

THE RETROSPECTIVE IMPACT OF RELATIONAL VICTIMIZATION AND  
ATTACHMENT QUALITY ON THE PSYCHOLOGICAL AND SOCIAL FUNCTIONING OF  
COLLEGE STUDENTS

A DISSERTATION  
SUBMITTED TO THE GRADUATE SCHOOL  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE  
DOCTOR OF PHILOSOPHY

BY

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## Abstract

Although growing evidence suggests that relational victimization is harmful to children as it occurs and shortly after, less is known about the potential long-term effects. The present study develops and validates a retrospective measure of childhood relational victimization experiences. A model is tested of the relations between childhood relational victimization experiences and early parental attachment quality on early adult psychological and social adjustment factors such as peer attachment quality, loneliness, and social anxiety, as mediated by rejection sensitivity. It has been proposed that early parental attachment quality, mediated by rejection sensitivity, may largely impact adult functioning (Downey, Khouri, & Feldman, 1997), but childhood relational victimization may also affect this psychosocial functioning. The Retrospective Relational Victimization Questionnaire (RRVQ) was developed and validated for this study to measure past relational victimization experiences. The primary study used structural equation modeling to assess a primary model of how both childhood parental attachment quality and relational victimization contribute to the experience of rejection sensitivity and in turn affects early adult functioning. A comparison is made with an alternative model which included only early parental attachment as a predictor of early adult adjustment. The RRVQ was found to be a reliable and valid measure of college students' retrospectively recalled childhood relational victimization experiences. Neither the primary nor the alternative model was found to be well-fitting; however, additional exploratory results suggest that both early parental attachment and relational victimization experiences are significantly associated with current rejection sensitivity, while early relational victimization is somewhat more associated with current adult peer attachment, loneliness, and social anxiety than is early parental attachment. Educational, clinical, and research implications are discussed.

## CHAPTER ONE-- Introduction

### The Retrospective Impact of Relational Victimization and Attachment Quality on the Psychological and Social Functioning of College Students

It seems reasonable to assume that no child or adolescent likes being rejected or hurt by her friends; indeed, consistent evidence shows that peer rejection is associated with a concurrent decrease in feelings of well-being and disrupted interpersonal functioning (Downey & Feldman, 1996). Relationally-victimized children and adolescents, who are socially excluded, isolated, and gossiped about by people they view as friends, are particularly likely to experience concurrent negative reactions (Crick & Grotpeter, 1995); not only have they been rejected by their peers, but they have also been alienated from a friend or friends in whom they had trust. Relational aggression is defined as bullying acts which inflict harm through damage or control of friendships or other relationships (Crick & Grotpeter, 1995). Crick and Grotpeter (1995) note that relational victimization seems to especially impact girls. While literature has demonstrated a link between relational victimization experiences and short-term negative consequences for the victim (Crick and Bigbee, 1998; French, Jansen, and Pidada, 2002), less is known about long-term effects. It has been found that bullying experiences in general produce long-term consequences for victims (Rivers, 2000). Bullying may include episodes of physical and verbal aggression, as well as relational aggression (Asher, Rose, & Gabriel, 2001). Investigating the further-reaching complications of relational victimization seems a logical next step. The purpose of this study was to examine the impact of retrospective relational victimization experiences and early parental attachment quality on the adjustment and functioning of college women.

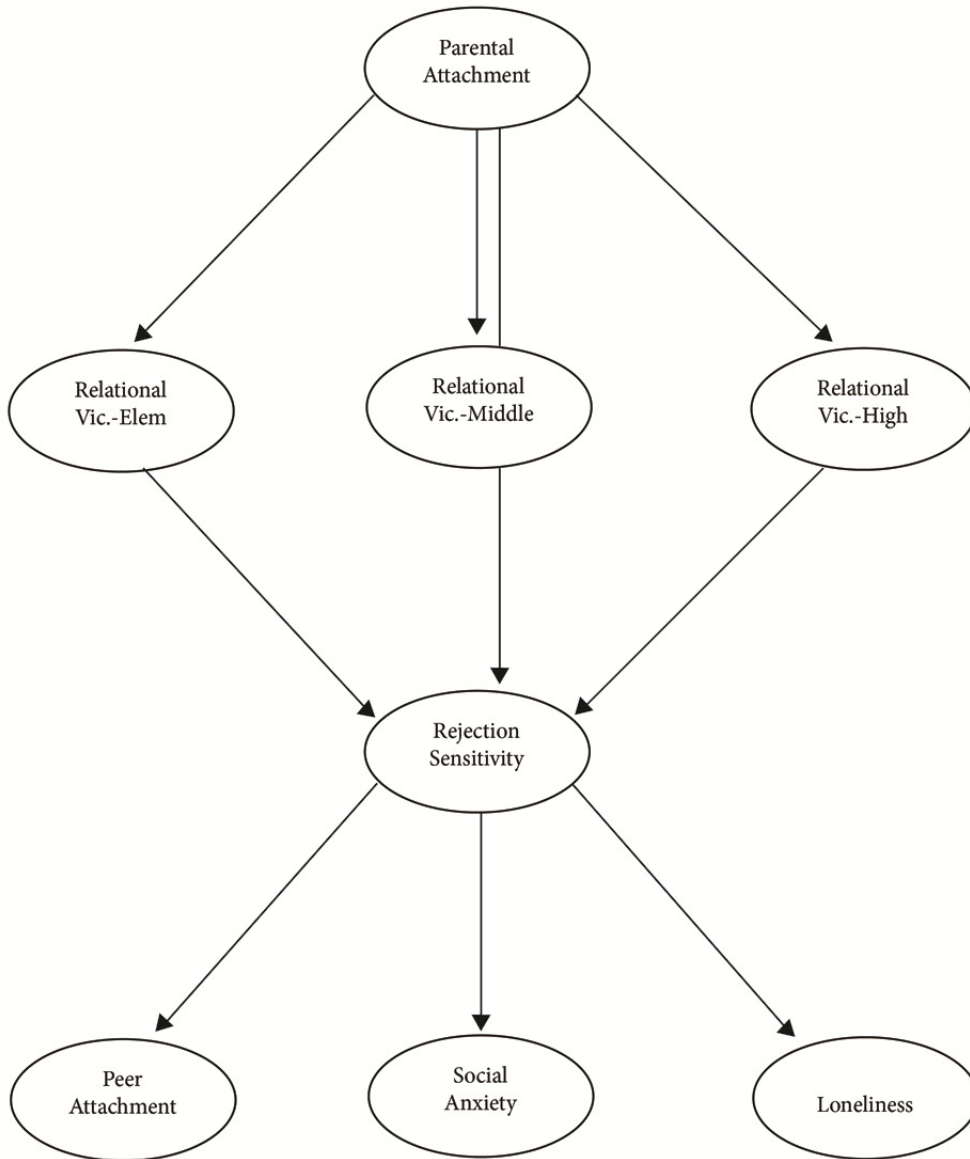
This study tested a model of how the constructs of parental attachment, relational victimization, and later adult functioning might be related. Downey, Khouri, and Feldman (1997) proposed a similar, original model which describes how parental attachment quality and

later functioning may be connected through a mediating construct called rejection sensitivity: a propensity towards readily perceiving rejection, interpreting it as such, and responding in exaggerated ways to such experiences. Poor early parental attachment is predicted to lead to difficulties in creating and maintaining healthy intimate relationships later in life (Hazen & Shaver, 1987). It may also be possible, however, that relational victimization experiences also contribute to high levels of rejection sensitivity, since this sensitivity is typically a response to repeated rejection, parental or otherwise (Romero-Canyas & Downey, 2005). Downey, Khouri, and Feldman (1997) suggest that peer rejection might be a contributing factor in their original model, although they did not include it. If this is the case, peer relationships during childhood and adolescence may be even more essential to healthy adjustment than previously realized, and should be targeted for interventions during this time. It may be beneficial to discover whether or not relational victimization is nearly as damaging as poor parental attachment experiences for individuals' long-term adjustment outcomes. It is because of this implication that it is proposed that relational victimization be added as another component that may influence adulthood functioning. Downey, Khouri, and Feldman's model will serve as a template on which this study's model is based.

### *The Proposed Model*

In the current model (Figure 1), relational victimization is proposed to contribute to rejection sensitivity beyond what is contributed by attachment quality and parental rejection, while rejection sensitivity in turn is proposed to contribute to adulthood psychological and interpersonal factors such as peer attachment, social anxiety, and loneliness. This model suggests that relational victimization experiences and parental attachment quality will be related and will concurrently predict levels of rejection sensitivity, leading to a more complex

Figure 1: *Proposed Model*



understanding of the roots of these issues. An alternative, more parsimonious model based on the original work of Downey, Khouri, and Friedman (1997; Figure 2) was also tested which does not include relational victimization as a factor, to observe which model best explains the relationships between variables. Also included were potentially important features of the relational victimization experience, such as the time in life when such experiences occurred and the perceived intensity of these experiences.

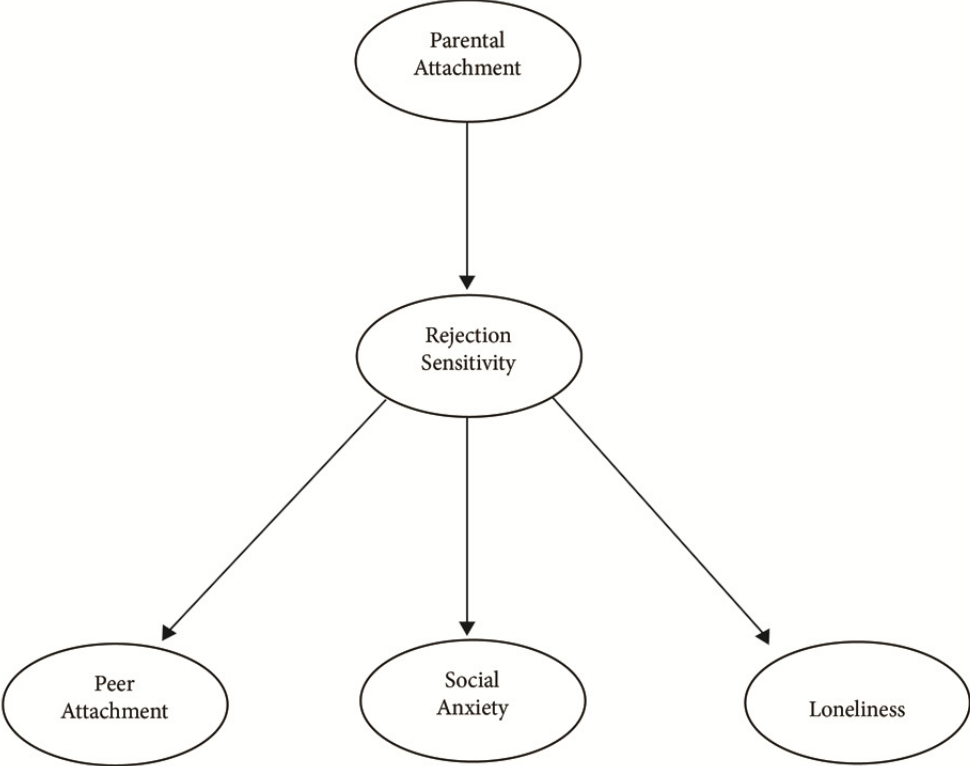
In this introduction, the various components of the model will be discussed. These include parental attachment, relational victimization (including factors of gender, developmental phase of relational victimization occurrences, and the frequency and intensity of those occurrences), rejection sensitivity, and interpersonal functioning.

#### Relational Victimization

Recent attention has been given to types of aggression that occur through the damage of peer relationships, rather than less subtle types which involve physical and verbal altercations. Crick and Grotpeter (1995) described a form of aggression which often flies under the radar of parents and schoolteachers: relational aggression. This type of aggression, different from the physical intimidation of overt aggression or the hurtful words of verbal aggression, bullies and hurts through the manipulation and damage of social relationships, which are so important to children, adolescents, and adults alike. This can take the form of, but is not limited to, the following behaviors: social exclusion from a pre-existing peer group or activity, spreading rumors, threatening to withdraw one's friendship, and threatening to alienate affection from a dating partner.

Because relational victimization involves third parties and alienates an individual from peers, rather than just from the aggressor, it may precipitate relational damage which affects the

Figure 2: *Original Model*



emotional and interpersonal functioning of the victim (Crick & Grotpeter, 1995). Victims of relational aggression appear to have many related emotional and interpersonal issues. Children and early adolescent victims have significantly more concurrent depression, loneliness, and social isolation than do non-victims, even after overt aggression victimization was taken into account (Crick and Grotpeter, 1995). Adolescents who have been relationally victimized also have been found to have more depression, antisocial personality features, and borderline personality features than those who have not been victimized, and this was shown across genders (Morales & Cullerton-Sen, in Crick et al., 2001). Relational victimization was found to be substantial in relation to children's internalizing outcomes such as depression, loneliness, and poor self-esteem. For girls, it has been associated with submissive behavior, loneliness, emotional distress, and self-restraint, and added to overt aggression in the prediction of social anxiety, while for boys it was associated with submissive behavior, loneliness, social avoidance, and emotional distress (Crick & Bigbee, 1998). While the researchers noted that aggressors are sometimes also victims, they pointed out that to a great extent, initiators and targets of aggressive acts tend to be different individuals. In general, it was noted that victims tended to be more maladjusted than non-victims (Crick & Bigbee, 1998).

While the concepts of relational aggression and victimization are fairly new ones, the behaviors that they describe are not novel. Such behaviors have been of interest to researchers for decades, but have been called by different names. Similar concepts have been studied under the name of *peer rejection*, and outcomes similar to those found for relational victimization have been noted. Social peer rejection occurs when an individual is shunned and/or abused by his or her peers; Asher, Rose, & Gabriel (2001) divide it into several categories including excommunication and stopping all relations, preventing access to a social group and involving a



third party (the three most similar to relational victimization), as well as aggression, bossiness, and ethical defiance. It has been suggested that healthy experiences with peers are not luxuries, but are absolutely needed for healthy cognitive and emotional functioning (Johnson, 1980). Accordingly, socially rejected children would be likely to have significant adjustment problems. Literature has provided some evidence for this. Peer rejection over time appears to figure prominently in the case of several internalizing emotional disorders, such as depression and social anxiety (Joiner, 1999). There have also been connections found between peer rejection in adolescence and problems such as low self-esteem (Storch, Brassard, & Masia, 2003) and a lack of social skills (Wolpaw, 2003). Such negative experiences with peers tend to affect people both personally and socially.

#### *Gender and Relational Victimization*

Relational aggression and victimization were originally proposed to be the “missing link” in the study of aggression in girls; it was proposed that when relational aggression was taken into account, girls would actually be shown to be just as aggressive as boys (Crick & Grotpeter, 1995). While boys are socialized to have peer relationship themes centering around physical dominance and athletic prowess, girls are often socialized to be more concerned with forming intimate connections among friends and fostering closeness (Block, 1983). Females also tend to use more relationship-oriented self-definitions than boys (Noddings, 1983). Because of this, physical aggression would be expected to be more prevalent among boys and relational aggression more among girls. Reports of whether such strong gender differences actually exist have been mixed. Studies on relational aggression and victimization typically include both boys and girls; many which report gender differences do tend to support girls in the positions of most frequent aggressors and victims (Crick, Bigbee, & Howes, 1996; French, Jansen, & Pidada,

2002). Although the negative outcomes (such as depression and loneliness) of such victimization experiences may occur in all children, the results may be stronger and more pervasive for girls than they are for boys (Crick & Grotpeter, 1995). More evidence indicates that there are actually few gender differences in the frequency of relational victimization experiences reported (Archer, 2004; Archer & Coyne, 2005); however, it is possible that girls may perceive the experiences as more hurtful, and have more negative effects from them (Goldstein and Tisak, 2004; Prinstein, Boergers, & Vernberg, 2001; Rys and Bear, 1997). It may be the case that although relational victimization is not necessarily a greater problem for girls in frequency of occurrence, it has greater intensity for girls than boys, producing a greater negative impact on their relationships and lives. Gender was examined as a factor in the current study, to determine if girls and women are affected by relational victimization differently than boys and men.

#### *Developmental Phases of Relational Victimization Occurrences*

Relational victimization experiences have been studied at virtually every phase of individuals' lives, including early and middle childhood, adolescence, and adulthood. The current study attempted to capture pre-adulthood experiences (early childhood, middle childhood, and adolescence) to see if this has differential effects on early adult interpersonal functioning. Relational aggression experiences may be especially relevant to adolescents. Since adolescents begin to spend more time with and place greater importance on their peers than at earlier stages of social development, relational forms of aggression may have greater opportunity in which to occur, and hence appear as more salient (Parker, Rubin, Price, & DeRosier, 1995). Because friendships during adolescence usually are associated with an increase in self-

disclosure, there also exists a greater opportunity to use more private information for social aggression (Parker et al., 1995).

