

## JEALOUSY AND MUTUAL PSYCHOLOGICAL PARTNER VIOLENCE

SOME GET MAD, OTHERS GET SAD:  
THE MEDIATING ROLE OF JEALOUSY IN FEMALE UNDERGRADUATE  
STUDENTS' EXPERIENCES WITH ROMANTIC RELATIONA L AGGRESSION

BY  
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A Thesis  
Submitted to the School of Graduate Studies  
In Partial Fulfillment of the Requirements  
For the Degree  
Master of Science

McMaster University

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MASTER OF SCIENCE (2008)

McMaster University

(Psychology)

Hamilton, Ontario

TITLE:       Some get mad, others get sad: The mediating role of jealousy in female  
undergraduate students' experiences with romantic relational aggression

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NUMBER OF PAGES: vii, 36

## Preface

This thesis consists of a study that is under review in a peer reviewed scientific journal. The author of this thesis is the primary author of the work under review, including theoretical design, data analysis, and manuscript preparation. The thesis supervisor, Dr. Tracy Vaillancourt, is second author of this manuscript.

## Abstract

Romantic relational aggression is a form of psychological abuse that is meant to purposefully incite or induce insecurity about the relationship. It has been shown to be associated with emotional problems such as increased anxiety and depression symptoms as well as aggression, all of which may be manifestations of jealousy. The goal of this study was to propose and test a theoretical model explaining the fundamental role that jealousy plays in mutual romantic relational aggression in intimate partnerships using structural equation modeling. Results indicated that romantic relational victimization is predictive of possessiveness (an indicator of jealousy), which in turn was predictive of aggression use and anxious and depressive symptoms. Model fit indices supported our theory that in this manner, relational victimization serves as a form of jealousy induction, and that the resulting jealousy experienced by the victim can manifest as reciprocal relational aggression, depressive, or anxious symptoms.

## Acknowledgements

There are a number of individuals to whom I would like to extend my deepest gratitude for their contributions to this project:

First, I would like to thank Dr. Tracy Vaillancourt, whose guidance and mentorship has assisted me in each step toward completing this thesis.

Second, Dr. Aaron Schat is sincerely thanked for his helpful discussions during the course of this study, and the comments and suggestions of Dr. Louis Schmidt are greatly appreciated.

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## General Introduction

In a review of the Intimate Partner Violence (IPV) literature, Jackson (1999) suggested that a disproportionate amount of research has been devoted to physical violence, largely ignoring alternative forms of abuse. Specifically, it was argued that the conceptualization of what constitutes abuse must extend beyond physical aggression to include psychological aggression. Psychological aggression is characterized by non-physical behaviour meant to cause harm, such as verbal abuse or restricting one's ability to contact family and friends (Jackson, 1999). Psychological aggression can consist of overt or covert acts, and as such can range from blatant controlling behaviour to more subtle forms of social manipulation. In comparison to what is known regarding the effects of physical aggression, an understanding of how psychological abuse, especially in the form of covert social manipulations, might relate to behavioural and mental health outcomes is still relatively non-existent.

This paucity is problematic because those who are psychologically but not physically abused are often perceived as being less affected by their situation (Jackson, 1999). This may be due to the lack of visibility of potential mental health consequences associated with psychological abuse compared to the often salient markers of physical abuse. This issue has been addressed in two studies of the mental health consequences associated with physical, sexual and psychological abuse. Contrary to conventional belief, Pico-Alfonso (2005) and Pico-Alfonso et al., (2006), found that by controlling for other forms of abuse, psychological victimization was the strongest predictor of post-traumatic stress disorder (PTSD), depressive symptoms, anxious symptoms and thoughts

of suicide, underlining the importance of examining the outcomes of psychological abuse.

Although these studies are representative of the harmful outcomes of psychological abuse, it has not been articulated why psychological abuse is so closely related to such negative mental health outcomes. One possible explanation is that severe insecurity induced by psychological victimization (Linder, Crick, & Collins, 2002) leads to jealousy and insecurity about the romantic union. In physically abused women, self-reported jealousy is usually minimal (Marrujo & Kreger, 1996). However, there is good reason to believe that this is *not* the case for victims of psychological abuse. Many psychologically aggressive tactics are characterized by attempts to devalue the victim and create a sense of potential loss of the relationship. Considering this, the existence of a threatened loss of the relationship might help to explain jealousy-related mental health outcomes in victims of psychological abuse. Specifically, White's (1981) theory of jealousy posits that the potential loss of a partner by rejection or a rival incites a type of jealousy characterized by an evaluation of the loss of relationship rewards and self-esteem. This evaluation can then be expressed as cognitions, negative affect, and behaviours such as depression, anxiety and aggressive behaviour, the latter of which may contribute to our understanding of mutual psychological violence in romantic partnerships. The current research seeks to extend our understanding of the mental health outcomes associated with psychological abuse by addressing the role of jealousy in psychologically abusive relationships.

### Summary of Thesis Contributions

This thesis contributes to the existing literature in the following ways:

This study extended our understanding of the potential outcomes associated with psychological victimization, by examining relational aggression in romantic relations.

