employed used the general categories “Violence” and “Non-Violence”, and thus were not specific to dating relationships. As such, the social norms of “male perpetrators” and “female victims” would not have been primed, as may have been the case with the version of the IAT used in the current study.

In addition, this potential disparity in task conceptualization would explicate why the anticipated, yet previously unexamined, relationship between exposure to interparental violence and implicit attitudes was observed for males, but not females. Thus, while somewhat speculative, it is possible that commonly perceived social roles unintentionally impacted the implicit attitude findings for female participants. However, it is possible that in
future studies, the inadvertent influence of perceived social roles could be minimized, as IAT research has provided support for the malleability of implicit attitudes (Nosek, Greenwald & Banaji, 2007). For example, researchers have found that implicit racial bias on the IAT was lower when the experiment was administered by an African American rather than a Caucasian researcher (Lowery, Hardin & Sinclair, 2001). As well, attitudes towards flowers relative to insects was shown to vary based on whether participants were asked to read a story about “dangerous” or “good” flowers before completing the IAT (Foroni & Mayr, 2005). Thus, future research may be able to minimize the impact of social perceptions regarding gendered violence perpetration on IAT responses, and obtain a more accurate measurement of females’ implicit attitudes towards dating violence, by providing participants with a short story in which violence was perpetrated by both males and females.

**Forms of Violence**

In examining the hypothesis that a relationship will exist between forms of violent behaviour used between parents and those used in dating relationships, it was found that physical dating violence perpetration was predicted by exposure to physical interparental violence, but not psychological interparental violence, for both male and female participants. Similarly, psychological dating violence was predicted by psychological, but not physical, interparental violence for both genders. This finding corroborates previous research demonstrating that associations between interparental violence and dating violence perpetration were only significant when the same form of violence (i.e., physical or psychological) was used by parents and emerging adult participants (Black et al., 2010).

According to Kalmuss (1984), the intergenerational transmission of violence involves two distinct types of modelling: generalized modelling and specific modelling. Generalized
modelling takes place when aggression observed between family members in childhood increases the likelihood of any form of family aggression among children later in life. Such modelling would therefore not necessarily involve a direct relationship between the type of aggression used by parents and children. In contrast, specific modelling takes place when children reproduce the same type of aggression that they were exposed to in their family of origin, and in this instance, a relationship between form of violence used by parents and children would be expected. Thus, the current study corroborates previous research indicating that modelling of violence within the family tends to involve specific modelling to a greater extent than generalized modelling (Black et al., 2010; Kalmuss, 1984).

Limitations and Future Directions

The results from the current study should be considered within the context of some limitations. One notable limitation to the current study was the presence of skewness and extreme outliers among certain variables of interest. For example, while a considerable percentage of participants reported having engaged in dating violence perpetration, the actual frequency with which dating violence was perpetrated was very low among the vast majority of our sample (i.e., more than half of participants who reported engaging in dating violence had only perpetrated one act of physical dating violence). A similar pattern was revealed in regard to exposure to interparental violence. As such, this resulted in data that was highly skewed, with only a small minority of participants who had experience with extensive interparental violence exposure and dating violence perpetration, with this being particularly true of male participants. As outlined in the results section, this led to limitations as to the complexity of data analyses that could be conducted. As well, having a limited range in regard to violence exposure and perpetration also poses a conceptual limitation, as it is not possible
to state with certainty if similar results would have been found among a population in which violent behaviour is more rampant, such as within a clinical setting. For example, participants may have more accepting implicit and explicit attitudes towards dating violence if they were exposed to only a minimal amount of violence as a child, than if they had observed frequent and severe violence between their parents.

The significant influence of a small number of outliers is acknowledged, however, it is believed that the data from these participants was important to retain as it represents genuine experiences, attitudes and behaviours from an important segment of our intended population. As well, this dichotomous finding - the majority of participants having little to no experience with violence while a minority has had extensive experience with physical violence – is likely representative of the university-based population that we examined, as a similar pattern has been found in other studies of dating violence with college undergraduate samples (Milletich et al., 2010; Riggs & O’Leary, 1996). The current study specifically sought to extend previous findings regarding the relationship between implicit attitudes and dating violence perpetration among clinical samples, in which the perpetration of intimate partner violence ranged from 37% of the sample (Jouriles et al., 2011) to 100% of the sample (Eckhardt et al., 2012), to a more representative sample of young adults. Although this study fills a gap in the literature by replicating such findings among a more generalizable sample, there are limitations inherent in utilizing a university-based sample (e.g., lower rates of violence, higher education levels, and potentially more social desirability to under report violence). Therefore, in order to enhance the representation of individuals with more frequent dating violence experience among a non-clinical population, future research may want to employ a targeted sampling approach among a young adult population in order to include individuals with high, as well as low,
involvement in dating violence perpetration and exposure to interparental violence. As well, given that the particular sample used in this study was largely homogeneous in regard to specific contextual factors that have been shown to influence the rates of partner violence, such as socioeconomic status (Catalano, 2006; Cunradi, Caetano & Schafer, 2002) and race (Catalano, 2006), future research may benefit from expanding the sample to allow for an exploration of the contribution of such contextual factors.

As well, an examination of the scatterplot representing dating violence perpetration and exposure to interparental violence among male participants (Figure 1), suggests the possibility that the relationship between these variables may not be linear for males. Instead, this data may be interpreted as representative of distinct clusters of males, who have different patterns of results. For example, it appears as though for one cluster of males, high rates of exposure to interparental violence is associated with high rates of dating violence perpetration, which is consistent with the general interpretation of the data that has been provided. However, it appears as though another cluster of males engage in dating violence perpetration without having been exposed to interparental violence. Therefore, to examine the possibility of a non-linear relationship between interparental violence and dating violence, as well as distinct relationships between these variables for different segments of the population, further analysis could be carried out with a larger sample of young adult males.