Also, since there is a typical growth in cognitive and social areas during adolescence, this aggression may be a byproduct of this increasing importance of social status and acceptance in peer groups, as well as the challenge of effectively navigating these peer relationships and resolving interpersonal conflict (Yoon, Barton, & Taiariol, 2004). As relationships grow more complex, so do the relational victimization strategies that accompany them (Crick et al., 2001). In fact, while some work shows that both physical and relational forms of aggression seem both to decrease over time when measured by parent and teacher reports, this less likely indicates an actual decrease of aggressive behaviors among adolescents, and more likely may indicate an increase in more sophisticated, subtle forms of relational aggression that go largely undetected by teachers and parents (Park, Essex, Zahn-Waxler, Armstrong, Klein, & Goldsmith, 2005). Crick, Bigbee, and Howes (1996) found that fifth and sixth grade students were far more likely to use relational aggression than were third and fourth graders, and are indeed more likely to use relational aggression than any other type of aggression. For these reasons, it was expected that experiences in adolescence would prove to be more strongly related to later interpersonal problems than those that take place during early childhood.

As mentioned previously, relational aggression and victimization certainly occur in most every age group, although typically in different forms. In fact, relational types of bullying have been demonstrated even in preschool-aged children (Crick, Casas, & Ku, 1999). Relational aggression between peers in early childhood tends to be more obvious than during other developmental periods, and more often a response to the momentary situation, rather than events that took place in the past (Crick et al., 2001). Because of this, these experiences appear more

simplistic. Evidence exists that relational victimization during early childhood is related to social and psychological adjustment problems; Crick, Casas, and Ku found that relational victimization in young children was associated with poor peer relationships, internalizing problems, and a lack of prosocial skills. Because of this early damage to adjustment and peer relationships, it may be more likely that young children will continue to struggle with making friends and regulating emotions, and will demonstrate more relational issues and loneliness later in life. It was predicted that early relational victimization experiences would be moderately related to more adjustment problems in early adulthood.

In middle childhood, victimizing behaviors become more sophisticated as children become more socially skilled; they also tend to be more indirect (Crick, Casas, & Nelson, 2002). Like in early childhood, the experience of being victimized has been related to negative concurrent outcomes such as submissiveness, loneliness, and emotional distress, among other things (Crick & Bigbee, 1998). Initial longitudinal findings suggest that relational victimization in middle childhood predicts peer rejection for up to one year after the experience occurred (Crick & Cullerton-Sen, 1999). Because of the established relationship between victimization in middle childhood and later problems, it was predicted that relational victimization experiences in middle childhood would be more damaging than those in early childhood, although not so much as those in adolescence.

#### *Relational Victimization: Frequency and Intensity*

A unique characteristic of this study is the attention given not only to the frequency of relational victimization experiences, but also to the perceived impact of the intensity of these events. This differentiation was included because of evidence suggesting that the perceived intensity or hurtfulness of the rejection experience may predict different outcomes than the mere

frequency with which such experiences occurred; rejected children who do not see themselves as rejected are often better adjusted than those who do, regardless of the frequency with which the events occurred (Schmuck, 1966). This may suggest that a few relational victimization experiences that were very memorable, salient, and intense might lead to longer-lasting negative outcomes than a higher frequency of less intense experiences. Evidence may be drawn from literature assessing responses to and outcomes of events that may be considered traumatic. It has been suggested that although trauma is not always part of a child abuse experience, it may become so if the victim perceives the event as having a highly negative valence, and if she perceives herself as having very little control of the situation (Carlson, Furby, Armstrong, & Shlaes, 1997). Based on this logic, it may be predicted that a victim who feels in control of the situation and does not perceive it as particularly intense or traumatic will be less likely to suffer long-lasting consequences, even if the frequency of relational victimization experiences is high. On the other hand, a victim who feels out of control and overwhelmed by the intensity of the experience might be more likely to carry it with her into adulthood, even if the frequency of the experience was low.

#### Parental Attachment and Relational Victimization

Attachment theory posits the following: as children grow, they develop mental models of themselves and of their relationships, based on their attachment quality with their parents, which influence their future relationships (Bowlby, 1969, 1973). The quality of these models depends on how well the child's caretaker meets his or her needs. When the caretaker meets the child's needs sensitively and consistently, the child will develop a secure working model for attachment, coming to expect that others will be accepting and supportive of her. If a child's needs are met with rejection, the child may an insecure working model, characterized by doubts and anxieties

about others. Once this style is in place, it cannot be modified easily (Schneider, Atkinson, & Tardif, 2001).

There is much evidence that suggests attachment styles carried into other relationships have notable interpersonal effects. Securely-attached young children have been found to be more socially competent, sociable, and prosocial than insecurely-attached peers (Vondra, Shaw, Swearington, Cohen, & Owens, 2001; Kestenbaum, Farber, & Sroufe, 1989). In adolescence, such children also tend to have more mature peer and romantic relationships (Carlson, Sroufe, & Egeland, 2004). Parental attachment styles may have direct effects on individuals' levels of relationship anxiety, as well as more indirect effects on their levels of loneliness and discomfort with closeness in relationships (Feeney, 2006). Similarly, O'Connor, Perna, Harrison, and Poulter (2005) found that as parental attachment history improved, relationship satisfaction improved in couples—this effect persisted as long as both members of the couple had secure attachment histories. If one partner had insecure attachment, the positive effects were not present. Adding to this evidence for connection between parental attachment and the success of later relationships is the work of Banse (2004), who found that in general, secure parental attachment led to higher levels of marital satisfaction, while insecure styles predicted the opposite trend. It was again noted, however, that these effects had much to do with the attachment styles of *both* partners. It has been found that insecure attachment predicts low levels of relationship satisfaction in adulthood (Jones & Cunningham, 1996). Parental attachment is much more strongly related to friendships with peers than it is to relations to those who are not good friends (Schneider, Atkinson, & Tardif, 2001). The most well-adjusted early adults were the ones who were high on both parent *and* peer attachment, suggesting a synergy between the two; peer attachments alone did not produce the same level of positive effects (Laible, Carlo, &

Rafaelli, 2000). Blain, Thompson, & Wiffen (1993) found that people with highly secure parental attachment perceived greater social support from both family *and* friends, indicating a spillover effect from the secure attachment. From this evidence, it may be seen how early parental attachment has far-reaching ramifications for later relationships in an individual's life.

### *The Relation between Parental Attachment and Peer Experiences*

It is very likely that parental attachment quality and later peer experiences are connected. Wood and his colleagues found that preschool children who are securely-attached appear to “carry on” their attachment styles into school; they tend to develop more friendships and be more accepted by their peers than their more insecurely-attached counterparts (Wood, Emerson, & Cohen, 2004). On the contrary, insecurely-attached children appear less socially skilled and are more likely to be rejected. Also, friendship dyads that involve at least one insecurely-attached child tend to be more critical, less responsive, and less companionate than dyads with two securely-attached children (Kerns, Klepac, & Cole, 1996). What this suggests is that more securely-attached children are better equipped to deal with interpersonal relationships because they have had the experience of positive relationships; they expect others to engage in behaviors that promote them, while those with insecure attachment are likely to see others as untrustworthy and expect negative interactions with them.

Another possibility exists that those with secure attachment quality will experience relational victimization experiences differently than those with insecure or anxious attachment styles. It has been found that children with warm, accepting mothers who are later rejected tend to have fewer negative outcomes than their insecurely-attached peers (Patterson, Cohn, & Kao, 1989). These results might be explained by how a child with a secure style would, theoretically, have a working model of herself as competent and of others as accepting and supportive

(Bowlby, 1969). She would be more likely to be accepted by peers because, since she views herself as worthy of love and support, she will be more likely to engage in social behaviors which bring about positive reactions and friendships from peers. If rejected by peers, this person would likely use positive coping techniques: for example, turn to others for support. By contrast, a child with insecure attachment would be less likely to have high interpersonal efficacy and good interpersonal coping (Bowlby, 1973), and would be more likely to label relational victimization experiences as intense and traumatic. By assessing both frequency and intensity of relational victimization experiences, it may be better understood if the perception of the intensity of the event indeed impacts the outcomes associated with the event, regardless of the frequency experienced, and if either frequency or intensity of the event is affected by the parental attachment quality of the child.

The preventative effect of secure attachment bodes well for those who have it, but what happens when, for whatever reason, these same people are rejected by their peers? It has been found that a secure relationship with one's mother serves as a protective factor for peer rejection. Children whose mothers were observed to be warm and accepting in interaction with them were rated by teachers as having fewer behavior problems than rejected children whose mothers were low in warmth. This effect was not otherwise explained by intelligence, attractiveness, or temperament; attachment to the mother had a greater impact on adjustment in the presence of risk than the absence of risk (Patterson, Cohn, & Kao, 1989). There are a multitude of reasons that children may be rejected, despite their attachment level or social skills; however, it appears that even when this occurs, the securely-attached child will have skills to deal with it, and will not resort to acting out or withdrawing. Secure attachment is unlikely to completely ameliorate the experience of peer rejection, but it may serve as a buffer. In the current study, it was



expected that parental attachment quality would contribute to the relational victimization experience, as well as to adjustment issues in early adulthood (Figure 1).

### *Rejection Sensitivity and its Interpersonal Consequences*

Rejection sensitivity is a unique construct because it includes components of both attachment theory and cognitive-affective information processing approaches (Downey & Feldman, 1996). As previously discussed, attachment is theorized to result in internal working models about the self and others; when one is securely-attached, others are expected to be trustworthy, dependable, and *good*, while one with insecure attachment will expect others to be hurtful and will view them with suspicion. Here, Downey and Feldman suggest, lies the root of rejection sensitivity. Those who have low sensitivity have a model in which they expect their needs to be satisfied by others; those who have high sensitivity tend to have a working model in which it is expected that their needs will be rejected.

Cognitive-affective information processing theory (Bandura, 1986; Crick & Dodge, 1994) describes how an insecure model of attachment might lead to specific rejection-sensitive thoughts and feelings. Downey and Feldman (1996) demonstrate how insecure attachment models lead to expectations of probable rejection; this in turn leads to placing a very high value on avoiding such rejection, which leads to anticipatory anxiety when in vulnerable situations. This leads to hypervigilance for signs of rejection, and ambiguous clues are readily perceived as such. This perceived rejection leads to common feelings of anger, sadness, jealousy, etc. It can be seen here how the cognitions, based on the rejection-sensitive model, may lead to inaccurate or exaggerated perceptions of information, which in turn leads to negative feelings.

Rejection sensitivity (RS) may have applied effects on the interpersonal relationships of individuals. Those identified as high in rejection sensitivity readily construe intentional rejection

from ambiguous behavior from others (when told that a potential partner in the experiment did not wish to continue), while those low in the construct do not (Downey & Feldman, 1996). The same authors found assessments of anxious expectancies of rejection predicted which people would attribute hurtful intent to their romantic partners' behavior during conflict, and that it also predicted those who would feel more insecure and dissatisfied with their relationships. Not only did it affect the high RS person herself, but the partners of those with high RS also reported feeling less satisfied with the relationship. It is likely the case that rejection expectations lead people to behave in ways that actually *elicit* rejection, hence becoming a self-fulfilling prophecy (Downey, Freitas, Michaelis, & Khouri, 1998). Downey et al. (1998) found that RS predicted relationship breakup for both men and women, no matter what their satisfaction and commitment level was previously. Sandstrom, Cillessen, and Eisenhower (2003) examined the internalizing and externalizing problems of elementary school children who were classified as either high RS or low RS, and found that high RS was associated with more of both issues (such as acting out or withdrawing). Depression and anxiety are not necessarily caused by rejection sensitivity, but can be mediated by it; high RS women were not generally more depressed or anxious than others when assessed, or when they failed to reach an academic goal, but became significantly more so when they experienced a partner-initiated breakup (Ayduk, Downey, & Kim, 2001). It appears that rejection sensitivity can not only contribute to relational difficulties, but can also enhance negative reactions to them. It was expected that rejection sensitivity would be related to early adult interpersonal problems (Figure 1).

The latter part of the current model (Figure 1) sought to examine the relationship between rejection sensitivity and adult interpersonal problems. Here, these interpersonal problems were operationalized as poor peer attachment, loneliness, and social anxiety. These constructs were

chosen for several reasons: Firstly, they are three outcomes theorized by the original model proposed by Downey et al. (1996). Secondly, they are all interpersonal outcomes shared in common by much of the literature on both parental attachment and relational victimization. Each is representative of a relational problem which can impact both peer and romantic relationships in adulthood, and hence are descriptive of the consequences of rejection sensitivity. It has been demonstrated that those who are poorly attached often have difficulty attaching to others later in life and find their relationships unsatisfactory (Carnelley, Pietromonaco, & Jaffe, 1994; Collins & Read, 1990), while those high in rejection sensitivity also tend to report poorer-quality relationships (Downey & Feldman, 1996). Social anxiety may arise from the rejection sensitive because of the anxious expectations about being rejected by acquaintances, friends and partners (Downey & Feldman, 1996). Finally, loneliness was predicted to arise from rejection sensitivity because of the tendency of those high in rejection sensitivity to avoid and withdraw from relationships (Downey & Feldman, 1996).

### Models and Research Hypotheses

To test the proposed models, structural equation modeling (SEM) was used. SEM is often used in counseling psychology research to compare proposed sets of relationships to those that are actually observed (for a comprehensive description of the use of SEM, see Martens, 2005). Competing models can be compared to determine which has the best fit to the obtained data. In this case, the primary model was the following: literature as previously reviewed suggests that parental attachment and relational victimization at different phases of life would be related to rejection sensitivity, which in turn would be related to peer attachment, social anxiety, and loneliness. A relationship was also expected between early parental attachment and relational victimization. Additionally, gender was examined as a factor in relational

victimization to determine if males and females in this sample experienced it differently in terms of frequency and/or intensity.

An alternative model was also tested. This model, based on original model of Downey et al. (1997), did not include the construct of relational victimization. Downey et al. proposed that early parental experiences were of primary importance in predicting levels of rejection sensitivity; this more parsimonious model removed the factor of peer experiences to help test the hypotheses about whether or not such experiences actually contribute to rejection sensitivity. If the former, more complex model indeed demonstrated more variance is accounted for than in the simpler model, this would support the hypothesis that such experiences are associated with later adjustment difficulties. All other paths remained the same in the alternative model.

#### *Research Hypotheses*

It was hypothesized that early parental attachment quality and relational victimization experiences would contribute to rejection sensitivity. There is evidence to suggest that those who are insecurely-attached as children may experience interpersonal problems into late adolescence and adulthood (Hazen & Shaver, 1994; Kobak & Sceerey, 1988). As previously outlined above, these outcomes may be mediated by a *rejection sensitivity* which is most obviously brought about by rejecting parenting, which is characteristic of insecurely-attached children (Downey et al., 1997). However, the authors also suggested that other factors may be involved in the development of rejection sensitivity, most notably the factor of peer rejection. While parental rejection is certainly hurtful to children and may lead to the expectation of further rejection, it is likely that rejection by peers has a similar effect. Relational victimization (Crick & Grotpeter, 1995) occurs when an individual is excluded, isolated, and alienated from her peer group, and hence personifies peer rejection. It was hypothesized that both parental attachment

quality *and* frequency and intensity of relational victimization experienced in childhood/adolescence would contribute to the experience of adult rejection sensitivity.

It was also hypothesized that the frequency and intensity of past relational victimization experiences would contribute to social adjustment in adulthood (as operationalized by peer attachment, loneliness, and social anxiety), over and above what was associated with parental attachment. As discussed above, parental attachment quality has already been shown to be related to social adjustment into adulthood. However, if peer relationships are also important to individuals as they develop into social beings, it stands to reason that these relationships will also contribute to future social adjustment (or maladjustment, as the case may be). It appears those who experience substantial relational victimization have many internalizing symptoms (Prinstein, Boergers, and Vernberg, 2001). It has already been demonstrated that victims of relational aggression tend to be lonelier and more socially isolated than their peers (Crick & Grotpeter, 1995), and also have more social anxiety and avoidance (Crick & Bigbee, 1998). It was predicted that relational victimization, when combined with early parental attachment quality, would contribute to social adjustment factors in adulthood such as loneliness, social anxiety, and peer attachment above and beyond what parental attachment alone predicted.

Additionally, it was hypothesized that parental attachment would be related to the experience of relational victimization. If relational victimization is conceptualized as a peer rejection experience, literature demonstrates how attachment, particularly to the mother, may prevent not the *experience* of being rejected, but the social damage that this rejection otherwise appears to cause (Cohn, 1990; Patterson, Cohn, & Kao, 1989). It was hypothesized that in this case, relational victimization experiences would be perceived as less intense for those who were

securely-attached in childhood, although the frequency of relational victimization would likely not differ between those who are securely and insecurely-attached.

It was hypothesized that the phase of life in which relational victimization is experienced would contribute to differing amounts of rejection sensitivity. Because adolescence appears to be a particularly sensitive and important time for social development and peer relationships (as discussed previously), it was hypothesized that relational victimization experience during this time would be perceived as particularly intense and would contribute to greater amounts of rejection sensitivity than those experienced during early or middle childhood.