This study proposed a new theoretical framework from which the mental health outcomes and mutual aggression associated with romantic relational aggression can be better understood in the context of jealousy.

Running Head: ROMANTIC RELATIONAL AGGRESSION

Some get mad, others get sad: The mediating role of jealousy in female undergraduate students' experiences with romantic relational aggression

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**Under Review**

**Key Words:** Romantic Relational Aggression, Psychological Abuse, Emotional Abuse, Intimate Partner Violence, Partner Jealousy, Depression, Anxiety

Authors' Note: This research was supported by a grant from the Arts Research Board, McMaster University. The authors thank Aaron Shat, Jessie L. Miller and Aanchal Sharma for their help with this study. All correspondence should be addressed to Dr. Tracy Vaillancourt at the Department of Psychology, Neuroscience & Behaviour, McMaster University, 1280 Main Street West, Hamilton, ON, L8S 4K1 [vailat@mcmaster.ca](mailto:vailat@mcmaster.ca) or [anorcksa@mcmaster.ca](mailto:anorcksa@mcmaster.ca).

Some get mad, others get sad: The mediating role of jealousy in female undergraduate students' experiences with romantic relational aggression

Intimate partner violence (IPV) includes acts of physical violence, verbal and psychological abuse, isolation, material exploitation, and forced sexual intercourse (United Nations, 1993; World Health Organization, 2000). IPV is a pervasive world issue that involves males and females as both victims and perpetrators (Anderson, 2002; Arias, Samios, & O'Leary, 1987; Bookwala, Frieze, Smith, & Ryan, 1992; Burke, Stets, & Pirog-Good, 1988; Kasian & Painter, 1992; Riggs, O'Leary & Breslin, 1990).

Although males are abused by their female and male partners, the burden of suffering is more strongly linked to females who are ill-treated at higher rates than males, and the abuse they endure tends to be more violent in nature and more likely to result in serious injury that requires medical attention (Tjaden & Thoennes, 1998 and 2000; Statistics Canada, 2006; World Health Organization, 2000; see also Aizenman & Kelley, 1988; Follingstad, Wright, Lloyd & Sebastian, 1991; Stets & Pirog-Good, 1989).

The bulk of the literature on IPV has focused on the more overt form of physical abuse (Straus, Gelles & Steinmetz, 1980; Walker, 1979 and 1984; see Jackson, 1999; O'Leary, 1999 for reviews). However, most victims of physical abuse are subjected to other forms of maltreatment within their relationship (World Health Organization, 2000; Statistics Canada, 2006). Indeed, physical and psychological abuse (also termed emotional abuse) often co-occur (e.g., Henning & Klesges, 2003; Pico-Alfonso, 2005; Pico-Alfonso et al., 2006; Stevens, 1996) with psychological abuse often acting as a precursor to physical violence (Follingstad et al., 1990; Henning & Klesges, 2003;

Kasian & Painter, 1992; Martin, 1981; O’Leary, 1999; Okun, 1986; Riggs, Murphy, & O’Leary, 1989; Ronfeldt, Kimerling & Arias, 1998; Tolman, 1989; Walker, 1979).

Studies examining psychological and physical IPV have found that while physical abuse certainly causes harm, it is psychological abuse that is more debilitating and protracted (Kasian & Painter, 1992; O’Leary, 1999; Pico-Alfonso 2005 and 2006; Walker, 1984).

Psychological abuse is also far more common than physical abuse. For example, in one large sample of university-aged women, the life time prevalence rate for psychological abuse was estimated at 91.2% versus 43.1% for physical IPV (Neufeld, McNamara, Ertle, 1999; see also White & Koss, 1991). Despite these disconcerting findings there remains a bias in the literature and within governmental and world health organizations to focus on physical and not psychological abuse. Perhaps this bias persists because psychological abuse is difficult to define (Katz & Arias, 1999; O’Leary, 1999) or because the assumption is that physical abuse is associated with a poorer sequela (O’Leary, 1999). These reasons notwithstanding, there remains a critical need for more research addressing psychological IPV.

The present study addresses this gap in knowledge by examining a type of psychological abuse termed *romantic relational aggression* in a large sample of university women. According to Health Canada (Stevens, 1996) psychological (emotional) abuse is “based on power and control” and includes behaviors such as rejecting, degrading, terrorizing, isolating, corrupting/exploiting and denying emotional responsiveness. The World Health Organization (2008) says that emotional violence includes behaviors such as being humiliated, belittled, scared or intimidated on purpose.

In the research literature, behaviors like verbal harassment and criticism, isolation, jealousy and possessiveness, threat to harm self and/or a person's property, and threats about the relationship are used to characterize psychological abuse (see Pico-Alfonso, 2005; Follingstad, Rutledge, Berg, Hause, & Polek, 1990). Romantic relational aggression also consists of overt or covert acts that are meant to harm one's intimate partner in a non-physical way, but differs from psychological or emotional abuse in that the target of the attack is *always* the relationship (Linder, Crick, & Collin, 2002). Romantic relational aggression includes behavior such as threatening to terminate the romantic relationship if one's partner does not comply, flirting with another person in front of one's partner, or cheating on one's partner.