Given that this study was of a cross-sectional design, the deductions that can be drawn from the analyses are limited in that no direct causal conclusions can be made. Rather, this study provides correlational substantiation regarding the relationship between interparental violence, implicit and explicit attitudes, and dating violence, that would benefit from additional longitudinal investigations. Future use of a longitudinal design would also be helpful in
removing a limitation inherent to the current research design, the need for retrospective self-reporting. Self-report measures in themselves have inherent limitations, particularly when such measures involve sensitive and transparent items that may be subjected to socially desirable responses, such as is the case with self-report measures of dating violence behaviour and attitudes. In addition, self-report measures that ask participants to report on exposure to interparental violence during childhood or adolescence (as was the case with the CTS2-CA) may introduce recall biases or memory errors, particularly as participants were asked to selectively recall and report on interparental violence during one particular year of their adolescence (i.e., age 13). While it is acknowledged that self-report measures have apparent limitations, in attempting to replicate previous findings (e.g., a significant association between interparental violence and dating violence), it was important to use self-report measures in this study, as this is the standard means of obtaining violence exposure, perpetration and attitude information in research examining these variables. As well, previous research has highlighted the necessity of using retrospective self-reports of child maltreatment in order to enhance the understanding of its long-term correlates (Berger et al., 1988; Briere, 1992). Retrospective reports by children exposed to interparental violence may provide a more accurate account of interparental violence than what would be reported by the parents themselves, as partners who are living together may be more reluctant to disclose ongoing abuse (Silvern et al., 1995).

Another potential limitation to this current study is that participants completed this study online, and as such, it was difficult to determine their engagement and attention to the completion of this study, which may have had an unintended influence on the results. Of particular consequence was the consideration provided to the implicit measures, as full
attention was required for these speed- and accuracy-based tasks. To minimize error introduced by careless responding, the data from participants who completed the word completion task in less than the five minutes stipulated to do so were discarded. As well, participants who responded excessively quickly or slowly on the Implicit Association Test (as defined in research by Greenwald et al., 2003) were removed from analyses. Despite the fact that online studies have their limitations, this approach allowed for a substantial sample size, such that the influence of sporadic errant responding was minimal. As well, while limited research has compared online- vs. laboratory-based results for the IAT, Houben and Wiers’ (2008) study comparing IAT results for implicit alcohol-related cognitive processes in these two settings revealed that IAT results did not vary systematically based on setting (i.e., home vs. lab). As well, IAT results from the home setting were more strongly associated with explicit measures as well as drinking behaviour than were results from the lab setting (Houben & Wiers, 2008), thus suggesting that IATs can be validly administered online. However, future replication of the current study with participants in a laboratory setting would be informative as to the potential impact of online participation in the assessment of implicit attitudes regarding dating violence.

Along with potential limitations introduced by the web-based nature of the implicit measures, common concerns regarding one of the implicit measures employed - the IAT - must be acknowledged. For example, a criticism of the IAT is that this measure is influenced by cultural knowledge rather than associations within the individual (Arkes & Tetlock, 2004). To address this concern, researchers created a “personalized IAT”, in which “I like” and “I don’t like” is substituted for the more general concepts of “good” and “bad”, which has been reported to increase the likelihood that individuals will evaluate the concept based on their
own associations, rather than simply classifying the concept based on cultural norms (Nosek & Hansen, 2008; Olson & Fazio, 2006). Therefore, to address this criticism of the IAT, a personalized IAT was created and used in the current study.

As well, to some it is unclear as to what exactly the IAT is measuring, as the question has been raised as to if word associations do indeed represent attitudes towards violence. However, the premise of the IAT is that attitudes can be defined as associations between concepts (Greenwald et al., 2002), a theoretical approach that is consistent with the commonly used definition of attitudes as the association between an attitude–object and a valence concept (Fazio, Chen, McDonel, & Sherman, 1982). While limitations and criticisms of the IAT do exist, the IAT was selected for use in the current study as it is the most widely used measure of implicit attitudes, and it has been demonstrated to have satisfactory reliability (Nosek et al., 2007) and predictive abilities (Greenwald et al., 2009).

In this research, the focus was on violence that occurred in dating relationships, between a male and a female. However, it is acknowledged that dating violence also occurs outside of this context. Violence has been documented to occur within same-sex relationships consisting of both two males and two females. Such dating violence experiences was not examined in the current study, as gender effects, and the relationship between male and female perpetrated violence in heterosexual interparental and dating relationships, was a central factor in the current study. Future research could expand the scope of the current study by examining the mediating role of implicit and explicit attitudes in the relationship between interparental violence and dating violence among same-sex couples.

As well, while the term “interparental violence” has been used throughout this research, it is important to clarify that participants were asked to report on their exposure to
violence that occurred between two parental figures, which may extend beyond the limited scope of biological mother and father, to also include figures such as step-parents. Again, it is important to acknowledge that while not taken into consideration in this study, individuals may witness violence between other individuals in their home environment, such as grandparents, which might also have detrimental effects on dating violence attitudes and behaviour.

It is also necessary to acknowledge that while the primary predictor variable of interest in this study was interparental violence, another important type of family violence that may impact attitudes towards dating violence as well as dating violence perpetration is child victimization at the hands of their parents. The exclusion of this important variable is a limitation of this study, particularly given the frequency with which exposure to interparental violence and child abuse overlap, as a literature review has revealed that domestic violence and physical child abuse have a median co-occurrence rate of 40% (Appel & Holden, 1998). The exposure to both direct and observed violence in the home results in what has been referred to as “dual exposure”, or a “double whammy” effect (Hughes, Parkinson & Vargo, 1989), and there is some research to suggest that children exposed to both types of violence experience worse outcomes than those exposed to only direct or observed violence (Carlson, 1991; O’Keefe, 1994). Therefore, as the impact of child victimization was not examined or controlled for in this study, it is not possible to know if and how this variable may have contributed to the development of accepting attitudes towards violence or the perpetration of dating violence and thus potentially impacted this study’s findings. Future research in this area should take into consideration both exposure to interparental violence and child
victimization in order to tease apart the relative and combined role of these variables in the development of dating violence attitudes and behaviours.

A final limitation to this study is that the context in which the violence occurred was not taken into consideration. In investigating the hypotheses, male perpetrated and female perpetrated violence were examined separately, however, it is acknowledged that most individuals who perpetrated violence were also victims of violence (as is commonly the case with dating violence; Gray & Foshee, 1997). As well, aggression as used as a means of self-defence was not differentiated from violence instigated for other reasons (e.g., to control a romantic partner, to settle conflict) in the measures of participant and interparental violence. As such, it was not possible to provide insight as to the broader social context of the violence, as well as how such a context may impact the intergenerational transmission of violence. For example, as previous research has suggested, it is probable that females were more likely to use violence as a means of defending themselves, while males were more likely to use violence to control their female partners (DeKeseredy, Saunders, Schwartz & Alvi, 1997; DeKeseredy & Schwartz, 1998). As well, participants, male or female, who have observed their parents use violence as a means of self-defence may be more likely to defend themselves with violence in their own relationships, a potential trend that was not accounted for in the current study.