Finally, it was hypothesized that overall, a model relating early childhood relationship experiences and later psychosocial adjustment would be statistically better-fitting if it included relational victimization experiences and parental attachment, rather than parental attachment alone. Since peer experiences are influential in children's development (as explained above, and elaborated in the next chapter), it was expected that including information about them would provide a better and more thorough explanation of how early relationships shape individuals' adjustment in adulthood.

## CHAPTER TWO—Literature Review

This chapter reviews literature relating to relational victimization, attachment theory, rejection sensitivity, and their outcomes. In recent decades, greater attention has been given to the problem of relational aggression, especially in childhood. Typically occurring among peer groups and often (but not always) attributed as a “female” aggressive strategy, relational aggression includes acts of ignoring and excluding individuals, gossiping, manipulating social structure, and in general damaging important relationships with the intent to harm (Crick & Grotpeter, 1995). Peer relationships are especially important to school-aged children (McDougall et al., 2001), who begin to spend less time with their families as they age and begin to rely more on friends for companionship and social support; because of this, being relationally victimized may be particularly upsetting and hurtful to these children.

General bullying research has demonstrated that peer abuse and rejection has numerous negative effects for its victims, including both internalizing and externalizing problems (Olweus, 1978, 1984, 1991, 1992, & 1993; Smokowski & Kopasz, 2005; Hugh-Jones & Smith, 1999; McNamara & McNamara, 1997); relational aggression is a more recently identified problem, but most evidence points to this type of aggression being as or more harmful to children than its physical or verbal counterparts (Storch, Brassard, & Masia-Warner, 2003; Storch, Masia-Warner, Crisp, & Klein, 2005; Siegel, La Greca, & Harrison, 2008). Outcome studies have linked relational victimization with the concurrent experiences of loneliness, depression, and social anxiety (Crick & Grotpeter, 1995; Crick & Bigbee, 1998; Prinstein, Boergers, & Vernberg, 2001). A few studies have demonstrated a short-term prospective link between victimization and future adjustment problems for up to two years after original occurrence

(Parker & Asher, 1987; Storch, Brassard, & Masia-Warner, 2003; Siegel, La Greca, & Harrison, 2008), suggesting some predictive power. The new frontier of relational victimization research is establishing evidence of long-term effects (Dempsey & Storch, 2008); could childhood relational victimization experiences inflict relational damage that lasts into adulthood?

To understand relational victimization and the potential for transmission of effects from childhood to adulthood, an understanding of underlying theory may be helpful. Attachment theory, as explained and popularized by Bowlby (1958), purports that children create working models of others based on their experiences with early caregivers. These working models are carried through childhood and into adulthood, and they operate as schemas (mental representations) for what to expect in interpersonal situations and in relationships. If the internal working model includes a representation of others as rejecting and untrustworthy, problems relating to others will likely result. In this manner, parental attachment may influence peer relationships in positive or negative ways (such as being more susceptible to and/or hurt by relational victimization experiences), and contribute to interpersonal adjustment. Peer relationships are also conceptualized as attachment experiences; therefore, it can be surmised that parental experiences and peer experiences may both have implications for both short- and long-term psychosocial adjustment and functioning.

Internal working models of attachment and how they function may be better understood through social information-processing theory, which is concerned with how individuals encode, interpret, and make decisions to respond to social cues (Crick & Dodge, 1996). According to theory, a person's tendencies for certain thought processes may affect perceptions of other's intent, interpretation of other's behavior, and reactions to that behavior; if the tendencies are negatively biased (as they tend to be in individuals with insecure attachment styles), a person



might be more inclined to interpret relationally aggressive intent and respond in exaggerated or unhelpful ways that may perpetuate the relational victimization experience. Downey and Feldman (1996) described these cognitive tendencies as rejection sensitivity, and explained how it may be an important factor in how rejection is experienced and the outcomes that may result from it.

Attachment theory and social information-processing theory both influenced the research of Downey, Khouri, and Feldman (1997), who proposed that early parental rejection influences the development of rejection-sensitive tendencies, which in turn contributes to interpersonal adjustment problems. In this model, attachment styles contribute to fundamental differences in children's cognitions in regards to interpersonal experiences; a change that impacts children's ability to relate to others throughout their lifetimes. Poor attachment may exacerbate a predisposition towards readily perceiving and reacting to rejection. Rejection sensitivity is then considered a mediating factor between parental maltreatment and impaired functioning. Evidence has indicated that rejection-sensitive children have more problems with interpersonal relationships, internalizing issues, and externalizing issues (Downey et al., 1998; Downey, Khouri, & Feldman, 1997; London et al, 2007), regardless of their attachment history.

Evidence indicates that early relational victimization, as well as early parental attachment problems, influence children's interpersonal functioning. Based on this evidence, it was proposed in the present study that peer relational victimization, as well as early parental attachment, may contribute to higher levels of rejection sensitivity, and therefore to the resulting outcomes in adulthood. The goal of the present study was to discover if a structural model that includes relational victimization as a contributor to rejection sensitivity is superior to one based on Downey, Khouri, and Feldman's (1997) model, which includes only parental rejection as a

contributor. By comparing these models, it may be possible to better understand the legacy of childhood maltreatment in general, as well as address the need for a greater body of knowledge regarding the long-term effects of relational victimization.

This chapter will review literature relating to the constructs within the models described above: parental attachment, relational victimization, and rejection sensitivity. Evidence of their interrelationships and associated outcomes will be discussed, to lend credence to the models tested in the present study: the primary model, which proposes that early parental attachment and relational victimization will contribute to adult levels of loneliness, peer attachment, and social anxiety as mediated by rejection sensitivity, and the alternative model, which proposes that that only early parental attachment will contribute to these later psychosocial adjustment constructs, as mediated by rejection sensitivity. Previous research will provide a theoretical framework for the proposed models and provide some predictive information for expected outcomes in the present study.

### *Attachment Theory*

The model of early rejection, rejection sensitivity, and its later effects that was proposed by Downey, Khouri, and Feldman (1997), as well as the one proposed for the present study which includes relational victimization, rely heavily on attachment theory. Attachment theory was developed by Bowlby (1958) to explain the nature and importance of parent-child relationships, and it has evolved over time to explain how these early bonds affect children's functioning and ability to attach to other individuals through their lifespan (Hazan & Shaver, 1987; Karen, 1998; Fraley & Shaver, 2000; Johnson, 2008). This section will review literature on the background of attachment theory, outcomes associated with insecure attachment, support for the existence of attachment relationships beyond parent/child ones, and implications for peer

relationships. Support will be provided for the existence of attachment relationships and their transmission through childhood and into adulthood.

In Bowlby's theory of attachment, a child develops working models of herself and relationships in general based on her first experience with a primary caregiver (Bowlby, 1958, 1982). The degree of support, protection, and availability provided by the caregiver will influence the child's perception of whether or not relationships are safe and secure. From infancy to adulthood, these working models will affect how the person views other people and how she will approach and interact within the relationships they form.

Ainsworth and her colleagues (1965, 1978) additionally explored attachment theory and classified infants with differing styles of responding in a strange situation as secure, anxious-resistant, anxious-avoidant, and disorganized-disoriented. The styles include infant expectation about how the parent (in this case, the mother) will respond, fitting with Bowlby's (1958, 1982) concept of internal working models. When the original attachment relationship is characteristically symmetrical, cooperative, reciprocal, and mutually trusting, it implies security (Ainsworth, 1989). In an attachment relationship where the trust bond is damaged, inconsistent, or not present, an insecure style is developed.

The hypothesis that insecure attachment begins with early parental rejection and contributes to maladjustment in children is well-supported (Ainsworth et al., 1978; Egeland & Sroufe, 1981; Schneider-Rosen et al., 1985; Cichetti & Barnett, 1991; Vivona, 2000; Burgess, Marshall, Rubin, & Fox, 2003; Anhalt & Morris, 2008) and demonstrates insecurely-attached children are more prone to aggression, negative affect, and maladjustment in general. Conversely, secure attachment predicts higher social competence, reciprocity, and positive affect in children (Pastor, 1981; Cohn, 1990; Kerns et al., 1996; Fagot, 1997; Simons, Paternite, &

Shore, 2001; Rubin et al., 2004). This evidence consistently demonstrates the existence of differing styles of parent-child relationships and differential, short-term outcomes in the securely and insecurely-attached. Because interpersonal styles are clearly affected, it stands to reason that relationships beyond parental ones will also be influenced by early attachment style.

Ainsworth (1989) was clear that although her primary and initial approach focused on infants and their mothers, caregiving systems that give rise to attachment styles have implications past infancy and the parent-child relationship. A deficiency in caretaking may well adversely affect future interpersonal relationships (Kobak & Sceery, 1988). This includes relationships with peers. Empirical evidence tends to demonstrate that insecurely-attached children have greater difficulties with relationships with peers and forming enduring bonds (Cohn, 1990; Booth, Rose-Krasnor, & Rubin, 1991; Easterbrooks, Davidson, & Chazan, 1993).

The stability of the attachment styles, and the issues that result from them, are apparent in research investigating attachment outcomes for older individuals as well. Several studies suggest that early attachment contributes to the emotional and interpersonal experiences of college students. Kobak and Sceery (1988) found that students classified by self-report measures as having insecure attachment were less ego-resilient, more anxious, more hostile, and more distressed than their securely-attached counterparts. When Bradford and Lyddon (1993) investigated the relationship of parental attachment to perceived psychological distress and relationship satisfaction in college students, results indicated that parental attachment accounted for 20% of the variance in distress (although it did not significantly impact relationship satisfaction). These results point to importance of secure bonds and parental support to college students' adjustment and interpersonal lives, and support the theory that attachment influences both internal and social experiences beyond childhood. Adding empirical evidence to the role of

attachment in the psychological and interpersonal functioning of college students, Wiseman, Maysseless, & Sharabany (2005) tested a model of attachment and loneliness, proposing that the quality of early parental bonding would be predictive of how lonely the students would feel during their transition to college. As hypothesized, care was significantly and directly related to the experience of loneliness. Early parental care had significant influence on the students' tendencies to socialize and anticipate positive or negative responses in their new college interactions. Securely-attached students were more likely to engage in new relationships and find satisfaction with them, while insecurely-attached students avoided relationships or found themselves feeling lonely in spite of them.

The persistence of attachment quality may also affect romantic relationships, which was most notably investigated in a classic study by Hazen and Shaver (1989). The authors examined empirical links between attachment styles and romantic relationships and found that participants of different styles differed significantly in their experience of romantic relationships; secure individuals' relationships were more happy and trusting, as well as longer-lasting. The relationships of avoidant individuals were more jealous, more emotionally-labile, and fearful, while those of anxious/ambivalent individuals tended to be more obsessive, with greater experiences of highs and lows. Adults with insecure attachment styles were lonelier and less satisfied with their romantic relationships. Other studies of attachment's role in romantic relationships have indicated a positive and predictive link between the two when relationship quality is defined by resolution of conflict in a laboratory setting (Cohn et al., 1992; Creasey, 2002; Paley et al, 1999; Treboux et al., 2004), but not when relationship quality and satisfaction are determined by self-report (Cohn et al, 1992; Wampler et al., 2003). Others have found

attachment to be predictive of self-reports when prior levels of interpersonal functioning are controlled (Holland & Roisman, 2010).

Taken as a whole, these studies provide support for Bowlby and Ainsworth's assertions that attachment styles are pervasive throughout the lifespan, and have significant impact on the way individuals think about, create expectations for, and participate in other relationships. It would be expected that with early parental attachment affecting a wide variety of both psychological and interpersonal adjustment issues, that peer relationships would also be influenced. The following section will review literature pertaining specifically to the associations between elements of early parental attachment and childhood peer relationships.

#### *Attachment and Peer Relationships in Childhood*

The present study is concerned with how (and if) early parental attachment impacts children's peer victimization experiences, and how parent and peer experiences may concurrently predict maladjustment outcomes. Evidence indicates that parental attachment styles tend to influence peer experiences in predictable ways (Schneider, Atkinson, & Tardif, 2001), including predicting peer attachment (Wood, Emmerson, & Cowan, 2004; Laible, Carlo, & Raffaelli, 2000), aggression and bullying (Nelson & Crick, 2002; Dykas, Ziv, & Cassidy, 2008), and victimization and rejection (Wood, Emmerson, & Cowan, 2004; Cowan & Cowan, 2004, Dykas, Ziv, & Cassidy, 2008). The following studies illustrate the typical associations found between parental attachment styles and later peer relationships.

To support the general assumption that early parental attachment influences the development and maintenance of peer relationships, Schneider, Atkinson, and Tardif (2001) performed a meta-analysis of 63 studies examining the connection of parent/child attachment styles to children's peer relations (which, depending on the study, included children's

perceptions of social support and friendship quality, peer nominations of accepted or rejected peers, or adult observation/report of children's interactions with peers) to identify both the strength of the potential relationship and also possible moderating effects. The average effect size for the relationship between attachment style and peer relationship outcome/quality was small to moderate, with no difference between concurrent and longitudinal studies. This was considered to be evidence for the predictive power of attachment theory on peer relationships. The authors pointed out that effect sizes tended to be particularly high in atypical samples, such as bullied children, or clinical samples. They called for additional research with such samples, as results pointed towards attachment bonds being especially crucial for the peer relations of children experiencing psychological distress.

One such group of "distressed" children may be those who are predisposed to interpersonal aggression. Nelson and Crick (2002) examined how parental psychological control—a component of attachment—affected aggressive tendencies in relating to peers in elementary school students, explaining that established patterns in parent-child interactions become social-behavioral orientations that are transmitted to peer relationships. Testing the sample's experience with both behavioral and psychological parental control and the amounts and types of aggressive behaviors, the authors performed correlational analyses while also considering the genders of the student/parent dyad. It was found that in most cases, parental coercive control was predictive of all types of aggression, particularly physical aggression for boys and relational for girls. For girls more so than boys, paternal psychological control was predictive of relationally aggressive tendencies. The authors concluded that parents' controlling tendencies contributed to and/or helped to maintain their children's aggressive behaviors with peers.

In older children, attachment styles also influence victimization in peer relationships. Dykas, Ziv, and Cassidy (2008) investigated how attachment impacted social behavior and aggression towards peers, victimization by peers, degree of peer acceptance, and sociometric group status in a sample of adolescents. Several noteworthy findings emerged, including insecure adolescents being nominated as significantly less prosocial and more aggressive or shy, as well as significantly more often victims of peer aggression and rejection. While the authors urged that these connections cannot be interpreted as causal, they certainly provide support to the notion that early attachment styles do influence adolescents' peer experiences, and their tendencies to aggress or be victimized.

Because of the correlational methodologies used, none of the previously described projects can confirm a causal link between early attachment and rejection in later peer relationships. The statistical technique of structural equation modeling can be used to evaluate proposed models of connections between latent variables, thus assessing how well a particular data set fits theoretically-derived predictions of the ways latent and observed variables relate to one another; while also unable to prove causation, this adds additional information about the directionality and strength of relationships between constructs. Cowan and Cowan (2004) used structural equation modeling to uncover the potential pathways between attachment and peer rejection for middle childhood participants. In the model, mother and father parenting effectiveness was predicted to relate to the children's social skills and subsequent peer rejection over time. The model was found to fit well, and as hypothesized, negative qualities in the parent-child relationship were moderate risk factors leading to poor social skills, aggressive behavior, and rejection in elementary school. These results indicate that the family relationship is an important contributor -- if not a causal factor -- to the quality of children's peer experiences.



Finally, the work of Laible, Carlo, and Raffaelli (2000) suggests that not only does early parental attachment predict adolescent peer attachment, but that the two are both predictive of later adjustment. In their adolescent sample, it was found that high levels of both secure parent and peer attachment were related to the best adjustment while high levels of insecure attachment were related to poor adjustment (as defined by high levels of depression, anxiety, and aggression and low levels of sympathy). Those with high peer but low parent attachment were better adjusted than those with high parent but low peer attachment. These findings have several implications. One is that attachment, in and of itself, is important to adjustment. Another is that *both* parent and peer attachment influence adolescents' senses of well-being; in fact, at this age period, peer attachment may be *more* influential to adjustment. The authors point out that this is a good argument for the importance of multiple positive attachment figures in the lives of children and adolescents. It also supports the notion that secure parental attachment can bolster a child's ability to overcome or recover from a traumatic interpersonal event like peer rejection. This study provides more evidence of the connection between insecure attachment (both parent and peer) and later maladjustment, and additionally introduces the view of early parental attachment as a potential protective factor against this maladjustment.

#### *Attachment Quality as a Protective Factor*

The results of the previously reviewed research imply that secure early parental attachment has links both to later interpersonal functioning and psychosocial adjustment. It is suggested that secure attachment styles may also improve the ability to cope with traumatic interpersonal experiences and contribute to an individual's resilience in these instances. A small amount of research supports that secure attachment may serve such a function by mitigating interpersonal trauma to decrease the likelihood of later somatization (Waldinger et al., 2006),

acting out and behavioral disturbances (Patterson, Cohn, & Kao, 1989), and declining social status (Gumpel & Ish-Shalom, 2003).