In this respect, romantic relational victimization incites insecurity about the relationship (Linder, et al., 2002) and is associated with jealousy-related emotional problems such as increased anxiety and depression symptoms (Bagner, Storch, & Preston, 2007; Leadbeater, Banister, Ellis, & Yeung, 2008). Romantic relational victimization is also associated with romantic relational aggression (Linder, et al., 2002), a finding that is consistent with other forms of intimate partner aggression (Anderson, 2002; Arlas et al., 1987; Bookwala et al., 1992; Burke et al., 1988; Kasian & Painter, 1992; Riggs, O'Leary & Breslin, 1990; White & Koss, 1991). Although victimization and perpetration often co-occur, most IPV studies have focused on the abuser or the abused in isolation. As well, there is serious lack of understanding concerning why aggression begets aggression in romantic unions (Jackson, 1999). Some researchers have suggested that mutual violence exists because women are responding to being attacked by

using aggression in turn, a self-defense explanation that has been mainly applied to physical IPV (Makepeace, 1986; Follingstad et al. 1991).

However, romantic jealousy is also an important trigger in IPV (Bookwala et al., 1992; Puente & Cohen, 2003; Stes & Pirog-Good, 1989). Romantic jealousy is generally defined as a series of emotional, cognitive, and behavioural responses to a relationship threat (White, 1981; Mathes, Adams, & Davies, 1985). Specifically, some researchers suggest that jealousy is the result of a belief that one's relationship with their partner is threatened by someone else (Parker, Low, Walker, & Gamm, 2005). Those who are experiencing romantic jealousy often report experiencing sadness, anger and anxiety (Parker et al., 2005, Sharpsteen, 1993), which we posit may be characterized by greater levels of self-reported anxious and depressive symptoms as well as aggressive behaviour. Some researchers have argued that these characteristics of romantic jealousy are the primary cause of male to female violence (e.g., Buss, 2000; Daly & Wilson, 1988). Although jealousy is viewed as a marker of insecurity, it is also conceptualized as a sign of love as evident in St. Augustine's famous quote "He that is not jealous is not in love" (Puente & Cohen, 2003).

Examining jealousy in the context of romantic relational aggression is important because as mentioned, romantic relational aggression is meant to *purposefully* incite or induce jealousy and insecurity about the relationship which may help explain the high degree of overlap between victimization and perpetration in this manner (e.g.,  $r=.57$ , see Linder, et al., 2002). Jealousy and aggression are often inextricably linked (Spinoza, 1948; White & Mullen, 1989) and therefore it is not that surprising that romantic jealousy



often leads to aggressive retaliation (Daly & Wilson, 1988; deWeerth & Kalma, 1993; see also review by Harris, 2003). However, not all victims necessarily respond with aggression. Some may internalize the abuse and become depressed and/or anxious as affective expressions of jealousy (e.g., Anderson, 2002; Migeot & Lester, 1996; Vitanza, Walker, & Marshall, 1995; Walker, 1979). With this in mind, it is important to also acknowledge the potential internalizing difficulties associated with jealousy induction. Consistent with deWeerth and Kalma (1993), we hypothesize that jealousy will be “experienced and expressed in a complex set of ways” (p.265). Specifically, we hypothesize that romantic relational victimization will be associated with an indicator of jealousy (possessiveness), and that possessiveness will in turn be associated with specific manifestations of jealousy: romantic relational aggression, increased depressive and/or anxious symptoms.

In sum, the present study contributes to the existing IPV literature by examining a form of psychological abuse that has been shown to be used by dating couples (Bagner et al., 2007; Lento, 2006; Linder et al., 2002). We also extend our inquiry beyond romantic relational victimization and consider the role that jealousy plays in relation to different responses to abuse: aggression, depression and anxiety. We examine these links in a large sample of university women. Recognizing that romantic relational victimization is also experienced by men at a high rate (Lento, 2006; Linder et al., 2002), we nevertheless include only women in this study because IPV in general has been shown to be related to a poorer sequela for women than for men (e.g., Statistics Canada, 2006; World Health Organization, 2000). As well, robust sex differences have been found with respect to the

use of relational aggression— more females than males use this type of aggression in their social relationships and these sex differences have been shown to be differently related to psychological outcomes (see Vaillancourt, 2005 for a review). For example, Bagner et al. (2007) found that romantic relational aggression was associated with social anxiety for women but not for men.

## Method

### *Participants*

As part of a larger study on females' physical, mental and sexual health, 1100 undergraduate students from a mid-size Canadian university completed self-report questionnaires regarding perpetration and experiences of romantic relational victimization, interpersonal jealousy, anxiety symptoms, and depressive symptoms (described below). Included in the sample were female respondents who were either currently in a heterosexual romantic relationship or had been in a heterosexual romantic relationship in the past year ( $N=730$ ). The mean participant age was  $M=20$  years ( $SD=1.77$ ); with a minimum age of 16 and maximum age of 29. As a way of avoiding class selection (i.e., only first year introductory psychology students) participants were recruited from the student centre and were offered \$5.00 for participation. Less than 5% of the women approached to take part in this study declined participation. Table 1 provides descriptive statistics for age, dating status, and faculty of study.