The inability of the Revised Conflict Tactics Scale (and the original version of this scale) to assess the motives, meaning and context behind the violence is a frequently cited criticism of this widely used measure of intimate partner violence (DeKeseredy & Schwartz, 1998; Hines & Saudino, 2003). This failure to obtain information regarding context and motives limits the interpretability of the data collected using this popular measure, as it is not
possible to arrive at fully informed conclusions about why participants are engaging in violence, and the variability in the motivations for violent behaviour is overlooked (DeKeseredy & Schwartz, 1998). As such, important gender differences in the way that males and females enact violence are not examined and depicted.

Another inherent limitation of this measure is that it only situates abuse in the context of conflict or dispute resolution, as evidenced by the introductory instructions for this measure (i.e., “Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences”). As such, it ignores the violent behaviour that may be instigated by an attempt to control a romantic partner, or that may occur without any apparent external reason or conflict (DeKeseredy & Schwartz, 1998). Furthermore, results from the Conflict Tactics Scale can be used to indicate that violence between males and females is “symmetrical”, in that a simple count of the frequency with which violence occurs often shows that females perpetrate violence at least as frequently as males. However, the consequence of violence victimization for males and females is often quite different. Females frequently suffer greater psychological, physical, and economical damages than males (Straus, 2011), which is not recognized or taken into consideration by the Conflict Tactics Scale (with the exception of the “Injury” subscale).

Although there are acknowledged limitations to the Conflict Tactics Scale, it is the most widely used research measure for studying intimate partner violence, as it is a reliable method of eliciting highly sensitive data regarding intimate partner violence in heterosexual relationships (DeKeseredy & Schwartz, 1998; Straus & Douglas, 2004). As well, a corresponding version of the Conflict Tactics Scale measuring interparental violence has been developed, which allows for reasonable comparison between participants’ dating violence
involvement and reported exposure to interparental violence. Thus, the Conflict Tactics Scale, and the corresponding measure of interparental violence, were selected for use in this study after careful consideration of the measures’ limitations, reliability, utility and pervasiveness in the dating violence literature.

**Implications**

The results from this study offer a significant contribution to the literature on dating violence, as they provide unique insight into the important, yet under-researched, role of implicit attitudes in the intergenerational transmission of violence. This study is the first to demonstrate that exposure to violence between parents has a significant association with implicit attitudes towards dating violence, at least among males. As well, the current research provides the first evidence that the well-established relationship between interparental violence and dating violence is mediated by implicit attitudes towards dating violence for males. In addition to providing unique insight into the relationship between implicit attitudes and interparental violence, the current study corroborates and extends previous findings indicating that implicit attitudes are associated with intimate partner violence by generalizing such findings with clinical samples (Eckhardt et al., 2012; Jouriles et al., 2011; Robertson & Murachver, 2007) to a more representative sample of young adults. Furthermore, the findings of this study underscore the importance of examining, and seeking to understand, gender effects in regard to interparental violence, implicit and explicit attitudes towards dating violence, and the prediction of dating violence.

In regard to practical implications emerging from this research, the results of this study highlight the importance of early intervention for children who have been exposed to interparental violence in order to disrupt or alter the formation of accepting attitudes toward
violence. Such intervention would provide education for children regarding violence, with a goal of reducing future dating violence behaviour by modifying attitudes towards violence.

There are several programs that are currently in place in communities and schools across North America that address intimate partner violence (Ting, 2009). These programs already typically target and attempt to modify explicit attitudes regarding acceptance of dating violence. As explicit attitudes are typically based on recent encounters and may be altered by only a few learning experiences (Polashek et al., 2010; Wilson et al., 2000), there is the potential for such interventions to modify explicit attitudes, and as a result, reduce dating violence perpetration. For example, the Safe Dates Program, which addresses adolescents’ explicit attitudes and behaviours associated with dating violence, has been shown to result in less favourable explicit attitudes towards dating violence among participants than control students one year following enrolment in the program, and at the four-year follow-up, program participants were less likely to be perpetrators of physical and sexual dating violence (Foshee et al., 2004; Foshee et al., 2000).

However, the current study indicates that it might be useful for such intervention programs to also measure and target implicit attitudes towards violence, as implicit attitudes are also a predictor of dating violence perpetration. Even though it may be more challenging to modify implicit attitudes, as such attitudes are believed to be formed through early social learning experiences and thus are more entrenched and resistant to change than their explicit counterparts (Polashek et al., 2010; Wilson et al., 2000), future research should explore how implicit attitudes towards dating violence can effectively be modified. One proposed way to modify implicit attitudes involves identifying and teaching ways to negate the effects of aggressive automatic cognitions by intervening on conscious cognitions (Jouriles et al., 2011).
For example, Jouriles and colleagues (2011) found that enhanced awareness of the negative consequences associated with dating violence nullified the positive relationship between aggressive automatic cognitions and dating violence perpetration.

Alternatively, several studies have revealed that implicit attitudes may be effectively altered by focusing not on conscious willingness to effect change, but instead by attempting to alter the accessibility of negative attitudes in memory without participants’ conscious awareness (Blair & Banaji, 1996; Blair, Ma, & Lenton, 2001; Dasgupta & Greenwald, 2001; Macrae, Bodenhausen, Milne, Thorn, & Castelli, 1997). This approach has been used to alter implicit attitudes towards race, as presenting participants with exemplars of admired Black individuals (e.g., Martin Luther King, Jr., Denzel Washington) and disliked White individuals (e.g., Jeffrey Dahmer, Ted Kaczynski) led to a reduction in implicit anti-Black attitudes for a minimum of 24 hours (Dasgupta & Greenwald, 2001). However, further research is required in order to understand how such an intervention approach may be adapted for implicit attitudes towards violence. As well, additional research is required to better understand the interplay between implicit and explicit attitudes, to determine how best to address and alter implicit attitudes towards dating violence, and to determine appropriate means of incorporating such approaches into an effectual dating violence intervention program.