In Waldinger et al.'s work (2006), parental attachment was shown to be the mediating thread between childhood interpersonal trauma and adult somatization for women. Two women experiencing the same type of interpersonal trauma (peer rejection included) may have differential resilience depending on their early parental attachment style. Specifically, securely-attached women will be more likely to engage in appropriate help-seeking behaviors and feel comfortable in turning to others to help them cope, while insecurely-attached women will somaticize rather than appropriately expressing negative affect. When viewed in this light, secure attachment, while not preventing trauma, can be viewed as a buffer to traumatic situations that can improve ability to cope and hasten the return to healthy adjustment and functioning.

When peer rejection is considered a traumatic interpersonal experience, it also appears that components of attachment contribute to recovery. Patterson, Cohn, and Kao (1989) carried out a study to determine if maternal warmth served as a buffer to young children's peer rejection experiences. The effects of warmth on peer status and behavior were examined, and evidence pointed to warmth moderating adjustment problems otherwise associated with peer rejection. Specifically, rejected children whose mothers were high in warmth had less acting out and behavioral disturbances than rejected children with mothers who provided less warmth. This supportive relationship appeared to attenuate the development of adjustment problems common with peer rejection, supporting the notion that experiences with parents both directly and indirectly impacts peer experiences and psychosocial adjustment.

In their retrospective study on peer rejection in children and adolescents, Gumpel and Ish-Shalom (2003) also found supportive and secure familial bonds to be a protective factor in

the experience of peer rejection. Those with strong bonds were less likely to experience peer rejection in general, and most notably were more resilient in the face of the rejection. Children who identified strong family bonds were quicker to return to accepted status following peer rejection experiences than those who did not, and their improvement in social status was more marked. While the authors were unable to determine whether familial support was a causal factor, byproduct, or simple correlate to peer rejection, this still offers evidence that positive family relationships are associated with recovery in the peer rejection experience.

The reviewed studies suggest that secure attachment may mitigate the response to interpersonally traumatic experiences and lead to improved adjustment outcomes. When children are interpersonally victimized, secure attachment styles may minimize emotional and relational damage and improve resilience to the negative experiences. In the present study, peer abuse and primarily relational victimization are of special interest; while no studies have specifically addressed the role of attachment style as a protective factor in relational victimization, the reviewed findings suggest that children who have relationally traumatic episodes may experience fewer resulting adjustment problems if they also have a secure and protective attachment base.

#### *Peer Abuse and Relational Victimization*

While an empirical relationship has been demonstrated between early parental attachment and later psychosocial adjustment, peer relationships may also be an important factor to consider when predicting adjustment outcomes. As Laible, Carlo, and Raffaelli (2000) suggest in their investigation of the importance of parent and peer attachment, peer experiences could be as or *more* important when in regards to psychosocial adjustment, particularly for adolescents. If peer relationships are considered a critical factor to mental health, it is clear that disruption of peer

attachment could be a very upsetting, disturbing event in the course of a child's life. Like other upsetting, disturbing events (such as physical or emotional trauma), those of a relational nature may also be expected to also have far-reaching negative effects. This section will review literature relating to interpersonal trauma, peer abuse and rejection, and relational victimization, and their associations with psychosocial adjustment.

*Interpersonal trauma.* Psychological trauma results when an individual experiences a stressful event personally and forcefully; the event or series of events is distressing and feels overwhelming to his or her personal resources, and results in feelings of danger and anxiety (Briere & Scott, 2006). Interpersonal trauma is a type of psychological trauma that is relational in nature and involves a loss of or damage to a bond in a significant relationship. The relationships involved in interpersonal trauma are typically conceptualized as familial (Myers, 2008), but a case will be made here for damaged peer relationships as an interpersonal trauma with similar negative adjustment outcomes.

Individuals with a history of childhood interpersonal abuse tend to be at higher risk for major depression, and their episodes tend to be more frequent and severe than depressed individuals who have no such history; their responses to treatment are also poorer, indicating the tenacity of the outcomes (Putnam, 2003). This result is consistent even when physical or sexual abuse is not a factor. Spinazzola and his colleagues (2005) surveyed physicians regarding the most common content and outcomes of patients' complex trauma exposure. This was defined as the experience of multiple or chronic and prolonged, developmentally adverse traumatic events, most often of an interpersonal nature and early-life onset. It was found that interpersonal types of victimization (such as verbal abuse, emotional abuse, or emotional neglect) were by far the most prevalent form of trauma, affecting over 60% of the patients -- more so than physical or

sexual abuse, injuries, illnesses, or nature/man-made disasters. The most common sequelae to these experiences were affect dysregulation, attention/concentration problems, negative self-image, impulse control, and aggression/risk-taking. The authors note that while the patients' most common problems do not necessarily meet all the criteria for a traumatic event as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000), the patients were clearly interpreting and responding to these victimization experiences as if they were trauma. They suggested that the psychological and psychiatric community may benefit from a broader definition of what constitutes a traumatic event, as well as addressing the problems that result from trauma that is more interpersonal in nature, as their negative effects on development and emotional health were apparent in their results.

Interpersonally traumatic events may be especially hurtful and enduring for children, whose brains are still developing and who often lack the cognitive sophistication needed to process the event (van der Kolk, 2005; Dass-Brailsford, 2007); this may lead to a damaged self-concept, world-view, and ability to socially, behaviorally, and emotionally self-regulate (van der Kolk, 2005). The childhood peer experiences described below are conceptualized as interpersonally traumatic, with a high likelihood of contributing to internalizing and externalizing adjustment outcomes. To more accurately predict specific outcomes, literature relating to the relational victimization experience will be reviewed.

*Bullying and generalized peer abuse.* Olweus (1978) was one of the first researchers in psychology to identify, define, and describe the bullying experience. He put forth a definition of bullying that persisted for nearly 30 decades: "A student is being bullied...when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more students"

(Olweus, 1993, p. 318). Using this general definition of bullying, Olweus consistently found a high prevalence among schoolchildren (and remembered by adults), which had both short-term and long-term consequences such as social isolation, anxiousness, and poor self-esteem (1978, 1984, 1991, 1992, 1993).

Bullying, as conceptualized by Olweus, contains a broad spectrum of abusive peer behaviors. Building on the early work of Olweus, Nansel and her colleagues (2001) found that nearly 30% of their large sample of 6th through 10th grade students were moderately to frequently involved in bullying (defined as physical abuse, verbal abuse and teasing) as perpetrators, victims, or both. The authors classified this as a serious problem for American youth, both for its prevalence and its connection to poor psychosocial adjustment. Each form of adjustment was significantly, concurrently, associated with bullying, including but not limited to: academic achievement, relationships with classmates and feelings of loneliness, with internalizing problems being a hallmark of victimization. Due to the very large sample size ( $N = 15,686$ ), which increases the probability of finding significant results, these findings should be interpreted cautiously; however, they provide evidence of a connection between bullying and maladjustment.

Both short- and long-term effects of bullying victimization are also apparent. In short-term prospective studies, bully victims have been found to have declining academic performance, as well as more apprehension, loneliness, feelings of abandonment, and suicidal ideation (Beale, 2001; Roberts & Coursol, 1996). In studies of longer-term effects, former victims of bullying tended to have poorer self-esteem and higher levels of depression than non-victims (Olweus, 1993), as well as experience more conflict in their interpersonal relationships (Hugh-Jones & Smith, 1999). They were also predisposed to overprotective behavior as parents

(McNamara & McNamara, 1997). Hawker and Boutons's (2000) extensive meta-analysis of research on childhood peer victimization and its relationship to future adjustment outcomes found significant, moderate effects on depression, loneliness, anxiety, and general and social self-esteem.

The collective evidence suggests that victimization by bullying is prevalent and tied to peer relationship issues, poor adjustment, and poor mental health. As this association has become more apparent through several empirical studies, peer aggression has progressively become a more popular topic in current literature; greater interest has been shown in the problem, its causes and effects, and interventions targeting bullying (Crick & Grotpeter, 1995). Researchers have more recently recognized the complexity of the bullying issue, including more subtle forms (Smokowski & Kopasz, 2005). Gender, in particular, may influence how bullying is perpetrated and experienced by the victim (Crick & Grotpeter, 1995). The following section will review evidence regarding gender's effects on peer abuse.

*Gender and peer abuse.* In most early bullying studies in which gender was included as a variable, boys were found to be more aggressive than girls. This fit with the common "boys will be boys" mentality prevalent in society, which contains the expectation that boys be tough and physical and girls be meeker and polite. However, when sex differences were explored in greater depth, important differences began to emerge. In their early exploration of aggression literature, Frodi, MaCaulay, and Thome (1977) noted that while previous research tended to find males more aggressive, gender had no significant predictive power over aggressive displays. They suggested that while socialization differences may often suppress girls' and women's overt aggression in regard to physical and verbal displays, females can and will aggress situationally.

Nearly ten years later, Lagerspetz, Björkqvist, and Peltonen (1988) empirically studied gender differences while accounting for what they called “indirect” aggressing. This method of aggression, by which the perpetrator may remain unidentified, includes behaviors such as gossiping, backbiting, and manipulation of the social structure of the class. They hypothesized that if these types of aggression were taken into account, gender differences would become more salient. They assessed 11 to 12 year old boys and girls for their beliefs about their classmates’ probable behaviors, as well as their own responses, when another classmate angered them. Their findings suggest that “the social life of 11 to 12 year old girls is more ruthless and aggressive than has been suggested by previous research” (p. 412). Specifically, while boys were found to more often engage in episodes of physical and verbal aggression, girls were more prone to use indirect methods. Girls rated friendships as being more important to them and extremely hurtful when they were damaged by aggression. The authors pointed out that these results have implications for future research because if girls indeed are more prone to indirect methods (which are by nature more difficult to observe and assess), the very definition of aggression must be reevaluated and be made more inclusive of more “female” types of aggression.

The research group’s results were for the most part repeated in a future endeavor (Björkqvist, Lagerspetz, & Kaukiainen, 1992), in which cohorts of 8-year-olds and 11-year olds were also used to assess potential developmental trends in aggression. The younger sample had not yet fully developed indirect aggression strategies, but by 11 they were quite prominent. The girls, particularly the older ones, made the most use of indirect aggression and friendship withdrawal. This added support to the authors’ previous notion that gender does not necessarily dictate the total amount of aggression observed, but rather may influence whether or not that aggression is direct or indirect.



Research and interest in gender-common types of aggression has steadily increased since this time, and it has given rise to different ways of describing aggression that may be characteristic of females. The gender differences between boys and girls are often, but not always found in research (Archer & Coyne, 2005). Some confusion has resulted from the terminology chosen by researchers in their investigation of this phenomenon. Björkqvist, Lagerspetz and their colleagues, as in their work described above, have labeled it “indirect aggression.” In their work identifying aggressive patterns in 4<sup>th</sup> grade students, Cairns and his colleagues (1989) referred to the themes of alienation and ostracism found typical of girls as “social aggression,” and continued to use this term in their work (as did Galen and Underwood in 1997, and in their research group’s later projects). Crick and Grotpeter (1995) identified and pursued a line of research in “relational aggression,” which is discussed and expanded upon more in the following section. Since its conception, Crick and Grotpeter’s term has gained popularity and is commonly used when discussing and researching aggression styles typical in girls and women.

The differences—or lack thereof—between indirect, social, and relational aggression are debated. Some believe they are related, yet distinct, constructs, while others believe they are essentially the same phenomenon, despite the different terminology used (Archer & Coyne, 2005; Björkqvist, 2001). The present study uses the terms “relational aggression” and “relational victimization” to refer to the pattern of gossiping, ostracism, social alienation, and status attacks (described in greater detail in the next section) that are often associated with aggression in girls. While social, indirect, and relational aggression share many points in common and are often considered to be essentially the same concept, the term “relational” is more specific, descriptive

and more accurately captures the essence of the damaged relationships (and the targeting of those relationships by aggressors) that are described in this study.

*Relational victimization.* Crick and Grotpeter (1995) were the first to describe the phenomena described in the previous section as relational aggression, which has since been dubbed “Mean Girls Syndrome” in popular culture. The authors referred to the historical belief and research that boys were nearly always found to be more aggressive than girls, and they hypothesized that girls were indeed as aggressive as boys, but in a different way. Because girls are typically more relationally-focused, the authors believed that their aggressive actions would be, as well. These actions, which include the purposeful manipulation of peer relationships such as ostracizing and removal of friendship, were termed “relational aggression” and considered to potentially be as damaging as physical and verbal types of bullying.

To establish the construct, the authors studied a sample of 3<sup>rd</sup> to 6<sup>th</sup> grade students. They assessed overt aggression, relational aggression, pro-social behavior, and isolation. The children were also assessed for loneliness, depression, and social anxiety. A factor analysis revealed the expected independent factors, and demonstrated that relational aggression was a related, yet distinct construct from overt aggression. When the amount of relational aggression was analyzed by gender, a significant difference was found; specifically, girls were (as expected) found to relationally victimize more than boys. Also confirming the hypothesis that these experiences are damaging, relational aggression experiences were found to be significantly related to concurrent maladjustment—rejected children were more depressed and anxious than accepted ones, above and beyond what was accounted for by overt aggression. These results are similar to and build upon previous research indicating that girls may match boys in aggression if more subtle forms are considered (Lagerspetz, Bjorkqvist, & Peltonen, 1988; Bjorkqvist, Lagerspetz, & Kaukiainen,

1992; Cairns et al., 1989). Crick's investigation established relational aggression/relational victimization as a valid construct with significant implications for the well-being of children, especially girls, and popularized it for a new generation of aggression researchers.

While it is well-established that physical and verbal aggression are effective means of harming peers (Olweus, 1978; Smokowski & Kopasz, 2005), relational aggression may be just as effective because it interferes with important social goals: namely, establishing and maintaining close dyadic ties, and increasing social status and acceptance (Crick & Bigbee, 1998). It can serve functions that are proactive or goal-directed (such as improving or maintaining one's social status or "winning" the friendship of a popular individual). It can also serve functions that are reactive or in defense of a perceived threat, or motivated by hostility (such as retaliation for "stealing" one's dating partner) (Ostrov & Crick, 2007). In general, it is a multi-functional and effective mode of aggression, often preferable for children because its subtlety makes it a less noticeable (and therefore, a less-likely punishable) offense than physical or verbal aggression. Girls may find it an especially useful form of aggression because it is not associated with the stigma of being a tomboy or "tough" girl.

*Outcomes of relational victimization.* After establishing that relational victimization is, in fact, a very real phenomenon that occurs often and affects children, one of the primary and pervasive questions is whether it is harmful. Several studies have investigated possible associated adjustment problems with peer rejection and relational victimization, and have found both concurrent (Crick & Bigbee, 1998; Prinstein, Boergers, & Vernberg, 2001; La Greca & Harrison, 2005; Storch, Brassard, & Masia-Warner, 2003; Siegel, La Greca, & Harrison, 2008), short-term (Storch, Masia-Warner, Crisp, & Klein, 2005; Siegel, La Greca, & Harrison, 2008) and longer-term (Dempsey & Storch, 2008) effects. Strong support for long-term predictive

power is sparse, although reviewing literature on rejected children in general provides additional empirical evidence (Parker & Asher, 1987; Lev-Wiesel et al., 2006) and qualitative evidence (Ambert, 1994) of long-term impact of peer rejection. This section will review pertinent research relating to the harmful nature of relational victimization.

Crick and Bigbee (1998) were among the first authors to specifically empirically investigate concurrent psychosocial problems with both overt and relational aggression, in an attempt to understand if the relational aggression added to the prediction of adjustment issues. Sampling 4<sup>th</sup> and 5<sup>th</sup> grade students, they assessed victimization and aggression as well as psychosocial adjustment for each individual. They found that relational victims were primarily girls, while the overt victims (and those who experienced combined forms of victimization) were mostly boys. Analyses indicated that for boys, relational victimization added significantly to aggression in predicting peer acceptance, peer rejection, submissive behavior, loneliness, social avoidance, and emotional distress; similar results were found for girls, with the addition of relational victimization predicting self-restraint and social anxiety. Adding relational victimization made a unique contribution to the adjustment scores, over and above what was predicted by overt aggression and victimization. This provided more evidence that relational aggression/victimization is both a distinct construct from the traditional definition of bullying, and also that it has important implications for children's mental health (especially internalizing problems).

Relational victimization also has been found to be concurrently harmful for older children. Prinstein, Boergers, and Vernberg (2001) extended upon previous work by examining the phenomena of overt and relational aggression and victimization among older children, pointing out that peer relationships in adolescence are particularly salient, and adolescents' more

sophisticated social/cognitive structure make them ripe for relational aggression strategies. The authors examined aggression/victimization experiences, depressive symptoms, loneliness, self-esteem, and externalizing symptoms. It was found that relational victimization was by far the largest predictor of concurrent adjustment problems (depressive symptoms, loneliness, and self-esteem) in adolescents, especially for girls, and over and above what was explained by overt victimization, although no significant association was found between relational victimization and externalizing problems. Again, it was concluded that all forms of victimization were distressing for children (in this case, adolescents), but that relational forms seemed uniquely connected to internalizing problems.