### *Measures*

Subscales from Morales and Crick's (1998) measure of aggression and victimization were used to measure self-reported romantic relational aggression ( $\alpha = .69$ ),

romantic relational victimization ( $\alpha = .80$ ), and relationship insecurity (possessiveness) ( $r = .77$ ); see Appendix A for specific items). Previous use of this scale has found significant correlation between romantic relational victimization and aggression. This measure has also found a link between victimization and aggression and depression, as well as between jealousy and both romantic relational aggression and victimization (Linder et al., 2002).

The Beck Depression Inventory-II (BDI-II, Beck, Steer, & Brown, 1996) was employed as a measure depressive symptoms ( $\alpha = 0.93$ ). The BDI-II is one of the most widely used measures of depressive symptoms. It consists of 21 self-report items measuring specific symptoms of depression such as feeling of hopelessness and agitation, sleep patterns, concentration, crying, cognitions such as guilt, and physical symptoms like fatigue, weight loss, and lack of sexual interest.

The Beck Anxiety Inventory (BAI, Beck, Epstein, Brown, & Steer, 1988) was used to measure anxious symptoms ( $\alpha = 0.93$ ). The BAI is a 21 item self-report measure assessing subjective levels of anxiety on a four-point scale. Participants respond to items regarding the frequency of experiencing physical and emotional symptoms with the last month. Examples of measured symptoms commonly associated with anxiety are numbness or tingling, dizziness, nervousness, fear, hot/ cold sweats and unsteadiness.

### *Data Analysis*

Analyses were conducted in two steps using AMOS 7.0 (Analysis of Moment Structures; Amos Development Corporation, 2007). In the first step we tested the purported measurement structure of Morales and Crick's (1998) romantic relational

aggression measure using confirmatory factor analysis (CFA). In the second step, the identified latent factors of perpetration, victimization and insecurity were included in our path analysis. Due to high sensitivity of the  $\chi^2$  test of significance in large sample sizes (Kline, 2005), we report three other goodness of fit indices (Comparative Fit Index (CFI); Normed Fit Index (NFI); and Root Mean Square Error of Approximation (RMSEA) to assess overall model fit.

## Results

Correlations between demographic variables and study variables were examined to determine the potential necessity of controlling for age and sexual activity, as it has been argued that both may play a role in the victimization of females (Himelein, 1995; Silverman et al., 2001). As shown in Table 2, age and sexual activity did not predict any study variables. Consistent with Linder et al., (2002), our participants reported greater levels of perpetration of romantic relational aggression compared to romantic relational victimization— 43.3% reported perpetrating some level of relational aggression in their romantic relationships; while 21.4% reported being relationally victimized. Pearson correlations for all of the variables are shown in Table 2.

### *Measurement Structure*

Testing the measurement structure of Morales and Crick's (1998) romantic relational aggression measure using CFA we found that the indicator item-latent factor loadings ranged from  $\beta=.442$  to  $\beta=.879$ . Similarly, the latent factor correlations ranged between  $r=.504$  to  $r=.654$ , with scale items assigned to one of three theoretical latent factors: romantic relational aggression, romantic relational victimization, and partner

jealousy. Errors for items (1) “My romantic partner tries to make me feel jealous as a way of getting back at me” and (4) “I try to make my romantic partner jealous when I am mad at him” were allowed to covary as they share components (Cortina, 2002) by way of similar item phrasing and thus were more likely to produce correlated error terms. No other constraints were imposed in the measurement model— factor loadings, residual variances, and correlations between latent factors and observed variables were freely estimated.

The overall model showed a poor fit when the item “I have cheated on my romantic partner because I was angry at him/her” was included in the latent factor concerning the perpetration of romantic relational aggression  $\chi^2 = 220.7$ , ( $df=31$ ,  $p<.001$ ), RMSEA= 0.092 (95% CI = 0.080 - 0.103), NFI=0.92, CFI=0.93). This may be due to a low endorsement rate ( $M=1.2$ ,  $SD=.64$ ), compared to the relational aggression latent factor, ( $M=2.1$ ,  $SD=.85$ ). Removal of this item improved model to fit to a more acceptable level,  $\chi^2 = 138.6$  ( $df=23$ ,  $p<.001$ ), RMSEA= 0.083 (95% CI = 0.070 - 0.097), NFI=0.95, CFI=0.96) (Figure 1). The final measurement model included four indicator items for victimization, four items for perpetration, and two items for an indication of possessiveness (see Appendix A).