**Conclusion**

Overall, this study provides support for a social learning based cycle of violence theory, in that exposure to interparental violence, and accepting attitudes towards such violence, have been demonstrated to predict physical dating violence perpetration among young adults. More specifically, the current research contributed to the literature by corroborating previous findings that explicit attitudes are an important mediating factor in the
relationship between interparental violence and dating violence. As well, this study provides a unique contribution to the literature by elucidating the role of implicit attitudes as an important mediator in the relationship between interparental violence and dating violence. Therefore, while a great deal of attention and research has been paid to the role of explicit attitudes in the prediction and explanation of dating violence, this study demonstrates that implicit attitudes are an equally important predictor of dating violence, and are deserving of consideration and further exploration in theoretical models and practical interventions regarding dating violence perpetration.
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Table 1

Means, Standard Deviations and Correlations of Study Variables.

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<tr>
<th></th>
<th>DV Perp</th>
<th>Parent Perp</th>
<th>Mom Perp</th>
<th>Dad Perp</th>
<th>WC</th>
<th>Implicit</th>
<th>ATDV</th>
<th>Beliefs</th>
<th>M (SD) Combined</th>
<th>M (SD) Females</th>
<th>M (SD) Males</th>
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<td>DV Perp</td>
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<td>.64**</td>
<td>.69**</td>
<td>.01</td>
<td>-.29**</td>
<td>.33**</td>
<td>.31**</td>
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<td>2.32 (8.96)</td>
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<tr>
<td>Parent Perp</td>
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<td>-</td>
<td>.96**</td>
<td>-.04</td>
<td>-.30**</td>
<td>.33**</td>
<td>.30**</td>
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<td>3.17 (19.88)</td>
<td>2.04 (9.01)</td>
<td>6.74 (37.27)</td>
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<tr>
<td>Mom Perp</td>
<td>.19**</td>
<td>.87**</td>
<td>-</td>
<td>-.04</td>
<td>-.31**</td>
<td>.33**</td>
<td>.29**</td>
<td></td>
<td>1.66 (10.47)</td>
<td>1.03 (4.46)</td>
<td>3.67 (19.82)</td>
</tr>
<tr>
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<td>.11*</td>
<td>.85**</td>
<td>.54**</td>
<td>-</td>
<td>-.27**</td>
<td>.30**</td>
<td>.31**</td>
<td></td>
<td>1.50 (10.55)</td>
<td>1.01 (6.99)</td>
<td>3.07 (17.58)</td>
</tr>
<tr>
<td>WC</td>
<td>.05</td>
<td>.06</td>
<td>.05</td>
<td>.03</td>
<td>-</td>
<td>-.09</td>
<td>.03</td>
<td>.12</td>
<td>1.99 (.17)</td>
<td>1.99 (.17)</td>
<td>1.98 (.17)</td>
</tr>
<tr>
<td>Implicit</td>
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<td>-.04</td>
<td>-.07</td>
<td>-.01</td>
<td>.03</td>
<td>-</td>
<td>-.25**</td>
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<td>.56 (.70)</td>
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</tr>
<tr>
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<td>.07</td>
<td>.01</td>
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<td>40.65 (11.50)</td>
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**p < .01; *p < .05.

Note: Correlations for females appear below the diagonal and correlations for males are above the diagonal.

ATDV: Attitudes Towards Dating Violence

WC: Word Completion task
Table 2

*Frequency of Reported Dating Violence and Interparental Violence*

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<th>Females (n=360), %</th>
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<td>Mother</td>
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*Note.* Father: Father perpetrated; Mother: Mother perpetrated
Table 3

Correlations between participant and parent violence perpetration

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** p < .01; * p < .05.

Note: Correlations for females appear below the diagonal and correlations for males are above the diagonal. Correlations of primary interest are in bold.
*Figure 1.* Scatterplot representing dating violence perpetration and interparental violence among male participants.
Figure 2. Scatterplot representing dating violence perpetration and interparental violence among female participants.
Appendix A

Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996).

Instructions. No matter how well a couple gets 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. Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences. Please indicate how many times you did each of these things in the past year, and how many times your partner did them in the past year. If you or your partner did not do one of these things in the past year, but it happened before that, select "7."

1 = Once in the past year
2 = Twice in the past year
3 = 3-5 times in the past year
4 = 6-10 times in the past year
5 = 11-20 times in the past year
6 = More than 20 times in the past year
7 = Not in the past year but it did happen before
0 = This has never happened

1. I showed my partner I cared even though we disagreed.
2. My partner showed care for me even though we disagreed.
3. I explained my side of a disagreement to my partner.
4. My partner explained his or her side of a disagreement to me.
5. I insulted or swore at my partner. (PSYCH)
6. My partner did this to me.
7. I threw something at my partner that could hurt. (PHYS)
8. My partner did this to me.
9. I twisted my partner's arm or hair. (PHYS)
10. My partner did this to me.
11. I had a sprain, bruise, or small cut because of a fight with my partner. (INJR)
12. My partner had a sprain, bruise, or small cut because of a fight with me.
13. I showed respect for my partner's feelings about an issue.
14. My partner showed respect for my feelings about an issue.
15. I made my partner have sex without a condom. (SEX)
16. My partner did this to me.
17. I pushed or shoved my partner. (PHYS)
18. My partner did this to me.
19. I used force (like bitting, holding down, or using a weapon) to make my partner have oral or anal sex. (SEX)
20. My partner did this to me.
21. I used a knife or gun on my partner. (PHYS)
22. My partner did this to me.
23. I passed out from being hit on the head by my partner in a fight. (INJR)
24. My partner passed out from being hit on the head in a fight with me.
25. I called my partner fat or ugly. (PSYCH)
26. My partner called me fat or ugly.
27. I punched or hit my partner with something that could hurt. (PHYS)
28. My partner did this to me.
29. I destroyed something belonging to my partner. (PSYCH)
30. My partner did this to me.
31. I went to a doctor because of a fight with my partner. (INJR)
32. My partner went to a doctor because of a fight with me.
33. I choked my partner. (PHYS)
34. My partner did this to me.
35. I shouted or yelled at my partner. (PSYCH)
36. My partner did this to me.
37. I slammed my partner against a wall. (PHYS)
38. My partner did this to me.
39. I said I was sure we could work out a problem.
40. My partner was sure we could work it out.
41. I needed to see a doctor because of a fight with my partner, but I didn't. (INJR)
42. My partner needed to see a doctor because of a fight with me, but didn't.
43. I beat up my partner. (PHYS)
44. My partner did this to me.
45. I grabbed my partner. (PHYS)
46. My partner did this to me.
47. I used force (like hitting, holding down, or using a weapon) to make my partner have sex. *(SEX)*
48. My partner did this to me.