Social anxiety is also a potential outcome of adolescent peer rejection. La Greca and Harrison (2005) assessed multiple levels of adolescents' interpersonal experiences (including peer status, relational victimization, and romantic relationships) to understand their role in social anxiety and depression. Assessing the peer experiences, dating involvement, and adjustment of high school students, the authors attempted to predict socially anxious and depressive outcomes. When focusing specifically on social anxiety, high levels of relational victimization were the largest contributing factors, and in general the peer relation variables (as opposed to gender or romantic relational variables) accounted for the most variance. All aspects of peer social functioning contributed to depression scores, but again relational victimization was the strongest predictor. While girls were affected by relational victimization more often than boys, both boys and girls reported experiencing more relational victimization than overt types, and no gender interactions were significant. The authors concluded that relational victimization was of special concern when it came to adolescents' psychological functioning, although again the link was a concurrent one. They recommended longitudinal studies to understand the nature of a potential

causal path between this type of victimization and anxiety/depression, as well as to demonstrate if these problems continued past adolescence.

Storch, Brassard, and Masia-Warner (2003) studied a group of adolescents to determine the relationship of peer victimization to social anxiety and loneliness, and additionally sought to uncover the potential moderating effect of peers' pro-social behaviors. Both overt and relational victimization were positively associated with social avoidance and loneliness, with relational victimization being the most significant predictor (pro-social behavior had a small moderating effect). To further understand these relationships as well as answer the call for more investigation about the persistence of psycho-social adjustment problems in the wake of peer victimization, the research group (this time consisting of Storch, Masia-Warner, Crisp, and Klein [2005]) did a one-year prospective study on peer victimization, social anxiety and phobia in a sample of adolescents. Results most significantly indicated that relational victimization predicted social phobia scores a year later (although not general social anxiety), while overt victimization did not have predictive effects on phobia or anxiety. A reciprocal effect of social anxiety on victimization was not found. This was one of the first pieces of evidence that relational victimization has longer-term consequences.

To add evidence to the short-term longitudinal nature of victimization's effects, Siegel, La Greca, and Harrison (2008) performed a shorter, two-month prospective project examining the potential bi-directional effects of relational victimization and social anxiety. No gender differences were found in victimization scores. The concurrent analyses, as expected, showed that Time 1 relational victimization uniquely predicted Time 1 social anxiety. The prospective analyses showed that Time 1 relational victimization was also related to Time 2 social anxiety, especially for girls. Finally, the reciprocal analysis found that social anxiety at Time 1 predicted

increases of components of relational victimization at Time 2, but not overt victimization. In every analysis, relational victimization emerged as the most prevalent and impactful form of peer victimization. This study supported the notion of relational victimization as ubiquitous and harmful when it occurs, and also provided evidence of the effects being maintained over time.

Only one known study has specifically investigated the impact of childhood relational victimization on adjustment in adulthood. Dempsey and Storch (2008) investigated the association between childhood relational victimization experiences and psychological functioning in early adulthood, using retrospective recall methods. To test for an association between early victimization and the current experiences of fear, depression, anxiety, and loneliness, they developed their own seven-item measure of relational victimization and compared it to measures of other psychosocial symptoms, controlling for gender and perceived social support. Upon analysis, it was found that recalled victimization was related to both depressive symptoms and social anxiety, but not loneliness. Gender and perceived social support did not appear to impact this relationship. Although social support was accounted for in the form of “close friends,” the authors did not examine if parental attachment/support affected the experience or perception of the relational victimization experience. However, these findings support the notion of relational victimization as a long-term problem for students of both genders, which supports the continued study of the nature of these relationships.

The long-term effects of childhood relational victimization are of specific interest in the present study. There is more, although less-specific, evidence that childhood relational victimization may have predictive power on adulthood adjustment. Research on general peer rejection—which, like relational victimization, excludes overt bullying but includes social exclusion, isolation, and the use of relationships as a means to aggress—has demonstrated

various long-term correlates, as well as provided insight into how adults perceive and remember their childhood rejection experiences. In Ambert's (1994) qualitative research, adults recalled childhood peer rejection far more often than negative parental treatment, and still felt distressed by the memories of these experiences at the time of study. Many of the participants reported long-lasting negative effects, some for years, and some right up until the time they wrote their autobiographies. Lev-Wiesel and her colleagues (2006) theorized that peer rejection might have negative effects to the extent of being considered a traumatic event, and found that 32% of their adult participants considered childhood episodes of peer rejection to be the most traumatic experiences in their lives. When examining the relationship between peer rejection experiences and depression/PTSD symptoms, it was found that the experience of rejection was a significant predictor of both, while the perception of potency and social support served as a buffer for these symptoms. In Parker and Asher's (1987) longitudinal investigation, low peer status in childhood was found to be quite predictive of dropping out of school, criminality, and to a lesser extent, the development of psychopathology. Collectively, these studies suggest that childhood peer rejection is distressing and damaging to adult adjustment.

In conclusion, relational victimization and peer rejection have been found to be connected to a variety of negative adjustment outcomes, particularly internalizing problems such as depression, anxiety, and loneliness (Crick & Bigbee, 1998; Prinstein, Boergers, & Vernberg, 2001; Storch, Brassard, & Masia-Warner, 2003; Storch, Masia-Warner, Crisp, & Klein, 2005; La Greca & Harrison, 2005; Dempsey & Storch, 2008). This has been demonstrated concurrently for victimization experiences in early, middle, and late childhood, as well as prospectively from one developmental phase to another. Most importantly for the present study, childhood victimization experiences have been linked to adjustment in adulthood, suggesting that



distressing effects are more than immediate and transitory responses to single events. How these effects are transmitted, and the factors that influence the course they take, are additional questions that will be addressed in the following sections.

*Developmental issues.* One factor that may influence the experience of relational victimization is the developmental stage in which occurs. Peer relationships change and take on different levels of importance through the lifespan. While younger children's peer groups tend to be more externally organized, activity based, same-gendered and ephemeral, the groups expand and become more complex as their members age (Brown, 2009). Adolescents, specifically, tend to rely more heavily on their peer networks and affiliations than do their younger counterparts (La Greca & Prinstein, 1999). Relational aggression and victimization has been studied at virtually every phase of life, and some understanding has emerged about their differential presentations and potential effects in early, middle, and late childhood.

Crick et al. (2001) reviewed qualitative ways that peer victimization can change in different developmental periods; the changes are often a result of cognitive and social sophistication levels. In early childhood, when levels are fairly low, relational aggression strategies tend to be direct and obvious, and are an immediate response to a perceived transgression. Because friendships at this age typically center around shared activities, relational victimization also tends to do so (e.g. "I won't play with you if you don't give me that toy"). In middle childhood, strategies evolve to become more covert and less confrontational (hence less apparent to others). These children make more use of the peer group to victimize others (e.g. rumor-telling), and are more likely to use relational aggression as a retaliatory strategy for *past* transgressions. The period of adolescence demonstrates greater refining of relational skills and a greater reliance on manipulation of peer groups and social status; these children are more likely

to involve peers of both sexes in their aggression strategies, or use them in the context of romantic relationships (e.g. sexual confidence or fidelity issues).

Few empirical studies have directly compared relational victimization across age groups. Gumpel and Ish-Shalom (2003) retrospectively gathered information on the onset, duration, and intensity of victimization across life-stages. It was found that the most intense forms of victimization tended to begin in elementary school, persist through middle school, and begin to fade in high school. Milder forms began in middle school but still tended to fade during high school. Nearly all respondents reported that regardless of the level of victimization they experienced, the situation (and their social status) improved at some point in high school.

Galen and Underwood (1997) investigated perceptions of the harm caused by physical and social aggression in 4<sup>th</sup>, 7<sup>th</sup>, and 10<sup>th</sup> grade students (covering early, middle, and late childhood) to capture potential developmental differences in the experience. In the first study, students of both genders completed measures with vignettes describing aggressive social interactions between same-sex peers; the participants were asked to describe how hurt they would feel in this situation, and how often it happened in their own experience. The girls in 10<sup>th</sup> grade reported that social aggression was significantly more frequent than physical aggression. In the second study, students were shown videotapes of socially aggressive acts and asked about their perceptions of the victim, the aggressor, and the act itself. The 7<sup>th</sup> graders rated social and physical aggression as equally hurtful, while the 4<sup>th</sup> and 10<sup>th</sup> graders rated physical aggression as more hurtful than social aggression. Again, the 10<sup>th</sup> grade girls reported the highest frequency of social aggression. The elementary school children, more so than their older peers, reported they would experience anger from the social aggression scenario in the video.

Goldstein & Tisak (2004) used samples of students from middle childhood, late childhood, and young adulthood in their research regarding outcome expectancies of relational aggression. Significant findings relating to developmental status revealed that adolescents and adults were uniquely sensitive to relational aggression in the dating context, and that the older the participant, the more harmful the perception of relational aggression.

While the previously reviewed studies have indicated differential perceptions of victimization across age groups, no known research has compared outcomes of victimization across age groups in the same research project. However, many studies have been performed on the effects (mostly concurrent) of relational victimization in a single age group: early childhood (Burr et al.; Ostrov et al., 2008, Storch et al., 2003, Leadbetter et al. 2004, etc.), middle childhood (Crick & Bigbee, 1998; Hoglund, Lalonde, & Leadbeater, 2008; Martin & Huebner, 2007; Perderson, Vitaro, Barker, & Borge, 2007, etc.), and late childhood/adolescence (Storch, Brassard, & Masia-Warner, 2003; La Greca & Harrison, 2005; Storch, Masia-Warner, Crisp, & Klein, 2005, etc.). Nearly all these studies have found evidence of an impact of relational victimization on psychosocial adjustment, although lack of differential effects by age group cannot be assumed.

*Frequency and intensity.* Another factor that may influence the transmission of relational victimization's effects from childhood to adulthood is the child's perception of the intensity of the experience. The distinction between frequency (how much) and intensity (how hurtful) of relational victimization experiences may provide additional understanding about how they lead to long-term adjustment problems. As discussed previously, factors such as attachment style and gender may influence a child's perception of victimization. This perception may have the power to transform a relatively brief and minor episode into a traumatic experience with long-lasting

consequences, or severe and long-term victimization into a mere frustration with little effect on healthy adjustment.

As previously discussed, gender and developmental level may have an impact on how an individual perceives and copes with relational victimization (Crick & Grotpeter, 1995; Galen & Underwood, 1997; Crick, Grotpeter, & Bigbee, 2002). Goldstein and Tisak (2004) specifically demonstrated how perceptions of similar victimization experiences may vary. While both females and males reported similar frequency of relational aggression, females indicated it was more hurtful and damaging to their relationships. Girls also indicated greater emotional distress and hurt in response to being victimized. They associated a greater number of negative consequences for both themselves and others in these situations. Also, older students perceived more harm to come from relational aggression as compared to the younger students sampled.

Additionally, there is mixed evidence for whether social support impacts the perception of relational victimization experiences. Lev-Wiesel and her colleagues (2006) found that adults recalled peer rejection as less hurtful when they felt they had more social support from friends; Dempsey and Storch (2008) found no significant difference of these perceptions based on social support. It should be noted that both of these studies were retrospective and accounted only for current social support, not for support at the time of the victimization.

In general, rejected children who do not perceive themselves as rejected are often better adjusted than those who do, regardless of the frequency with which the events occurred (Schmuck, 1966). Whether their perceptions are influenced by their gender, age, support level, or other personality or demographic factors, the difference seems to have impact on the outcomes. While it has yet to be specifically investigated whether differences in perception of relational victimization experiences affect long-term adjustment outcomes, a perception of little

control and high intensity of an abuse experience may lead to additional trauma (Carlson, Furby, Armstrong, & Shlaes, 1997). This supports distinguishing between frequency and intensity of a victimization experience and suggests cognitive differences in the way individuals process distressing events. These differences and their connection to differential outcomes will be explored in the following section on rejection sensitivity.

### *Rejection Sensitivity*

Having established that early parental attachment and peer rejection experiences may affect how children and adults tend to think about and respond to others, it is also helpful to conceptualize the cognitive-affective differences that may result. Another concept that may explain individual differences in the response to relational victimization--and therefore, the different levels of long-term adjustment/maladjustment issues that may arise from it--is rejection sensitivity. This concept, originally explained by Downey and Feldman (1996), uses elements of social-cognitive and attachment theories to describe how people attribute meaning and respond to ambiguous episodes of rejection.

In social information-processing theory, “children’s social behavior is a function of sequential steps of processing, including encoding of social cues, interpretation of social cues, clarification of goals, response access or construction, response decision, and behavioral enactment” (Crick & Dodge, 1996, p. 993). When this processing is accomplished with accuracy and skill, the result is typically competent and satisfying social interaction. When the process is heavily biased or inefficient, the result is more likely to be deviant behaviors, such as aggression. Hostile attribution bias is one such way this can occur; it has been well-established that aggressive children are much more likely to attribute malicious intent to peers’ behavior—even

when that intent is not present (Dodge, 1980; Crick & Dodge, 1996). This is true both in cases of physical *and* relational aggressors (Crick, Grotpeter, & Bigbee, 2002).

A similar process may be at work for victims of relational aggression. According to Downey and Feldman (1996), early experiences with caregivers can affect a child's expectations of acceptance and rejection in the information-processing scenario; these expectations influence the processing of those rejection events (or perceived rejection events) once they occur. Two research projects performed by the group confirmed that rejecting and neglecting parenting experiences were associated with higher levels of rejection-associated interpretational bias (Feldman & Downey, 1994; Downey, Khouri, & Feldman, 1997). Rejection-sensitive individuals are ever-vigilant for evidence of rejection, and when rejection cues occur, they are interpreted as intentional. This leads to exaggerated responses of upset and anger which may have implications for interpersonal relationships and psychosocial adjustment (Downey et al., 1998; Sandstrom, Cillessen, & Eisenhower, 2003).

*Mediating outcomes of rejection experiences.* Rejection sensitivity itself may not directly cause poor psychosocial outcomes; rather, it mediates responses to distressing *interpersonal* events. Therefore, the bias is present only or primarily for rejection experiences (Ayduk, Downey, & Kim, 2001). This is similar to interpretation bias for danger in interpersonal trauma victims. Victims of trauma will rate threatening, neutral, and positive representations of ambiguous social situations as higher in risk for escalation and much more predictable in danger, thus heightening fear responses in these situations (Elwood et al., 2007). Post-traumatic stress disorder symptoms are often mediated by these biased responses, which are shaped by victimization and trauma; this demonstrates how interpretation biases which are created,

bolstered, and/or maintained by past traumatic experiences interact with current experiences to affect symptomology (Elwood et al. 2007).

When interpretation biases are influenced by rejection experiences and impact situations involving acceptance and rejection, they may be termed “rejection sensitivity;” this concept may be used to understand how rejection experiences may lead to negative, long-term adjustment problems. A few researchers have studied how rejection sensitivity may mediate the association between rejection situations and outcomes. Downey, Lebolt, Rincon, and Freitas (1998) studied rejection sensitivity in an adolescent sample and found evidence of greater long-term, interpersonal adjustment problems in individuals high in this construct. After establishing that there were significantly different distress responses to vignettes between adolescents with measured high and low rejection sensitivity, they examined the predictive power of the rejection sensitivity construct by longitudinally assessing difficulties with peers and teachers, as well as poor grades and absences from school. Results indicated that initial assessments of rejection sensitivity predicted conflicts with peers and teachers the following year, as well as a decline in grades and an increase in absenteeism. These effects were more pronounced for girls than boys (a gender difference is consistent with Crick and Grotpeter’s [1995] assertion that rejection is used more by girls as a form of aggression, and is more hurtful to girls because of the relative greater importance of close emotional bonds). The authors concluded that their research reaffirmed the concept of angry expectations as mediating individual responses to rejection events, and furthered understanding of rejection sensitivity by uncovering longer-term negative externalizing problems.

Internalizing problems are of specific interest to the present study. Downey, Khouri, and Feldman (1997) reviewed the literature and based on findings described a model of how rejection

sensitivity is shaped and contributes to adjustment outcomes. In the model, parental rejection contributes to the trait of rejection sensitivity, leading to later interpersonal patterns of social withdrawal (including minimizing relationships, loneliness, and social phobia) and social preoccupation (including suspicion of others, hostility, and propensity to being rejected). While the authors focused heavily on parental attachment as the primary source of rejection sensitivity, they point out that there are likely other factors at work... “Peer rejection is a case in point...one way in which active rejection by peers may alter children’s feelings, thoughts, and behavior is through heightening their sensitivity to rejection” (Downey, Khouri, & Feldman, 1997, p. 100). In the case of either parent or peer rejection as a source, rejection sensitivity was expected to mediate responses to later rejection experiences and impact psychosocial adjustment.