#### *Testing the Hypothesized Model*

We began the statistical testing of our hypothesized model that romantic relational victimization will be associated with insecurity about the relationship which in turn will be associated with romantic relational aggression, increased depressive and anxious symptoms by first examining a main effect model (Model 1) that is consistent with the

psychological abuse literature— proposing possessiveness, depression, anxiety, and relational aggression as outcomes of victimization. The hypothesized model is presented in Figure 1 with ovals representing latent variables and rectangles representing measured variables. Hypothesized direct effects are denoted with connecting lines with single headed arrows. Double headed arrows indicate an expected correlation. We specified a correlation between anxiety and depression given the high degree of comorbidity between these disorders (e.g., DSM-IV-TR, 2000). Model 1 showed poor fit to the data,  $\chi^2=255.5$  ( $df=39$ ,  $p<.001$ ), RMSEA=.087 (95% CI = 0.077-0.98), NFI=.915, CFI=.920, AIC=331.52.

We then tested our hypothesized full mediation model (Model 2) in which the level of one's concern for the potential loss of their partner was treated as a mediating variable to the relationship between victimization and each outcome variable, under the hypothesis that romantic relational victimization is actually a form of jealousy induction. Although this model proved to be an improvement over Model 1, overall model fit was poor,  $\chi^2=224.7$  ( $df = 39$ ,  $p<.001$ ), RMSEA=.081 (95% CI = 0.071-0.091), NFI=0.925, CFI=0.937, AIC=300.75.

Next we examined Model 3, in which fear of losing the partner (possessiveness) acts as a full mediator to the relationship between depression and anxiety, and as a partial mediator to the link between victimization and perpetration (see Figure 2). This over-identified model (Model 3) was found to fit the data well,  $\chi^2= 168.8$  ( $df = 38$ ,  $p<.001$ ), RMSEA= 0.069 (95% CI = 0.058 - 0.079), NFI=0.944, CFI=0.956, AIC=246.77 (see Table 2).

For model comparison, Model 1 (direct effects model) was first compared to model 2 (a full mediation alternative model) using the Akaike information criterion (AIC), which was smaller for model 2, and is thus the preferred model. Finally, as model 2 (full mediation model) fit the data reasonably well, and model 1 did not, Model 2 and Model 3 (with an additional direct path between victimization and aggression) were compared using a chi-square difference test:  $\chi^2 = 55.9$  ( $df=1$ ,  $p<.01$ ), indicating that Model 3 (hypothesized model) was indeed the best fitting model; suggesting that possessiveness fully mediates the link between aggression and both depressive and anxious symptoms, and partially mediates the link between victimization and aggression. Table 3 provides a summary of fit for each model. Three Sobel tests of mediation were then conducted according to Baron and Kenny (1986). Two Sobel tests for possessiveness as mediating the links between victimization and depression,  $Z=6.69$ ,  $p<.001$ , and anxiety,  $Z=6.22$ ,  $p<.001$  confirmed these mediated relationships. One Sobel test for possessiveness as mediating the link between victimization and perpetration,  $Z=7.31$ ,  $p<.001$  confirmed possessiveness as a partial mediator, where the direct relationship between victimization and perpetration remained significant but was reduced.

As hypothesized, our model indicated a significant direct effect between romantic relational victimization and possessiveness,  $\beta = 0.51$ , which in turn directly predicted romantic relational aggression,  $\beta = 0.45$ . There was a statistically significant total effect between romantic relational victimization and romantic relational aggression,  $\beta = 0.59$ . This effect can be partitioned into the significant direct effect,  $\beta = 0.45$ ,  $p<.001$ , and

indirect effect,  $\beta = 0.23$ , suggesting that the relationship between psychological victimization and aggression is partially mediated by one's concern over the potential loss of the partner. This possessiveness also directly predicted depression,  $\beta = 0.33$ , and anxiety,  $\beta = 0.31$ .

### Discussion

The purpose of the present study was to examine a type of psychological IPV that has been shown to be used frequently in young adult's romantic relationships. We tested the hypothesis that romantic relational victimization incites a belief in the potential loss of one's romantic partner, and that this potential loss (expressed as possessiveness) is associated with jealousy-related outcomes. We hypothesized that for some, the potential loss might be met with retaliation of romantic relational aggression while for others; the abuse may be internalized and associated with increased depressive and anxious symptoms.

Results supported our initial hypothesis. Specifically, a statistically significant direct effect was found between romantic relational victimization and possessiveness. Possessiveness in turn predicted the use of relational aggression and predicted increased depressive and anxious symptoms. Furthermore, in terms of its potential mediating role, possessiveness was found to partially account for the relation between romantic relational victimization and aggression.

Our theoretical model suggests that a common response to romantic relational victimization is an expression of jealousy. This is not surprising as behaviors like flirting with another in front of one's partner are meant to be covetousness inducing acts. This



then manifests itself as depression, anxiety, or similarly aggressive behavior; the latter of which may help to explain longstanding reciprocal aggression (at least in terms of romantic relational acts) in romantic unions (Linder et al., 2002;  $r = .519$  in the present study). Although some studies have reported on the relationship between victimization and perpetration of IPV (Linder et al., 2002; Gray & Foshee, 1997; see also Stith et al., 2004 for meta-analytic review), we are unaware of any that have empirically examined why being *psychologically* victimized by one's partner might predict perpetration of the same behaviors. A failure to consider jealousy induction as a factor in mutual psychological violence can contribute to the belief that female relational aggression is solely a direct retaliatory or defensive response to male-perpetrated relational aggression, similar to a defense response that might occur when experiencing physical victimization. With this in mind, a deeper understanding of the mechanisms that potentially account for longstanding reciprocal psychological violence in romantic relationships is necessary.