49. I stomped out of the room or house or yard during a disagreement. *(PSYCH)*
50. My partner did this to me.

51. I insisted on sex when my partner did not want to (but did not use physical force). *(SEX)*
52. My partner did this to me.

53. I slapped my partner. *(PHYS)*
54. My partner did this to me.

55. I had a broken bone from a fight with my partner. *(INJR)*
56. My partner had a broken bone from a fight with me.

57. I used threats to make my partner have oral or anal sex. *(SEX)*
58. My partner did this to me.

59. I suggested a compromise to a disagreement.
60. My partner did this to me.

61. I burned or scalded my partner on purpose. *(PHYS)*
62. My partner did this to me.

63. I insisted my partner have oral or anal sex (but did not use physical force). *(SEX)*
64. My partner did this to me.

65. I accused my partner of being a lousy lover. *(PSYCH)*
66. My partner accused me of this.

67. I did something to spite my partner. *(PSYCH)*
68. My partner did this to me.

69. I threatened to hit or throw something at my partner. *(PSYCH)*
70. My partner did this to me.

71. I felt physical pain that still hurt the next day because of a fight with my partner. *(INJR)*
72. My partner still felt physical pain the next day because of a fight we had.

73. I kicked my partner. *(PHYS)*
74. My partner did this to me.

75. I used threats to make my partner have sex. *(SEX)*
76. My partner did this to me.

77. I agreed to try a solution to a disagreement my partner suggested.
78. My partner agreed to try a solution I suggested.

Note. Items are denoted here as being categorized as Physical, Psychological, or Sexual abuse or Injury, according to the CTS2. These labels were not presented in the actual scale completed by participants.
Revised Conflict Tactics Scale – Adult Recall Version (CTS2-CA; Straus, 1999)

RELATIONSHIPS BETWEEN MY PARENTS

No matter how well parents get along, there are times when they disagree, get annoyed with each other, want different things from each other, or just have spats or fights because they are in a bad mood, are tired, or for some other reason. Parents also have many different ways of trying to settle their differences with each other. This is a list of things that might happen when your parents had differences or were angry with each other.

If your mother and father (or step-mother or step-father) were not living together in the year when you were about 13 years old and you were living with your mother, please answer about your mother and the man she was living with then. If you were living with your father, but not your mother, please answer about your father and the woman he was living with then.

Please indicate how many times each of them did the things on this list in the year when you were about 13 years old (or the last year you lived with both parental figures together). If a parent did not do one of these things in the year when you were about 13 years old (or that last year you lived with them together), but it happened some other year before or after that, circle "7".

How often did this happen in the year when you were about 13 years old, or the last year that you lived with both parental figures in the same household?

1 = Once that year
2 = Twice that year
3 = 3-5 times that year
4 = 6-10 times that year
5 = 11-20 times that year
6 = More than 20 times that year
7 = Not that year, but it did happen before or after
0 = This never happened

1. Mother showed she cared about father even when they disagreed.
2. Father showed he cared about mother even when they disagreed.

3. Mother explained her side of a disagreement to father.
4. Father explained his side of a disagreement to mother.

5. Mother insulted or swore at father. (PSYCH)
6. Father insulted or swore at mother.
7. Mother threw something at father that could hurt.  *(PHYS)*
8. Father threw something at mother that could hurt.

9. Mother twisted father's arm or hair.  *(PHYS)*
10. Father twisted mother's arm or hair.

11. Mother had a sprain, bruise, or small cut because of a fight with father.  *(INJR)*
12. Father had a sprain, bruise, or small cut because of a fight with mother.

13. Mother showed respect for father's feelings about an issue.
14. Father showed respect for mother's feelings about an issue.

15. Mother pushed or shoved father.  *(PHYS)*
16. Father pushed or shoved mother.

17. Mother used a knife or gun on father.  *(PHYS)*
18. Father used a knife or gun on mother.

19. Mother passed out from being hit on the head by father in a fight.  *(INJR)*
20. Father passed out from a hit on the head in a fight with mother.

21. Mother called father fat or ugly.  *(PSYCH)*
22. Father called mother fat or ugly.

23. Mother punched or hit father with something that could hurt.  *(PHYS)*
24. Father punched or hit mother with something that could hurt.

25. Mother destroyed something belonging to father.  *(PSYCH)*
26. Father destroyed something belonging to mother.

27. Mother went to a doctor because of a fight with father.  *(INJR)*
28. Father went to a doctor because of a fight with mother.

29. Mother choked father.  *(PHYS)*
30. Father choked mother.

31. Mother shouted or yelled at father.  *(PSYCH)*
32. Father shouted or yelled at mother.
33. Mother slammed father against a wall. (PHYS)
34. Father slammed mother against a wall.

35. Mother said she was sure they could work out a problem.
36. Father said he was sure they could work out a problem.

37. Mother needed to see a doctor because of a fight with father, but didn't go. (INJR)
38. Father needed to see a doctor because of a fight with mother, but didn't go.

39. Mother beat up father. (PHYS)
40. Father beat up mother.

41. Mother grabbed father. (PHYS)
42. Father grabbed mother.

43. Mother stomped out of the room or house or yard when she had a disagreement with father. (PSYCH)
44. Father stomped out of the room or house or yard when he had a disagreement with mother.

45. Mother slapped father. (PHYS)
46. Father slapped mother.

47. Mother had a broken bone from a fight with father. (INJR)
48. Father had a broken bone from a fight with mother.

49. Mother suggested a compromise to a disagreement with mother.
50. Father suggested a compromise to a disagreement with mother.

51. Mother burned or scalded father on purpose. (PHYS)
52. Father burned or scalded father on purpose.

53. Mother did something to spite father. (PSYCH)
54. Father did something to spite mother.

55. Mother threatened to hit or throw something at father. (PSYCH)
56. Father threatened to hit or throw something at mother.

57. Mother felt physical pain that still hurt the next day because of a fight with father. (INJR)
58. Father still felt physical pain the next day because
of a fight with mother.