Since Downey, Khouri, & Feldman put forth this model, other researchers have sought to understand the ways rejection-sensitive tendencies can undermine positive relationships and contribute to feelings of loneliness (Downey, Freitas, Michaelis, & Khouri, 1998; Levy, Ayduk, & Downey, 2002). London, Downey, Bonica, and Paltin (2007) specifically examined psychosocial long-term correlates of peer rejection in a longitudinal study to examine the impact of peer experiences on anxious/angry rejection expectations, and also on the children’s levels of social anxiety, social withdrawal, and loneliness. They found evidence of a link between peer rejection and rejection sensitivity over time, although this result was only significant for boys in this sample. Also, rejection sensitivity was indeed a significant source of vulnerability for social withdrawal, social anxiety, and loneliness. Early parental rejection was not assessed as a potential contributing factor, but these results provide initial empirical support for the associations between peer rejection, rejection sensitivity, and later internalizing and relationship issues.



### *Conclusion and Proposed Models*

There is a great deal of historical support and evidence for associations between early parental attachment problems and adjustment outcomes, while peer rejection and relational victimization have more recently shown promise in explaining long-term adjustment issues. The precise mechanisms at work in these potential transmissions are less-studied. Rejection sensitivity is a social-cognitive explanation of how interpersonal experiences may shape individual responses to rejection and lead to differing psychosocial adjustment outcomes.

Downey, Khouri, and Feldman (1997) brought together several of these elements in one model, to explain how parental attachment contributes to rejection sensitivity, which in turn contributes to the experience of psychosocial difficulties. However, this model did not include peer victimization experiences, which were later found to significantly impact the development of rejection sensitivity and contribute to later psychosocial adjustment problems (London, Downey, Bonica, & Paltin, 2007). It stands to reason that when peer rejection is taken into consideration, as well as parental attachment, a greater proportion of significant childhood experiences will be accounted for and a stronger model will result in the quest to understand how early rejection is related to later maladjustment.

The present study tested a model similar to that proposed by Downey, Khouri, and Feldman (1997; see Figure 2), as well as a primary one that includes relational victimization as a contributing factor (see Figure 1). It was expected that those with differing quality of internal working attachment models would react to relational victimization (which is considered here to be an interpersonal trauma) in different ways. Those with more secure working models would be more likely to regulate their stress and recover from such encounters, as well as to continue to seek out healthy interactions and relationships, preserving their emotional and interpersonal well-

being. Those with attachment models that represent people as inherently untrustworthy and unavailable would be more likely to anticipate relationally aggressive events and respond in unproductive ways (rejection sensitivity), hence exacerbating the emotional effects and potentially creating more long-term problems. These people would also be expected to report higher levels of distress in response to victimization. For the purposes of this study, long-term psychosocial adjustment was represented by three oft-found constructs associated with relational victimization: social anxiety, loneliness, and current peer attachment.

To accomplish the goals of this project, it was necessary to create and validate a retrospective measure of relational victimization. To account for the distinctions between developmental periods of relational victimization occurrences and the differences in perception of the experiences, this measure included distinctions of time period and frequency/intensity. The retrospective nature of this survey made it possible to examine potential effects of victimization experiences that take place long after they occur, as opposed to one- or two-year time periods usually favored by longitudinal studies. This questionnaire was used along with established measures of early parental attachment, rejection sensitivity, peer attachment, social anxiety and loneliness to test the proposed and alternative models.

If the proposed primary model and its variables fit the data in the hypothesized ways, it will lead to a better understanding of the long-term impact of parental and peer relational trauma, as well as provide insight into how this occurs. Comparing a model that includes relational victimization to one that does not has the added benefit of providing information about the relative importance of the construct. If a model that includes relational victimization is better-fitting than the alternative, additional support is available for the notion that this type of peer victimization is an important type to assess and target for intervention in childhood. Also,

because gender differences favoring girls as the typical victims of relational aggression are often but not always found during research (Archer, 2004; Archer & Coyne, 2005), including males and females in this sample and testing for gender differences in their responses adds additional information to this literature. It also assists in determining if the results from male and female participants could be combined within the same models and interpreted in similar ways.

## CHAPTER THREE--Methods

This chapter reports characteristics and descriptive statistics of the participants in this study, as well as the procedure used to collect and analyze data. Sample size considerations are addressed. The instruments that were administered to participants are described and discussed in terms of reliability and validity, including the newly-developed Retrospective Relational Victimization Questionnaire (RRVQ). The research design and statistical analysis (structural equation modeling) used for the project are also discussed.

### *Participants*

The participants consisted of undergraduate counseling psychology, educational psychology, and psychological science students from a medium-sized Midwestern state university. The final sample consisted of both males ( $n = 78$ ) and females ( $n = 214$ ), for a total of 291 students. Their ages ranged from 18 to 46 ( $M = 20.60$ ,  $SD = 2.43$ ), with 96% of the participants falling between the ages of 18 and 23. The majority of the participants were recruited from the counseling psychology research pool ( $n = 192$ ), with the remainder recruited from the departments of psychological sciences ( $n = 79$ ) educational psychology ( $n = 20$ ). They took part in return for research credit for their courses. They were required to be at least 18 years of age and to have had interaction with both their mothers and fathers for the first 16 years of their lives (a requirement designated by the Parental Bonding Instrument),.

Participants were divided fairly evenly between freshmen (18.2%), sophomores (20.9%), juniors (29.1%), and seniors (25%), with the remainder being beyond the fourth year of college or continuing education students (6.8%). The ethnicities of the participants were the following: 88.2% Caucasian, 8% African-American, 1.7% Asian, and 2.1% Latino/Latina. Their

relationship status consisted of: 50.9% single, 37.0% dating, 6.2% living with a partner, 2.4% engaged, 2.7% married, and 0.7% divorced. Their academic departments were: 66.0% counseling psychology and guidance services, 27.1% psychological sciences, and 6.9% educational psychology.

Several authors have recommended different sample sizes as being adequate for structural equation modeling. Boomsma (1983) stated that samples of less than 100 were poor and recommended that at least 200 be used. Breckler (1990) and Kline (2005) agreed with Boomsma and stated that sample sizes of less than 100 are generally considered too small. Westin & Gore (2006) stated that 200 or more would be adequate. In general, larger sample sizes are generally considered more adequate for accurate parameter estimates (Kline, 2005). In light of these recommendations, this project's sample size of 291 was considered sufficient.

### *Procedure*

Data were collected in an anonymous study using the Inqsit online survey program. Flyers with the survey's URL address were posted on the Counseling Psychology human subjects opportunities board and distributed to the instructors of undergraduate counseling courses to communicate to their students. Because of a lack of a sufficient number of research opportunities available in departments of educational psychology and psychological sciences in the last month of data collection, permission was also obtained from these departments to recruit their students; information about the research opportunity was provided to the instructors to disseminate to their students. Interested participants entered the online survey and were taken directly to the informed consent form (Appendix A). Upon consent they were directed to the survey and asked to complete the following measures, in this order: A short demographic questionnaire (Appendix B), The Retrospective Relational Victimization Questionnaire (Appendix C), The Parental Bonding Instrument (Appendix D), the Rejection Sensitivity

Questionnaire (Appendix E), the Liebowitz Social Anxiety Scale (Appendix F), the Inventory of Parent and Peer attachment (peer section only; Appendix G), and the UCLA Loneliness Scale (Appendix H). Upon completion, students were instructed to email the researcher to obtain one hour of research credit for their psychology course. The data were securely stored in a password-protected electronic location.

### *Instruments*

*Retrospective Relational Victimization Questionnaire (RRVQ).* Early relational victimization was measured by The Retrospective Relational Victimization Questionnaire (Appendix C), a measure created for this study. A full description of the test development and psychometrics can be found in Appendix I. The measure consists of 34 items, each of which is repeated three times for different time periods for a total of 102 items. It is a self-report scale which retrospectively measures relational victimization experiences (such as gossiping, social exclusion, and the withdrawal of friendship) in elementary school, middle school, and high school time periods. Responses are equally weighted on a Likert-type scale. All items are statements that describe a relationally victimizing act, such as “I got the silent treatment or was ignored when I tried to interact with my peer/s,” and “My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do.” Following each item is a request for the participant to rate the frequency of the occurrence (the “A” sub-items; from 1 = “This never occurred” to 5 = “This occurred often”) as well as the intensity of the experience (the “B” sub-items; “If this occurred, how much did this experience affect you?”, from 1 = “Did not affect me” to 5 = “Affected me severely”). If the action described did not occur for the A item, the response for the B item is rated as 0. To obtain a total score, the sum of all items is taken, with a possible range of scores from 51 to 510. Subscale scores are obtained for the three

factors reflecting elementary, middle, and high school from items 1A through 17B, 18A through 34B, and 35A through 51B, respectively. Possible scores for each subscale range from 17 to 170. Higher scores are indicative of greater amounts of relational victimization.

The results of exploratory factor analysis suggest that the RRVQ has three factors measuring relational victimization in elementary school, middle school, and high school. Separate factors were not found for the frequency and intensity items within each developmental phase subscale. The resulting subscales are moderately to strongly correlated with one another ( $r = .70$  for elementary/middle school,  $.53$  for elementary/high school,  $.69$  for middle/high school). The full scale has high internal consistency ( $.98$ ) and adequate split-half ( $.86$ ) and four-week test-retest reliability ( $.78$ ). Each of the elementary, middle, and high school subscales has an internal consistency coefficient of  $.97$ , and a test-retest score of  $.75$ ,  $.76$ , and  $.80$ , respectively. Convergent validity has been found for the scale with a measure of social rejection, and divergent validity has been found with a measure of social desirability. There were no gender differences found for the total RRVQ scores or its subscale scores.

Analyses were conducted with the current sample to replicate some of the evidence for reliability and factor structure of the RRVQ. Means, standard deviations, ranges, and alpha coefficients are reported in Table 1. For the RRVQ, Cronbach's alpha and Spearman-Brown coefficient were similar to those found in the scale construction study ( $.99$  and  $.90$ , respectively). A confirmatory factor analysis was performed on the three-factor model of the scale found during scale construction with this separate sample, using maximum likelihood estimation. Results indicate that the three-factor model provides an adequate fit to the data according to cutoffs provided by McDonald and Ho (2002), Weston and Gore (2006), and Schumaker and Lomax (2004):  $\chi^2 = 836.39$ ,  $p < .001$ ; TLI =  $.91$ ; CFI =  $.93$ ; RMSEA =  $.05$ . Factor loadings

ranged from .40 to .85 for items on their designated factors. This provides additional support for the three-factor model found with exploratory factor analysis during scale construction.

Multivariate analyses of variance of RRVQ scores by gender from the present sample did not evidence significant differences on the total ( $F = .541, p = .46$ ), elementary school ( $F = .037, p = .85$ ), middle school ( $F = 2.602, p = .11$ ), or high school ( $F = .296, p = .59$ ) scores. This is consistent with results found during test construction, which also indicated a lack of gender differences on the RRVQ, and suggests that the data for males and females may be collapsed together within the primary model and interpreted in similar ways.

Table 1. *Scales, Means, Standard Deviations, Ranges, and Cronbach's Alpha Coefficients*

Measure	Mean	Standard Deviation	Range	Cronbach's Alpha
PBI	70.48	13.84	37 - 128	.769
PBI (mother)	32.36	8.00	16 - 62	.689
PBI (father)	38.11	9.48	13 - 72	.744
RRVQ	164.90	33.49	17 - 170	.987
RRVQ (elementary)	55.51	35.96	17 - 170	.969
RRVQ (middle)	59.61	33.59	17 - 170	.972
RRVQ (high)	52.03	15.36	17 - 85	.970
RSQ	8.09	3.7	0 - 25	.872
IPPA-P	100.10	16.16	46 - 121	.932
UCLA-LS	40.35	11.31	23 - 73	.941
LSAS	44.65	23.84	0 - 137	.950
LSAS (fear)	23.87	13.07	0 - 71	.923
LSAS (avoidance)	20.49	11.99	0 - 66	.898

*Note:* Psychometrics are reported for the present study sample. PBI = Parental Bonding instrument; RRVQ = Retrospective Relational Victimization Questionnaire; RSQ = Rejection Sensitivity Questionnaire; IPPA-P = Inventory of Parent & Peer Attachment—Peer scale; UCLA-LS = UCLA Loneliness Scale; LSAS = Liebowitz Social Anxiety Scale

*Parental Bonding Instrument (PBI).* Early parental attachment quality was measured on a continuous scale by the Parental Bonding Instrument (PBI; Parker, Tupling, and Brown, 1979;



Appendix D). This 50-item retrospective instrument is comprised of two scales which measure amount of “care” and “control” that a child experienced from her or his parents during the first 16 years of life. Information for mothers and fathers is collected with separate subscales. Scores for each item are determined by a four- point Likert-type scale which determines how well the item describes the parent, on which 0 = “very like” and 3 = “very unlike.” Sample items include “Appeared to understand my problems and worries” and “Invaded my privacy.” Scale scores are formed by correcting for reverse-scored items and adding the sum of all items to achieve a total score for each parent. Each parent scale may have scores which range from 0 to 75, and total score may range from 0 to 150, with higher scores indicating better or more secure attachment. The PBI has been shown to have moderate internal consistency and test-retest reliability; split-half reliability was shown to be .88 on the “care” subscale and .74 on the “control” subscale, while test-retest reliability was .76 on “care” and .63 on “control” (Parker et al., 1979). Convergent validity was determined by correlating attachment scores and expert rater data obtained through qualitative interview with the scores on the PBI; the correlation was .77 for “care” and .78 for “control” (Parker et al., 1979). The PBI has been shown to be independent of mood effects (Parker, 1983). For this sample, the mean for total PBI scores was 70.48 ( $SD = 13.84$ ), with a Cronbach’s alpha of .77. The “mother” scale had a mean of 32.36 ( $SD = 8.00$ ) and an alpha of .69, while the “father” scale had a mean of 38.11 ( $SD = 9.48$ ) and an alpha of .74. All scores fell between expected ranges (see Table 1).

*Rejection Sensitivity Questionnaire (RSQ)*. Proclivity towards responding to rejection in exaggerated ways was measured by The Rejection Sensitivity Questionnaire (Downey & Feldman, 1996; Appendix E). According to Downey and Feldman (1996), the scale measures “generalized expectations and anxiety about whether significant others will meet one’s needs for

acceptance or will be rejecting” (p. 1329). The RSQ is a self-report measure for late adolescents and young adults, which presents 18 situations in which requests are made of significant others and has the respondent rate how likely rejection would be for each situation on a six-point Likert scale, on which 1 = very unconcerned or very unlikely and 6 = very concerned or very likely. Participants rate their degree of anxiety about the outcome of these situations, and also their expectations of being accepted or rejected. To obtain a rejection sensitivity score, expectancy of acceptance scores are reversed to index expectancy of rejection; the reverse score is then multiplied by the score for degree of anxiety. Total scores are formed by summing the rejection sensitivity scores for each situation and dividing by 18. Scores may range from 0 to 25. Those who both expect and are anxious about rejection are considered to be rejection sensitive. A sample item and situation is “You ask a friend to do a big favor.”

This measure has shown good evidence of internal and test-retest reliability. Test-retest reliability was found to have a coefficient of .83 over a two to three week period, and a coefficient of .78 over a four month period (Downey & Feldman, 1996). The RSQ also demonstrates a single, stable factor structure and convergent and discriminant validity in a college sample; feelings of rejection in response to ambiguous situations assessed by a confederate were predicted well by the RSQ (Downey & Feldman, 1996). Discriminant validity was found between the RSQ and measures of timidity, social anxiety, attachment style, social avoidance, and confidence (Ayduk, Downey, & Kim, 2001). A factor analysis for scores on each item found seventeen items loaded higher than .40, and the remaining one at .30. No differences were found in factor analyses between sexes (Downey & Feldman, 1996). For this sample, the mean scores was 8.09 ( $SD = 3.7$ ), and the Cronbach’s alpha was .87. All scores fell between the expected range (see Table 1).

*The Inventory of Parent and Peer Attachment (IPPA)*. Security in adult relationships was measured by the Attachment to Peers subscale of the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987; Appendix G). The IPPA is a 75-item self report measure of security in relationships. Participants rate to what extent descriptive phrases about their friends and family, such as “My friends listen to what I have to say” and “I wish I had different friends,” are true, on a five point scale on which 1 = “Almost never or never true” and 5 = “Almost always or always true.” The normative data for this instrument were older adolescents and young adults aged 16 to 20. It contains three subscales with 25 items each: Attachment to Mother, Attachment to Father, and Attachment to Peers. Scores are found by summing the total item responses for each subscale. The peer subscale includes dimensions of trust, communication, and alienation, while the parental subscales include only communication and alienation. Parent scales are more strongly related to each other than they are to the peer scales. Trust and Communication scores are strongly related in both parent and peers (.76 for both). Other parent and peer scales had less intercorrelation; Trust scales was .33, Communication scales was .29, and Alienation scales was .47. The original authors found a test-retest reliability of .92 for peer attachment. Internal reliability was found to be .87 for the Mother subscale and .89 for the Father subscale. Construct validity has been found for each subscale when compared to similar measures. Parental attachment scores have been shown to be highly related to Family and Social Self Scores from the Tennessee Self Concept Scale and to most subscales on the Family Environmental Scale (Armsden & Greenberg, 1987). Peer attachment is positively related to social self concept as assessed by the Tennessee Self Concept Scale and family expressiveness on the Family Environment Scale, and is strongly negatively correlated with loneliness. Peer attachment moderately correlates with parent attachment as assessed by the IPPA as well as measures of

general family functioning and self concept as a family member (Armsden & Greenberg, 1987). For this sample, the mean IPPA peer score was 100.10 ( $SD = 16.16$ ), and the Cronbach's alpha was .932 (see Table 1).