Although the present study makes an important contribution to our knowledge of psychological IPV there are limitations that ought to be considered for future studies. The first limitation is that while the theoretical model implies a causal pathway from victimization to possessiveness to externalizing or internalizing jealousy outcomes, the cross-sectional nature of the study precludes any statements about directionality. Longitudinal studies examining the use and abuse of power in romantic relations are needed to identify the temporal sequences of behaviors and outcomes. For example, it is possible that anxiety predates the abuse of a romantic partner and is not, in fact, an outcome of the abuse. One of the core symptoms of anxiety disorder is irritability (DSM-

IV-TR, 2000) which has been shown to be manifested aggressively (e.g., Boylan, Vaillancourt, Boyle, & Szatmari, 2007). And so, it is possible that anxiety begets aggression which in turn begets victimization. It is also possible that for some, depression is not a true consequence of abuse but may actually be a marker of problematic social interactions (incidental model vs. causal model). For example, it has been well documented that depressed individuals hold negative schemas or attributions that lead to negative cognitive biases (e.g., Beck, 1967; 1987). Perhaps a depressed person may perceive that his/her partner is rejecting him/her or flirting with another when in fact this perception is inconsistent with reality. In the IPV literature (present study included), psychopathology is almost invariably conceptualized as an outcome of mistreatment when in effect, it could be that for some, psychopathology is an antecedent of mistreatment, as unpalatable as this hypothesis may be.

Another limitation of the present study is our examination of romantic relational aggression was limited to women. There is evidence that men are victimized at a higher rate than women when romantic relational aggression is examined (Linder et al., 2002; Lento, 2006), owing in part to the fact that when females aggress against others, their behavior typically takes the form of relational aggression (Vaillancourt, 2005). Future studies examining males' experiences with romantic relational victimization are warranted especially in light of the literature linking male sexual jealousy and extreme physical violence (e.g., Daly & Wilson, 1988). It could be that for males, the link between victimization and subsequent abuse is fully mediated by fear of losing the partner. It could also be that for men, the typical reaction to jealousy induction using

romantic relational aggression is not the internalization of the abuse, but anger, aggression and retaliation.

The extent to which the present findings extend beyond university students should be investigated. University students tend to come from higher socioeconomic background which has been shown to be a correlate of relational aggression use (e.g., lower socioeconomic status and higher use of relational aggression; Vaillancourt, Miller, Fagbemi, Cote & Tremblay, 2007). As well, studies have shown that “educationally, economically, and socially” empowered women are more protected against IPV than those who are not (see Jewkes, 2002). Couple these findings with research demonstrating that poor young men are of the greatest likelihood to kill their intimate partner over the perception of sexual infidelity (Daly & Wilson, 1988) highlights the need to replicate the present study using a community sample of men and women.

The potential for bias in reporting about one’s experiences in romantic relational aggression and mental health functioning is another limitation of this study. As mentioned above, people who are depressed tend to have biased attributions and notice threat when threat may not be perceived by others presented with similar information. This type of bias in perception may inflate association due to shared method variance. Still, it is important to acknowledge that the perception itself, as biased as it may be, is a major contributor to psychosocial functioning (Bronfenbrenner, 1979). Circumventing the issue of shared method variance may be difficult because even if clinical interviews were used to assess depressive and anxious symptoms, the clinician’s diagnosis would be based on information provided by the (biased) participant. Furthermore, assessing a

person's experience with IPV using a face-to-face interview as one approached may prove to be less accurate than using self-report methods as a recent randomized control study has shown that women prefer self-completed approaches over direct interviewing (MacMillian et al., 2006). These points notwithstanding, it is important to acknowledge the fact that the associations found in this study may be inflated due to shared method variance.

With this in mind, the importance of further exploration into the roles of variables that can act as both consequences and antecedents to abuse is clear. Mutual psychological violence is unlikely based solely on a pattern of direct response to victimization. Rather, affective outcomes to victimization should be acknowledged as consequences that may lead to a similarly aggressive response, perpetuating mutual psychological abuse in romantic relations.