59. Mother kicked father. **(PHYS)**  
60. Father kicked mother.

61. Mother agreed to try a solution to a disagreement suggested by father.  
62. Father agreed to try a solution to a disagreement suggested by mother.

**When you filled this scale out, who were you thinking about?**

- [ ] mom and dad  
- [ ] mom and step-dad  
- [ ] dad and step-mom  
- [ ] Other, please specify__________________

For these people that you filled this scale out about, how long did you live with both of them together? _____

If you were not living with two parental figures at the age of 13, what age were you reporting on for these questions? ______

*Note.* Items are denoted here as being categorized as Physical or Psychological abuse or Injury, according to the CTS2 -CA. These labels were not presented in the actual scale completed by participants.
Attitudes Towards Dating Violence Scales (Price et al., 1999).

**Attitudes Towards Male Dating Violence Scales**

**The Attitudes Towards Male Psychological Dating Violence Scale (a = .83)**

2. There is never a reason for a man to yell and scream at his girlfriend."
12. It is important for a woman to always dress the way her boyfriend wants.
14. Sometimes men just can't help but swear at their girlfriends.
15. A woman should not see her friends if it bothers her boyfriend.
16. A man does not need to know his girlfriend's every move."
24. A man should not tell his girlfriend what to do."  
28. A woman should ask her boyfriend first before going out with her friends.
40. A woman should always do what her boyfriend tells her to do.
44. There is never a reason for a man to threaten his girlfriend."
46. Relationships always work best when women please their boyfriends.
59. A man should not insult his girlfriend."  
63. It is O.K. for a man to bad mouth his girlfriend.
64. There is never a good enough reason for a man to swear at his girlfriend."  
67. A woman should always change her ways to please her boyfriend.
69. It is understandable when a man gets so angry that he yells at his girlfriend.

**The Attitudes Towards Male Physical Dating Violence Scale (a = .83)**

9. There is no good reason for a man to push his girlfriend."  
10. Sometimes a man cannot help hitting his girlfriend when she makes him angry.
13. There is no good reason for a man to slap his girlfriend."  
17. Some women deserve to be slapped by their boyfriends.
19. It is never O.K. for a man to hit his girlfriend."  
20. A man usually does not slap his girlfriend unless she deserves it.
21. Sometimes love makes a man so crazy that he hits his girlfriend.
27. Sometimes men just cannot stop themselves from punching girlfriends.
38. Sometimes jealousy makes a man so crazy that he must slap his girlfriend.
48. A woman should break up with a man when he hits her."  
57. Women who cheat on their boyfriends should be slapped.
74. It is O.K. for a man to slap his girlfriend if she deserves it.

**The Attitudes Towards Male Sexual Dating Violence Scale (a = .87)**

3. It is alright to pressure a woman to have sex if she has had sex in the past.
4. It is alright for a man to force his girlfriend to kiss him.
7. Men should never get their girlfriends drunk to get them to have sex."  
8. Men do not own their girlfriends' bodies."  
11. When men get really sexually excited, they cannot stop themselves from having sex.
29. A man should not touch his girlfriend unless she wants to be touched."  
30. To prove her love, it is important for a woman to have sex with her boyfriend.
41. Often men have to be rough with their girlfriends to turn them on.
49. A woman who goes into a man's bedroom is agreeing to sex.
72. When a man pays on a date, it is O.K. for him to pressure his girlfriend for sex.
73. It is no big deal to pressure a woman into having sex.
76. After a couple is going steady, the man should not force his girlfriend to have sex."

**Attitudes Towards Female Dating Violence Scales**

**The Attitudes Towards Female Psychological Dating Violence Scale (a = .75)**

5. There is never a good enough reason for a woman to swear at her boyfriend."
6. A man should always do what his girlfriend tells him to do.
18. If a woman yells and screams at her boyfriend it does not really hurt him seriously.
26. It is understandable when a woman gets so angry that she yells at her boyfriend.
31. **There is no excuse for a woman to threaten her boyfriend.**"
32. It is O.K. for a woman to bad mouth her boyfriend.
37. Women have a right to tell their boyfriend how to dress.
56. **A woman should not control what her boyfriend wears.**"
58. Women have a right to tell their boyfriends what to do.
60. It is important for a man to always dress the way his girlfriend wants.
62. Sometimes women just can't help but swear at their boyfriends.
70. Sometimes women have to threaten their boyfriends so that they will listen.
75. A man should always ask his girlfriend first before going out with his friends.

**The Attitudes Towards Female Physical Dating Violence Scale (a = .85)**

1. Sometimes women just cannot stop themselves from punching their boyfriends.
22. Some men deserve to be slapped by their girlfriends.
23. It is O.K. for a woman to slap her boyfriend if he deserves it.
25. It is no big deal if a woman shoves her boyfriend.
36. Sometimes a woman must hit her boyfriend so that he will respect her.
43. **It is never O.K. for a woman to slap her boyfriend.**"
45. A woman usually does not slap her boyfriend unless he deserves it.
51. **There is never a reason for a man to get slapped by his girlfriend.**"
53. Pulling hair is a good way for a woman to get back at her boyfriend.
55. **A woman should not hit her boyfriend regardless of what he has done.**"
65. Some women have to pound their boyfriends to make them listen.
68. **A man should break up with a woman when she slaps him.**"

**The Attitudes Towards Female Sexual Dating Violence Scale**

33. If a man says "yes" to sex while drinking, he is still allowed to change his mind."
34. Women should never lie to their boyfriends to get them to have sex."
35. A woman should only touch her boyfriend where he wants to be touched."
39. A woman should not touch her boyfriend unless he wants to be touched.""
42. **There is nothing wrong with a man changing his mind about having sex.**"
47. After a couple is going steady, the woman should not force her boyfriend to have sex."
50. To prove his love, it is important for a man to have sex with his girlfriend.
52. A man who goes into a woman's bedroom is agreeing to sex.
54. It is alright for a woman to force her boyfriend to kiss her.
61. It is O.K. for a woman to say she loves a man to get him to have sex.
66. A man should break up with his girlfriend if she has forced him to have sex."
71. Women should never get their boyfriends drunk to get them to have sex."
General Beliefs Questions (Huesmann & Guerra, 1997)

Instructions

The following questions ask you about whether you think certain behaviours are WRONG or are OK. Select the answer that best describes what you think. Select ONE and only one answer.