*The UCLA Loneliness Scale (UCLA-LS).* Loneliness was assessed by the UCLA Loneliness Scale, Version 3 (Russell, 1996; Appendix H). This 20-item, single factor scale measures the degree to which adults feel they lack social support. Ten items reflect satisfaction with social relationships, while another ten reflect dissatisfaction. Items for this measure include "How often do you feel as if you lack companionship?" and "How often do you feel that there are people who really understand you?" Items are measured on a four-point scale, on which 1 indicates "Never" and 4 indicates "Always." Total scores are calculated by summing scores from all items, and they may range from 20 to 80. Internal consistency for the scale was found to be .92 when administered to college students, and test-retest reliability over a one-year period has been found to be high, from .73 in original evaluations (Russell, 1996) to .93 (Fairchild & Finney, 2006). The UCLA-LS has been found to have good convergent validity when compared to other loneliness measures, such as the NYU Loneliness Scale (.65) and the Differential Loneliness Scale (.72). For this sample, the mean UCLA-LS score was 40.35 ( $SD = 11.31$ ), and the Cronbach's alpha was .94, which was similar to previous findings (see Table 1).

*The Liebowitz Social Anxiety Scale—Self Report (LSAS-SR).* Anxiety in social situations was measured by the Liebowitz Social Anxiety Scale—Self Report (Liebowitz, 1987; Appendix F). The scale is a 24-item measure used to assess perceived anxiety related to social interaction, public speaking, observation by others, and eating and drinking in public (Safran, 1999). Participants are asked to rate their fear and avoidance of particular social situations on four-point Likert scales, where 0 = no fear and anxiety and 3 = severe fear and anxiety. Situations

presented include “Going to a party” and “Taking a test.” Thirteen of the situations presented assess performance fear, while the remaining eleven assess social interaction situations. The total score, calculated by summing the responses to all items, will be used in this study to assess overall social anxiety. Scores may range from 0 to 72.

Internal consistency of the subscales and total score have ranged from .83 to .96 (Heimberg et al., 1999) and from .88 to .94 (Oakman, Van Ameringen, Mancini, & Farvolden, 2003). The LSAS has been shown to correlate with other measures of social anxiety at a median rate of .76 (Heimberg et al., 1999). Discriminant validity has been demonstrated by significantly stronger correlations with other measures of social anxiety than with measures of depression. Construct validity has been demonstrated by treatment sensitivity with large effect sizes for treated social anxiety patients (Heimberg et al., 1999). For this sample, the mean score for the total LSAS was 44.64 ( $SD = 23.84$ ), and the Cronbach’s alpha was .95. The mean scores of the “fear” and “avoidance” subscales were 23.87 ( $SD = 13.07$ ) and 20.49 ( $SD = 11.99$ ), with alphas of .92 and .90, respectively (see Table 1). These values are consistent with previous findings.

*Demographic form.* An additional form was used to collect demographic information about the participants, such as sex, age, and year in school (Appendix B).

### *Research Design*

The research design utilized for this project is an ex post facto correlational design, which is used to examine relationships between variables which are not experimentally manipulated (Heppner, Kivlighan, & Wampold, 1999). This is a non-experimental, quantitative descriptive design, and it studies the correlations between variables of interest; in this case relational victimization, parental attachment, rejection sensitivity, loneliness, peer attachment, and social anxiety. The present study utilizes a more sophisticated development of such designs: structural

equation modeling (SEM). SEM is used to examine associations not just between manifest variables, but also the latent constructs these variables are presumed to measure. This type of design shares in common with other correlational designs the limitation of inability to make causal statements about results, because of the possibility of the influence of extraneous variables. To strengthen the correlational design, it is recommended that it be based on a strong theoretical grounding and that differential predictions be made and assessed (Heppner, Kivlighan, & Wampold, 1999), as they were in this study.

### *Statistical Analyses*

The proposed models of relationships between variables were tested using structural equation modeling (SEM), which is a statistical method that has been found useful in the social and behavioral sciences, when constructs involve latent variables not otherwise easily testable. SEM may be used to demonstrate relations among variables by first proposing a set of relations (referred to as the model), then evaluating how consistent this is when compared to observed relations (Hoyle & Smith, 1994). In this case, the set of relations proposed refer to the research questions discussed previously: it was believed that parental attachment and relational victimization will be related to rejection sensitivity, which in turn would be related to peer attachment, social anxiety, and loneliness. It was also believed that early parental attachment would be related to the experience of relational victimization (see Figure 1).

SEM usually refers to the same set of statistical procedures which allow researchers to create the following: (1) measurement models, which are the relationships between observed variables and latent (unobserved) variables, and (2) structural models, which are the relations between and among independent and dependent variables. When these models are estimated and evaluated in tandem, they create a general structural equation model (Hoyle & Smith, 1994).

This model, when created and determined correctly, is a comprehensive one which allows the observer to understand the relationships among variables, directionality of predictions, and how indirect effects impact the model. Models are considered “confirmed” if correlations in a matrix of observed data correspond to those that the model predicted.

Structural equation modeling seemed an ideal choice for examining the relationships proposed in this study, based on the theoretical underpinnings which suggest a clear path from the latent variables of parental attachment and relational victimization, to rejection sensitivity, to peer attachment, social anxiety, and loneliness. SEM may help to determine whether or not this model fits, or if in fact relational victimization is *not* interpersonal trauma which may lead to rejection sensitivity (see Figures 1 and 2) and later adjustment problems.

## CHAPTER FOUR—RESULTS

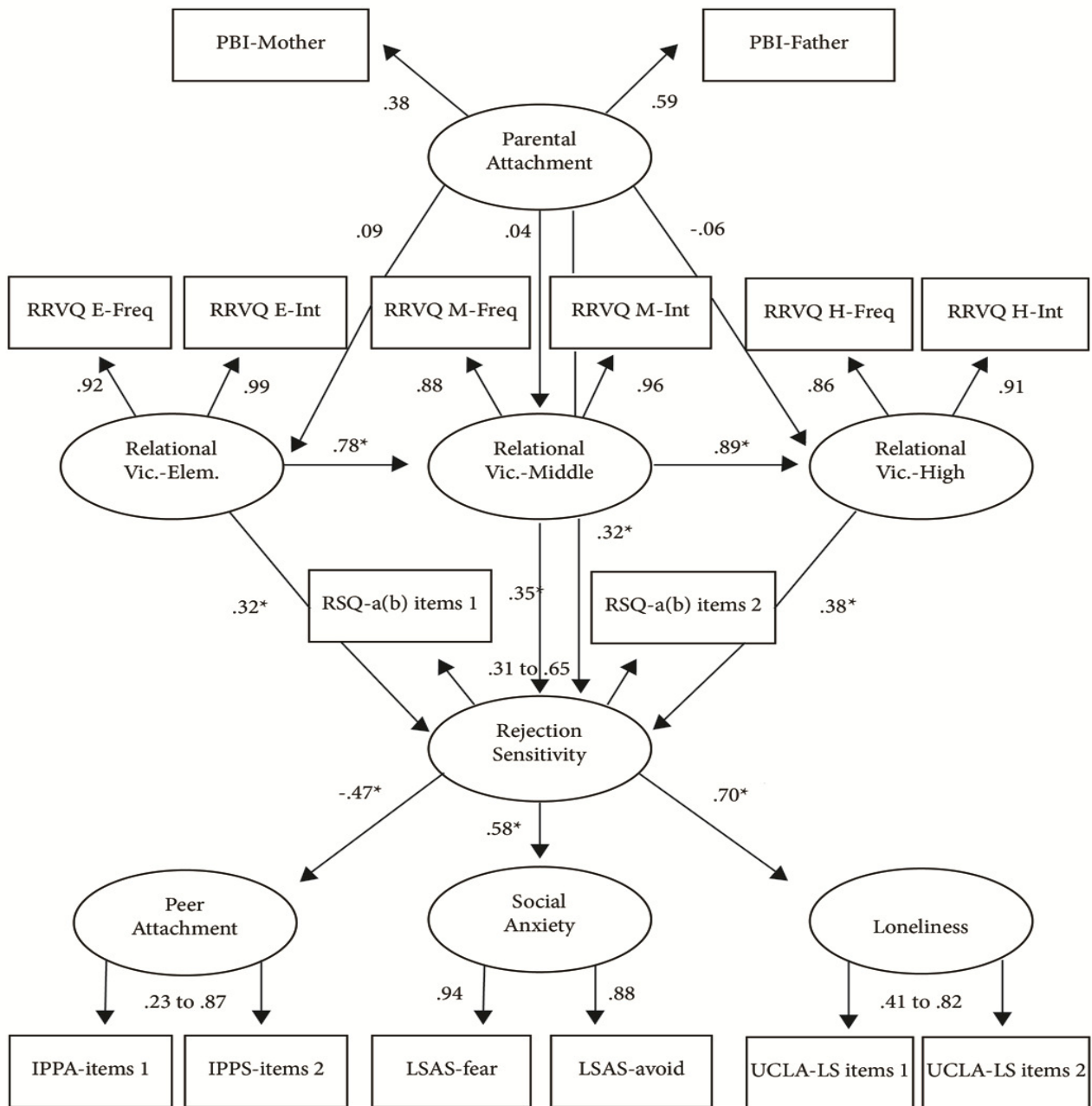
Structural equation modeling was used to test the models proposed in Chapter One (see Figures 1 and 2). This chapter provides descriptive data for correlations between measures used in this study. Suitability of the data set for the use in structural equation modeling is also addressed. Finally, the results of tests of model fit, SEM parameter estimates, and tests for significance of structural model differences were conducted and are reported to compare the primary and alternative models. Figures 3 and 4 depict the structural models and their estimates.

### *Scale Correlations*

In structural equation modeling, correlation coefficients among the observed variables provide the basis for testing models among measured and latent variables, and it is recommended they be examined prior to model testing (Schumacker & Lomax, 2004). Pearson product-moment correlation coefficients were calculated and examined for the various scales/subscales, to initially uncover the strength of association among scores (see Table 2). All variables were expected to be correlated within the model. This was true with some notable exceptions. The total RRVQ scores were significantly correlated with all other scales administered (RSQ,  $r = .28$ ; UCLA-LS,  $r = .43$ ; LSAS,  $r = .38$ ; IPPA-P,  $r = -.41$ , all  $p < .01$ ) except for the PBI ( $r = .05$ ,  $p > .01$ ). These results are consistent with the expectation that relational victimization would be related to rejection sensitivity, current peer attachment, current loneliness, and current social anxiety, but not the expectation that relational victimization would be related to early parental attachment. Also, and specifically, mother attachment scores did not correlate with social anxiety scores, and father attachment scores did not correlate with loneliness, peer attachment, or

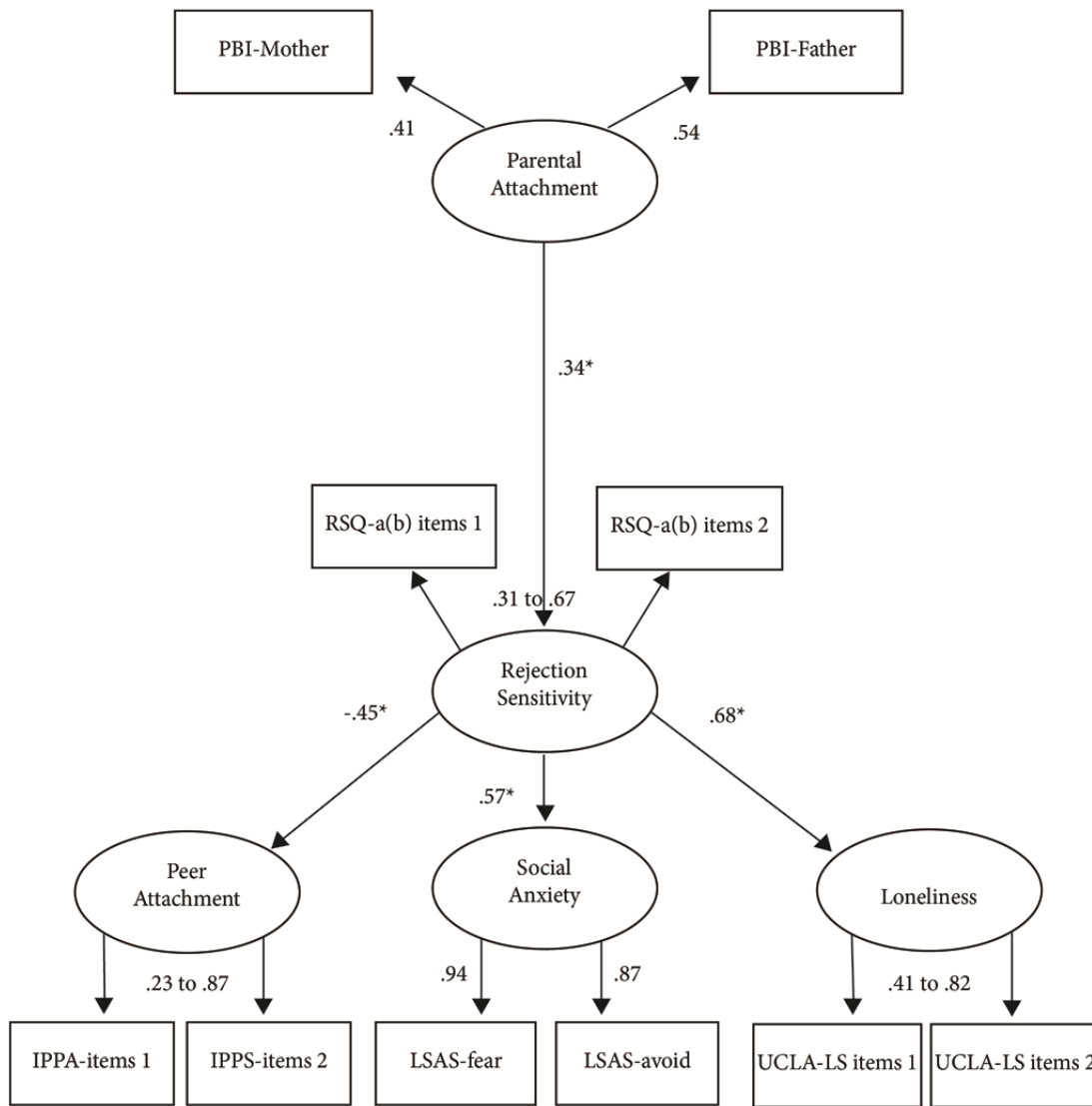


Figure 3. *Primary Model—Relational Victimization and Parental Attachment Indirectly Affecting Adult Outcomes through Mediating Variables*



*Note:* PBI = Parental Bonding instrument; RRVQ = Retrospective Relational Victimization Questionnaire; RSQ = Rejection Sensitivity Questionnaire; IPPA-P = Inventory of Parent & Peer Attachment—Peer scale; UCLA-LS = UCLA Loneliness Scale; LSAS = Liebowitz Social Anxiety Scale. \* = latent paths with  $p < .05$

Figure 4. *Alternative Model—Parental Attachment Only Indirectly Affecting Adult Outcomes through Mediating Variables*



*Note:* PBI = Parental Bonding instrument; RRVQ = Retrospective Relational Victimization Questionnaire; RSQ = Rejection Sensitivity Questionnaire; IPPA-P = Inventory of Parent & Peer Attachment—Peer scale; UCLA-LS = UCLA Loneliness Scale; LSAS = Liebowitz Social Anxiety Scale. \* = latent paths with  $p < .05$

social anxiety—fear scores. However, as expected, observed variables associated with one latent variable (i.e. RRVQ, PBI, and LSAS subscales, and RSQ, IPPA-P, and UCLA-LS items) were more highly correlated with each other than they were with measures of other latent variables, suggesting good convergent and discriminant validity of the measures (Kline, 2005). The relationships between variables were examined further through testing the structural equation models.