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Table 1. Sample Characteristics

|                                            | <i>N</i>   | <i>Mean</i> | <i>SD</i> | $\sigma^2_x$ | <i>%</i>     |
|--------------------------------------------|------------|-------------|-----------|--------------|--------------|
| <i>Age</i>                                 | 1091       | 20          | 1.79      | 3.22         |              |
| <i>Currently dating?</i>                   | 1090       | 0.51        | 0.50      | 0.25         |              |
| <i>Yes</i>                                 | 554        |             |           |              | 50.8%        |
| <i>No</i>                                  | 536        |             |           |              | 49.2%        |
| <i>Number of Partners (Past 12 Months)</i> | 1087       | 0.92        | 0.71      | 0.50         |              |
| <i>None</i>                                | 295        |             |           |              | 27.1%        |
| <b><i>One</i></b>                          | <b>611</b> |             |           |              | <b>56.2%</b> |
| <b><i>Two +</i></b>                        | <b>181</b> |             |           |              | <b>16.7%</b> |
| <i>Faculty</i>                             | 1084       |             |           |              |              |
| <i>Social Science</i>                      | 258        |             |           |              | 23.6%        |
| <b><i>Humanities</i></b>                   | <b>212</b> |             |           |              | <b>19.4%</b> |
| <b><i>Science</i></b>                      | <b>305</b> |             |           |              | <b>28.0%</b> |
| <i>Business</i>                            | 88         |             |           |              | 8.1%         |
| <i>Other</i>                               | 221        |             |           |              | 20.3%        |

In testing the theoretical model, heterosexual females who had dated at least one male in the past 12 months were included in the analyses (indicated here in bold). Females who had not dated in the past 12 months (27.1%) were excluded.

Table 2: Intercorrelations and descriptive statistics of observed measures.

|                                                   | 1    | 2    | 3    | 4    | 5 |
|---------------------------------------------------|------|------|------|------|---|
| 1. Relational Aggression<br>Mean=2.07; SD=0.85    | 1    |      |      |      |   |
| 2. Relational Victimization<br>Mean=1.63; SD=0.78 | 0.52 | 1    |      |      |   |
| 3. Partner Jealousy<br>Mean=1.93; SD=0.91         | 0.49 | 0.44 | 1    |      |   |
| 4. Depressive Symptoms<br>Mean=13.51; SD=10.09    | 0.34 | 0.30 | 0.32 | 1    |   |
| 5. Anxiety Symptoms<br>Mean=13.78; SD=11.83       | 0.24 | 0.28 | 0.29 | 0.55 | 1 |

All correlations are statistically significant at  $p < 0.01$  (two-tailed) level. Data on included for women who have been in a romantic relationship within the past 12 months.

Table 3: Nested Model Tests of the Latent Path Structure Model Fit.

| Nested model step                | $\chi^2$ (DF) | CFI  | NFI  | RMSEA | CI 95%<br>RMSEA | AIC    |
|----------------------------------|---------------|------|------|-------|-----------------|--------|
| Model 1: Direct Outcome Model    | 255.5(39)     | .920 | .915 | .087  | .077 - .098     | 331.52 |
| Model 2: Full Mediation Model    | 224.7(39)     | .930 | .937 | .081  | .071 - .091     | 300.76 |
| Model 3: Partial Mediation Model | 168.8(38)     | .956 | .944 | .069  | .058 - .079     | 246.77 |

*Note:* CFI = comparative fit index; RMSEA = root mean square error of approximation; and NFI = normed fit index; AIC= Akaike information criterion; N=731.



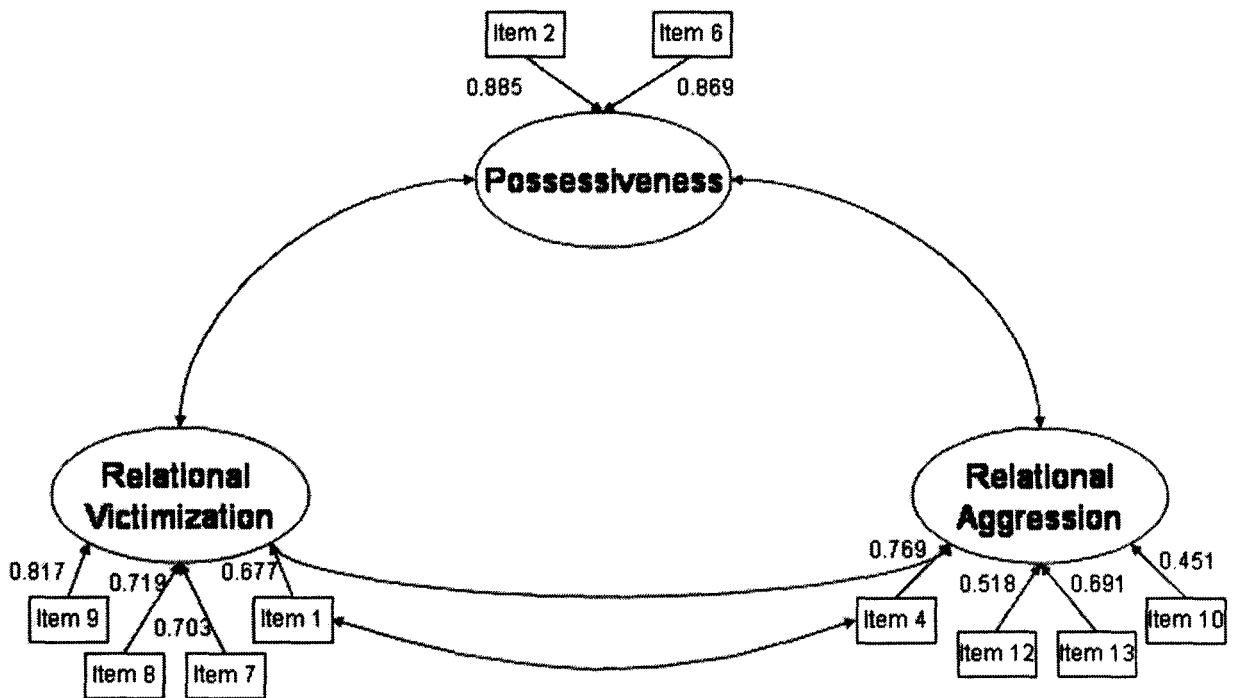


Figure 1. Confirmatory factor analysis for Morales & Crick (1998) measure of aggression and victimization. Values are standardized regression coefficients ( $\beta$ ). Solid lines indicate statistically significant paths.