General Belief Questions

1. In general, it is wrong to hit other people.
   □ It’s really wrong □ It’s sort of wrong □ It’s sort of OK □ It’s perfectly OK

2. If you’re angry, it is OK to say mean things to other people.
   □ It’s perfectly OK □ It’s sort of OK □ It’s sort of wrong □ It’s really wrong

3. In general, it is OK to yell at others and say bad things.
   □ It’s perfectly OK □ It’s sort of OK □ It’s sort of wrong □ It’s really wrong

4. It is usually OK to push or shove other people around if you’re mad.
   □ It’s perfectly OK □ It’s sort of OK □ It’s sort of wrong □ It’s really wrong

5. It is wrong to insult other people.
   □ It’s really wrong □ It’s sort of wrong □ It’s sort of OK □ It’s perfectly OK

6. It is wrong to take it out on others by saying mean things when you’re mad.
   □ It’s really wrong □ It’s sort of wrong □ It’s sort of OK □ It’s perfectly OK

7. It is generally wrong to get into physical fights with others.
   □ It’s really wrong □ It’s sort of wrong □ It’s sort of OK □ It’s perfectly OK

8. In general, it is OK to take your anger out on others by using physical force.
   □ It’s perfectly OK □ It’s sort of OK □ It’s sort of wrong □ It’s really wrong
### Implicit Association Task Stimuli

**Implicit Association Test: Blocks, Categories, and Stimuli words**

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<td>Pleasant</td>
<td></td>
<td>•I Like</td>
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<td></td>
<td>Awful</td>
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<td>Violent Relationships</td>
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<td></td>
<td>Good</td>
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<td>•I Don’t Like</td>
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<td>Awful</td>
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<td>Non-Violent Relationships</td>
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<td>Disgusting</td>
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<td>Violent Relationships</td>
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<td>Non-Violent Relationships</td>
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<td>Terrible</td>
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<td>•I Like</td>
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<td>•Violent Relationships</td>
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<td>Non-Violent Relationships</td>
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<td>Violent Relationships</td>
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<td>Violent Relationships</td>
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<tr>
<td></td>
<td>Terrible</td>
<td></td>
<td>•I Don’t Like</td>
<td></td>
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</tbody>
</table>

Note: • refers to the assignment to the response key (e.g., • located on the left side of a word, indicates that the correct response key for that word or category is on the left of the keyboard).
Word Completion Task (Anderson, Carnagey & Eubanks, 2003)

You will be given a list of 98 words. Each word will be missing 1 or more letters. Your job is to fill in the missing letters to make a complete word. You will have 5 minutes; try to do as many as you can in the 5 minutes. You probably won’t get all 98 done. The idea is just to do as many as you can, so don’t spend too much time on any one word. Also, you don’t have to do the words in order – you’ll probably want to skip around so you can finish as many as possible.
Demographic Questions

*Please note, you may skip any questions that you do not want to answer.

What is your gender? □ Male  □ Female  □ Other  □ Would rather not specify

What is your current age? ______

What is your sexual orientation? □ Heterosexual  □ Lesbian  □ Gay  □ Bisexual  □ Other, please specify: ___________

What is your ethnicity? (Check as many as apply)

□ European (i.e., White)  □ Latin, Central, and South American
□ African  □ South Asian
□ First Nations/Native  □ East or Southeast Asian
□ Caribbean  □ Arab
□ Other, please specify: ___________

What year of university are you currently enrolled in? ______

What is your major in university? ____________  □ Not yet decided/declared

How many romantic relationships have you previously been involved in that have been three months or longer? ______

Have you been in a romantic relationship of 3 months or longer within the past 12 months? □ yes  □ no

What is the length of your current or most recent romantic relationship? ___________

What is your current relationship status? □ Single  □ Dating  □ Engaged  □ Common law  □ Married  □ Divorced/Separated  □ Other

When you were 13, did you spend most of your time living in a household with 2 parental figures (e.g., your biological mom and biological dad, your mom and step-dad, etc.) □ yes  □ no

When you were 8, did you spend most of your time living in a household with 2 parental figures (e.g., your mom and dad, your mom and step-dad, etc.) □ yes  □ no
Appendix B

Pilot Study

To date, there is no known measure that examines implicit attitudes towards violence in a dating relationship. Therefore, in order to examine specific implicit attitudes towards dating violence, and to compare these attitudes towards specific explicit attitudes towards dating violence as well as to more general implicit attitudes towards violence, it was necessary to create a new measure. This was done by modifying an existing version of the Implicit Association Test (IAT), that had previously been used to examine implicit attitudes towards violence in general (Robertson & Murachver, 2007).

In order to create an implicit task that was tailored to attitudes towards violence in dating relationships, the previously used category label “Violence” was changed to “Violent Relationships”, and the category “Non-Violence” was changed to “Non-Violent Relationships.” As well, as recently discussed in the IAT literature (Han, Czellar, Olson & Fazio, 2010; Olson, Fazio & Han, 2009), the traditionally used category labels “Good” and “Bad” have inherent limitations as such category labels introduce extrapersonal associations, which are “attitude-irrelevant knowledge that does not form the basis of the individual’s attitude toward the object” (p. 287, Han et al., 2010).

Such extrapersonal knowledge may by activated by inherent ambiguity as to the specific perspective intended by the vague category labels “Good/Bad” (e.g., the participant’s, their culture). As well, research has shown that IAT responses regarding “Good” and “Bad” can be affected by previous experiences in completely unrelated tasks (Han et al., 2010). However, recent research has shown that personalizing the IAT, by using the category labels “I Like/I Don’t Like” instead of “Good/Bad”, has reduced the impact of extrapersonal associations (Houben & Wiers, 2007). Thus, the newly created version of the IAT utilized the labels “I
Like” and “I Don’t Like” rather than the labels “Good” and “Bad” that Robertson and Murachver (2007) had used.

In creating the current version of the IAT, the majority of the stimuli words assigned to each of the categories remained the same as those used by Robertson & Murachver (2007), except that in the “Violent Relationships” category, the words “assault” and “insult” were substituted for the previously existing “choke” and “kick”, in order to include some stimuli words that were not necessarily specific to severe physical violence. As well, in the “Non-Violent Relationships” category, the words “calm”, “compromise”, “peace” and “understanding” were substituted for the previously used “hug”, “embrace”, “soothe” and “comfort”, as these previously used words can often be descriptive of violent, as well as non-violent, relationships. For a complete list of the words, see Appendix C.