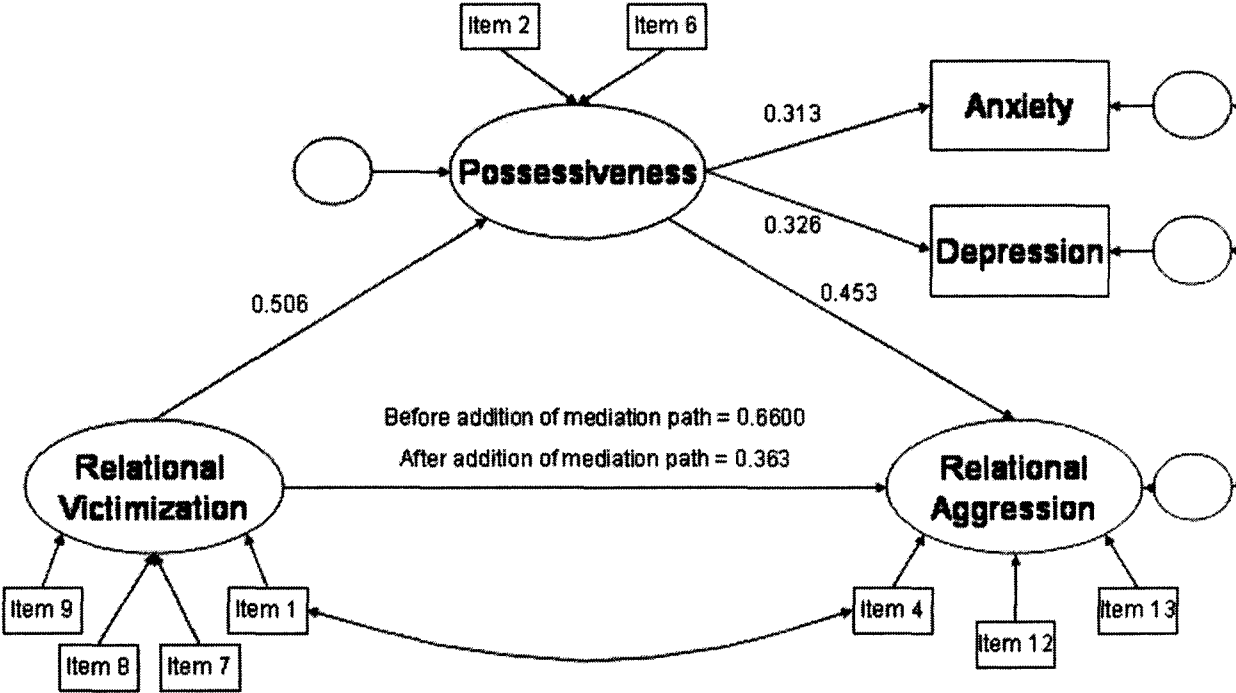


Figure 2. Latent variable path analysis for our model showing the relationship between relational victimization, relational aggression, possessiveness, anxiety and depression. Values are standardized regression coefficients ( $\beta$ ). Solid lines indicate statistically significant paths.

Appendix A: *Morales & Crick (1998) measure of romantic relational aggression*

| <i>Item</i>                                                                                                       | <i>Measure</i> |
|-------------------------------------------------------------------------------------------------------------------|----------------|
| My romantic partner tries to make me feel jealous as a way of getting back at me.                                 | Victimization  |
| My romantic partner has threatened to break up with me in order to get me to do what s/he wants.                  | Victimization  |
| My romantic partner ignores me when s/he is mad at me.                                                            | Victimization  |
| When my romantic partner wants something, s/he will ignore me until I give in.                                    | Victimization  |
| It bothers me if my romantic partner wants to spend time with his or her friends.                                 | Possessiveness |
| I get jealous if my romantic partner spends time with his/her other friends, instead of just being alone with me. | Possessiveness |
| I try to make my romantic partner jealous when I am mad at him/her.                                               | Aggression     |
| I have cheated on my romantic partner because I was angry at him/her.                                             | Aggression *   |
| I give my romantic partner the silent treatment when s/he hurts my feelings in some way.                          | Aggression     |
| If my romantic partner makes me mad, I will flirt with another person in front of him/her.                        | Aggression     |

\*Removed due to poor fit as evidenced by internal consistency and confirmatory factor analyses.

References (General Introduction)

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