A pilot study was conducted in order to determine if the newly created version of the IAT would produce comparable results to the previously existing measure that assessed implicit attitudes towards violence in general, as well as to ensure that the procedure for the study was sound and that the wording of the IAT tasks was not confusing to participants. Students in a third year undergraduate psychology course were offered the opportunity to take part in this study for course credit. A description of this study, as well as access to the study itself, was posted on the course website. A total of 18 students completed the study. Participants were all female, with a mean age of 20 ($SD = .93$), and were predominantly White/Caucasian (85%).

In the study, participants were asked to complete the Revised Conflict Tactics Scale (CTS2; Straus et al., 1996), in order to examine the prevalence of dating violence perpetration among a sample of University of Guelph undergraduate students, which would inform the
viability of conducting the major study with this population. Following the completion of the
CTS2, participants completed two versions of the IAT (i.e., the version used by Robertson & Murachver, 2007, and the newly created version of the IAT), and the order in which the two
IAT tasks were presented was counterbalanced. Finally, participants were asked to complete
demographic items (e.g., age, ethnicity, sexual orientation, current relationship status).

Specifics of the IAT measure, the test’s procedure and the scoring process are outlined
in the manuscript (see pages 33-35). A Pearson correlation revealed that the existing version
of the IAT \( (M = .870, SD = .23) \) and the newly created version of the IAT \( (M = .815, SD = .30) \) were highly associated with one another, \( r(18)= .514, p = .03 \). As such, the newly created
version of the IAT was determined to be a sufficient measure of implicit attitudes toward
violence, and was selected for use in the current study as it was believed to be an
improvement over the existing measure in examining attitudes specific to dating violence as
well as minimizing the influence of extrapersonal associations.

To examine the prevalence of various forms of dating violence among this sample, the
dating violence variables were dichotomized as “having occurred at all in the past year” and
“not having occurred at all in the past year.” Analyses of the dating violence data revealed
that the majority of participants had been involved in some form of abusive or coercive
behaviour with their dating partner, as a perpetrator and a victim, at some point in their lives.
Psychological abuse was the most commonly occurring type of aggression in relationships
(89.5% were perpetrators; 73.7% were victims). As well, 36.8% of participants were
perpetrators of physical abuse, and 47.4% of participants were victims of physical abuse. In
regards to sexual coercion, 26.3% were perpetrators and 36.8% of participants were victims of
this form of aggression. Based on the high prevalence rates of dating violence among this sample, it was considered appropriate to conduct the major study with this population.
Appendix C

Implicit Association Test Stimuli: Attitudes Towards Violence

*Category labels, followed by the words that are to be sorted for that category.*

**IAT 1**

<table>
<thead>
<tr>
<th>“Good” words</th>
<th>“Bad” words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great</td>
<td>Bad</td>
</tr>
<tr>
<td>Fantastic</td>
<td>Horrible</td>
</tr>
<tr>
<td>Pleasant</td>
<td>Awful</td>
</tr>
<tr>
<td>Good</td>
<td>Disgusting</td>
</tr>
<tr>
<td>Wonderful</td>
<td>Terrible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“Non-Violent words”</th>
<th>“Violent” words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hug</td>
<td>Threaten</td>
</tr>
<tr>
<td>Embrace</td>
<td>Push</td>
</tr>
<tr>
<td>Soothe</td>
<td>Choke</td>
</tr>
<tr>
<td>Comfort</td>
<td>Kick</td>
</tr>
<tr>
<td>Support</td>
<td>Hit</td>
</tr>
</tbody>
</table>

**IAT 2**

<table>
<thead>
<tr>
<th>“I Like” words</th>
<th>“I Don’t Like” words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great</td>
<td>Bad</td>
</tr>
<tr>
<td>Fantastic</td>
<td>Horrible</td>
</tr>
<tr>
<td>Pleasant</td>
<td>Awful</td>
</tr>
<tr>
<td>Good</td>
<td>Disgusting</td>
</tr>
<tr>
<td>Wonderful</td>
<td>Terrible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“Non-Violent Relationships” words</th>
<th>“Violent Relationships” words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compromise</td>
<td>Assault</td>
</tr>
<tr>
<td>Calm</td>
<td>Insult</td>
</tr>
<tr>
<td>Peace</td>
<td>Threaten</td>
</tr>
<tr>
<td>Support</td>
<td>Push</td>
</tr>
<tr>
<td>Understanding</td>
<td>Hit</td>
</tr>
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</table>
**Implicit Association Test 1: Blocks, Categories, and Stimuli words**

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<th><strong>Block 2</strong> 20</th>
<th><strong>Block 3</strong> 60</th>
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<td>Associated Attribute Discrimination</td>
<td>Initial Combined Task</td>
<td>Reversed Target-concept Discrimination</td>
<td>Reversed Combined Task</td>
</tr>
<tr>
<td>Task Instructions</td>
<td>•Non-Violence Violence•</td>
<td>•Good • Bad•</td>
<td>•Non-violence Good • Violence• Bad•</td>
<td>•Violence Non-Violence•</td>
<td>•Violence Non-Violence•</td>
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<tr>
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<td>•Great • Bad•</td>
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<td></td>
<td>•Embrace • Push•</td>
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<td>•Embrace • Push•</td>
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<td>•Pleasant • Awful•</td>
<td>•Soothe • Choke•</td>
<td>•Push • Soothe•</td>
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<td>•Choke • Comfort•</td>
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<td>•Support • Hit•</td>
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<td>•Kick • Support•</td>
<td>•Kick • Support•</td>
</tr>
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<td></td>
<td></td>
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<td>•Hit • Support•</td>
<td>•Hit • Support•</td>
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IAT 1
### Implicit Association Test 2: Blocks, Categories, and Stimuli words

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<td>Initial Combined Task</td>
<td>Reversed Target-concept Discrimination</td>
<td>Reversed Combined Task</td>
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<tr>
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<td>•Peace &amp;</td>
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<td>•Support &amp;</td>
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<td>•Understanding &amp;</td>
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<td></td>
</tr>
<tr>
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<td>•Hit &amp;</td>
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