Table 2: *Correlation Matrix for Measures*

Measures	1	2	3	4	5	6	7	8
1. RRVQ	1							
2. PBI (mother)	.074	1						
3. PBI (father)	.034	.223**	1					
4. RSQ	.279*	.130*	.173**	1				
5. UCLA-LS	.432**	.221*	.114	.566**	1			
6. IPPA	-.412**	-.142*	-.017	-.354**	-.715**	1		
7. LSAS (fear)	.332**	.002	.108	.505**	.466*	-.258**	1	
8. LSAS (avoidance)	.323**	.015	.171**	.463**	.532**	-.361**	.826**	1

\* $p > .05$

\*\* $p > .01$

*Note:* PBI = Parental Bonding instrument; RRVQ = Retrospective Relational Victimization Questionnaire; RSQ = Rejection Sensitivity Questionnaire; IPPA-P = Inventory of Parent & Peer Attachment—Peer scale; UCLA-LS = UCLA Loneliness Scale; LSAS = Liebowitz Social Anxiety Scale

### *Model Fit*

As described in Chapters One and Two, two a priori models (see Figures 1 and 2) were tested for this study. This a priori selection is preferred over post-hoc modifications and

tweaking of the data (Biddle & Martin, 1987). As recommended by Martens (2005), multivariate normality of the data was assessed to ensure normal distribution of data and its fitness for use in the structural equation model. Q-Q plots of the individual indicator variables demonstrated that data were normally distributed, and all kurtosis indices were less than ten, which suggests that the data is acceptable for measurement (Kline, 2005).

Tomarken and Waller (2003) state that in SEM, a model is considered to have a good fit “when there is minimal discrepancy between the observed variances and covariances among the directly measured variables that are implied by the model.” Goodness-of-fit statistics are often used to determine the success of models. Two types of such statistics are commonly reported: the likelihood ratio chi-square, and a class of measures known as fit indices. For the current study, the chi-square test, Tucker-Lewis index (TLI), comparative fit index (CFI), root mean square error of approximation (RMSEA), and Akaike information criterion (AIC) were examined.

Small chi-squares with non-significant p-values are usually considered to represent models with good fit, but due to the strong effect of sample size on power, significant chi-squares are common and do not necessarily suggest an “important” result (Kline, 2005). For the current study, the primary model (Model 1) resulted in  $\chi^2 = 6202.51, p < .001$ , while the alternate model (Model 2) resulted in  $\chi^2 = 5202.53, p < .001$ . When the chi-square was divided by degrees of freedom the result for Models 1 was 2.44, and Model 2 was 2.43. Carmines and McIver (1981) state that  $\chi^2/df$  amounts between 1 and 3 indicate adequate fit between the data and the model. Examining chi-squares and degrees of freedom alone do not provide overwhelming support for one model or the other being a good fit, but it also does not preclude such an interpretation.

For the TLI (Bentler & Bonett, 1980) and CFI (Bentler, 1990), coefficients range from 0 to 1, with values closer to 1 indicating a better fit. Values for both models were TLI = .73 and CFI = .75. A cutoff of .95 is recommended for these indices (Schumacker & Lomax, 2004), suggesting that neither model is a particularly good fit to the data.

The RMSEA calculates how well the model, with unknown but optimally chosen parameter estimates, would fit the population's covariance matrix (Byrne, 1998), with higher values indicating poorer fit. Cutoffs of  $\leq .10$  (Weston & Gore, 2006) and  $\leq .05$  (Schumacker & Lomax, 2004) have been recommended. Values for both models evaluated were .07. The upper and lower 90% confidence intervals for both models were .068 and .073 respectively, which includes values which are an acceptable fit if the  $\leq .10$  cutoff is used.

#### *Structural Model Estimates*

SEM parameters were estimated using maximum likelihood (ML), as recommended by Schumacker & Lomax (2004), and are reported in Table 3 for the primary model and Table 4 for the alternative model. The estimates maximize the likelihood that observed data were drawn from a particular population with parameters equal to those reported. Confirmatory factor analyses indicated that all the loadings from latent to observed variables are significant at a  $p < .05$  level, suggesting that the relationships between the observed and latent variables was consistent with the hypotheses underlying the two models.

To determine significance of the paths between latent variables, the regression weights (unstandardized factor loadings) of the paths were examined (see Tables 3 and 4). When the unstandardized estimates are divided by their standard error, a z-score is formed which is evaluated for its significance ( $p$ ); Weston and Gore (2006) indicate that a path coefficient is significant if the critical ratio value is greater than 1.96 at  $p \leq .05$ . Once this is calculated, the

Table 3: Maximum Likelihood Estimates For the Primary Model: Standardized and Unstandardized Estimates, Standard Error, Critical Ratio, and Significance

	Primary Model Variables		Estimate Unstandardized	S.E.	C.R.	p	Estimate Standardized
RV Elem.	<---	Attachment	.386	.417	.926	.355	.092
RV Middle	<---	Attachment	.162	.294	.551	.581	.036
RV Middle	<---	RV Elem.	.836	.055	15.240	<.001	.786
RV High	<---	Attachment	-.254	.261	-9.71	.331	-.061
RV High	<---	RV Middle	.831	.051	16.131	<.001	.896
Rejection Sensitivity	<---	RV Elem.	.076	.026	2.879	<.001	.315
Rejection Sensitivity	<---	RV Middle	.078	.050	1.567	.117	.347
Rejection Sensitivity	<---	RV High	.109	.048	2.266	<.001	.447
Rejection Sensitivity	<---	Attachment	.322	.136	2.365	<.001	.317
Peer Attachment	<---	Rejection Sensitivity	-.087	.016	-5.592	<.001	-.473
Social Anxiety	<---	Rejection Sensitivity	2.351	.339	6.927	<.001	.580
Loneliness	<---	Rejection Sensitivity	.099	.015	6.543	<.001	.699
PBI-Mother	<---	Attachment	1.000				.373
PBI-Father	<---	Attachment	1.858	.958	1.940	.052	.586
E-amount	<---	RV Elem.	1.000				.920
E-intensity	<---	RV Elem.	1.576	.055	28.698	<.001	.989
M-amount	<---	RV Middle	1.000				.879
M-intensity	<---	RV Middle	1.319	.056	23.749	<.001	.956
H-amount	<---	RV High	1.000				.862
H-intensity	<---	RV High	1.270	.064	19.819	<.001	.909
RSQ1	<---	Rejection Sensitivity	1.000				.505
RSQ2	<---	Rejection Sensitivity	1.246	.203	6.142	<.001	.451
RSQ3	<---	Rejection Sensitivity	.761	.132	5.773	<.001	.415
RSQ4	<---	Rejection Sensitivity	1.577	.232	6.791	<.001	.526
RSQ5	<---	Rejection Sensitivity	1.451	.200	7.259	<.001	.581
RSQ6	<---	Rejection Sensitivity	.937	.180	5.213	<.001	.364
RSQ7	<---	Rejection Sensitivity	.622	.138	4.509	<.001	.305
RSQ8	<---	Rejection Sensitivity	1.135	.170	6.660	<.001	.508
RSQ9	<---	Rejection	1.520	.197	7.725	<.001	.648

		Sensitivity					
RSQ10	<---	Rejection Sensitivity	.832	.155	5.358	<.001	.376
RSQ11	<---	Rejection Sensitivity	.958	.126	7.608	<.001	.632
RSQ12	<---	Rejection Sensitivity	1.423	.184	7.739	<.001	.650
RSQ13	<---	Rejection Sensitivity	.834	.115	7.236	<.001	.580
RSQ14	<---	Rejection Sensitivity	.778	.131	5.945	<.001	.432
RSQ15	<---	Rejection Sensitivity	1.193	.151	7.881	<.001	.672
RSQ16	<---	Rejection Sensitivity	1.424	.195	7.295	<.001	.587
RSQ17	<---	Rejection Sensitivity	1.713	.227	7.537	<.001	.619
RSQ18	<---	Rejection Sensitivity	1.389	.181	7.666	<.001	.638
LSAS-FEAR	<---	Social Anxiety	1.000				.942
LSAS- AVOID	<---	Social Anxiety	.858	.064	13.413	<.001	.877
IPPA1	<---	Peer Attachment	1.000				.584
IPPA2	<---	Peer Attachment	.974	.128	7.618	<.001	.506
IPPA3	<---	Peer Attachment	1.159	.120	9.657	<.001	.695
IPPA4	<---	Peer Attachment	1.261	.124	10.202	<.001	.755
IPPA5	<---	Peer Attachment	1.300	.138	9.387	<.001	.667
IPPA6	<---	Peer Attachment	1.411	.137	10.279	<.001	.763
IPPA7	<---	Peer Attachment	1.284	.132	9.704	<.001	.699
IPPA8	<---	Peer Attachment	1.197	.115	10.392	<.001	.776
IPPA9	<---	Peer Attachment	.481	.128	3.762	<.001	.230
IPPA10	<---	Peer Attachment	.983	.143	6.894	<.001	.449
IPPA11	<---	Peer Attachment	1.352	.147	9.185	<.001	.647
IPPA12	<---	Peer Attachment	1.362	.127	10.746	<.001	.819
IPPA13	<---	Peer Attachment	1.465	.132	11.141	<.001	.870
IPPA14	<---	Peer	1.378	.127	10.853	<.001	.832

IPPA15	<---	Attachment Peer	1.589	.145	10.961	<.001	.847
IPPA16	<---	Attachment Peer	1.404	.139	10.098	<.001	.743
IPPA17	<---	Attachment Peer	1.299	.120	10.848	<.001	.831
IPPA18	<---	Attachment Peer	.967	.117	8.286	<.001	.564
IPPA19	<---	Attachment Peer	1.596	.149	10.702	<.001	.813
IPPA20	<---	Attachment Peer	1.594	.148	10.794	<.001	.825
IPPA21	<---	Attachment Peer	1.395	.127	10.956	<.001	.845
IPPA22	<---	Attachment Peer	.624	.139	4.502	<.001	.278
IPPA23	<---	Attachment Peer	1.009	.120	8.421	<.001	.576
IPPA24	<---	Attachment Peer	1.399	.134	10.412	<.001	.779
IPPA25	<---	Attachment Peer	1.335	.136	9.827	<.001	.713
UCLA-LS1	<---	Loneliness	1.000				.565
UCLA-LS2	<---	Loneliness	1.515	.166	9.118	<.001	.677
UCLA-LS3	<---	Loneliness	1.525	.159	9.579	<.001	.731
UCLA-LS4	<---	Loneliness	1.596	.164	9.750	<.001	.752
UCLA-LS5	<---	Loneliness	1.153	.152	7.592	<.001	.524
UCLA-LS6	<---	Loneliness	1.406	.152	9.278	<.001	.696
UCLA-LS7	<---	Loneliness	1.766	.177	9.974	<.001	.782
UCLA-LS8	<---	Loneliness	1.319	.150	8.810	<.001	.643
UCLA-LS9	<---	Loneliness	1.023	.129	7.944	<.001	.556
UCLA-LS10	<---	Loneliness	1.345	.143	9.428	<.001	.713
UCLA-LS11	<---	Loneliness	1.396	.146	9.566	<.001	.730
UCLA-LS12	<---	Loneliness	1.500	.161	9.315	<.001	.699
UCLA-LS13	<---	Loneliness	1.834	.180	10.179	<.001	.810
UCLA-LS14	<---	Loneliness	1.702	.165	10.293	<.001	.825
UCLA-LS15	<---	Loneliness	1.026	.151	6.795	<.001	.454
UCLA-LS16	<---	Loneliness	1.530	.159	9.617	<.001	.736
UCLA-LS17	<---	Loneliness	.843	.135	6.248	<.001	.410
UCLA-LS18	<---	Loneliness	1.640	.166	9.899	<.001	.772
UCLA-LS19	<---	Loneliness	1.391	.150	9.249	<.001	.692
UCLA-LS20	<---	Loneliness	1.361	.148	9.215	<.001	.688

*Note.* S.E. = Standard Error; C.R. = Critical Ratio.



Table 4: *Maximum Likelihood Estimates For the Alternative Model: Standardized and Unstandardized Estimates, Standard Error, Critical Ratio, and Significance*

	Alternative Model Variables		Estimate-Standardized	S.E.	C.R.	<i>p</i>	Estimate Unstandardized
Rejection Sensitivity	<---	Attachment	.312	.136	2.300	<.001	.338
Peer Attachment Social Anxiety Loneliness	<---	Rejection Sensitivity	-.085	.016	-5.436	<.001	-.454
	<---	Rejection Sensitivity	2.354	.344	6.838	<.001	.574
	<---	Rejection Sensitivity	.098	.015	6.451	<.001	.683
PBI-Mother	<---	Attachment	1.000				.406
PBI-Father	<---	Attachment	1.572	.819	1.920	<.001	.539
RSQ1	<---	Rejection Sensitivity	1.000				.501
RSQ2	<---	Rejection Sensitivity	1.279	.207	6.177	<.001	.459
RSQ3	<---	Rejection Sensitivity	.757	.133	5.677	<.001	.409
RSQ4	<---	Rejection Sensitivity	1.609	.237	6.788	<.001	.531
RSQ5	<---	Rejection Sensitivity	1.480	.204	7.245	<.001	.588
RSQ6	<---	Rejection Sensitivity	.948	.182	5.196	<.001	.365
RSQ7	<---	Rejection Sensitivity	.638	.140	4.556	<.001	.310
RSQ8	<---	Rejection Sensitivity	1.153	.174	6.641	<.001	.511
RSQ9	<---	Rejection Sensitivity	1.556	.202	7.713	<.001	.657
RSQ10	<---	Rejection Sensitivity	.838	.157	5.322	<.001	.376
RSQ11	<---	Rejection Sensitivity	.959	.128	7.501	<.001	.626
RSQ12	<---	Rejection Sensitivity	1.453	.188	7.716	<.001	.658
RSQ13	<---	Rejection Sensitivity	.828	.117	7.109	<.001	.571
RSQ14	<---	Rejection Sensitivity	.777	.132	5.866	<.001	.427
RSQ15	<---	Rejection Sensitivity	1.198	.154	7.783	<.001	.668
RSQ16	<---	Rejection Sensitivity	1.450	.199	7.272	<.001	.592
RSQ17	<---	Rejection Sensitivity	1.747	.232	7.515	<.001	.625

RSQ18	<---	Rejection Sensitivity	1.411	.185	7.622	<.001	.642
LSAS- FEAR	<---	Social Anxiety	1.000				.945
LSAS- AVOID	<---	Social Anxiety	.853	.064	13.235	<.001	.874
IPPA1	<---	Peer Attachment	1.000				.584
IPPA2	<---	Peer Attachment	.974	.128	7.620	<.001	.506
IPPA3	<---	Peer Attachment	1.159	.120	9.658	<.001	.695
IPPA4	<---	Peer Attachment	-1.260	.124	-10.204	<.001	.755
IPPA5	<---	Peer Attachment	1.299	.138	9.387	<.001	.667
IPPA6	<---	Peer Attachment	1.410	.137	10.280	<.001	.763
IPPA7	<---	Peer Attachment	1.284	.132	9.706	<.001	.700
IPPA8	<---	Peer Attachment	1.197	.115	10.393	<.001	.776
IPPA9	<---	Peer Attachment	-.482	.128	-3.764	<.001	.230
IPPA10	<---	Peer Attachment	.982	.143	6.891	<.001	.449
IPPA11	<---	Peer Attachment	1.351	.147	9.184	<.001	.646
IPPA12	<---	Peer Attachment	1.362	.127	10.749	<.001	.819
IPPA13	<---	Peer Attachment	1.465	.131	11.143	<.001	.870
IPPA14	<---	Peer Attachment	1.378	.127	10.855	<.001	.832
IPPA15	<---	Peer Attachment	1.589	.145	10.964	<.001	.847
IPPA16	<---	Peer Attachment	1.404	.139	10.100	<.001	.743
IPPA17	<---	Peer Attachment	1.299	.120	10.850	<.001	.831
IPPA18	<---	Peer Attachment	.966	.117	8.286	<.001	.564
IPPA19	<---	Peer Attachment	1.596	.149	10.705	<.001	.813
IPPA20	<---	Peer Attachment	1.594	.148	10.796	<.001	.825
IPPA21	<---	Peer Attachment	1.395	.127	10.958	<.001	.845
IPPA22	<---	Peer Attachment	.624	.139	4.499	<.001	.278

IPPA23	<---	Peer Attachment	1.009	.120	8.420	<.001	.576
IPPA24	<---	Peer Attachment	1.399	.134	10.414	<.001	.779
IPPA25	<---	Peer Attachment	1.335	.136	9.829	<.001	.713
UCLA-LS1	<---	Loneliness	1.000				.566
UCLA-LS2	<---	Loneliness	1.514	.166	9.125	<.001	.677
UCLA-LS3	<---	Loneliness	1.524	.159	9.587	<.001	.731
UCLA-LS4	<---	Loneliness	1.594	.163	9.759	<.001	.752
UCLA-LS5	<---	Loneliness	1.153	.152	7.603	<.001	.524
UCLA-LS6	<---	Loneliness	1.406	.151	9.290	<.001	.696
UCLA-LS7	<---	Loneliness	1.765	.177	9.986	<.001	.782
UCLA-LS8	<---	Loneliness	1.317	.149	8.813	<.001	.643
UCLA-LS9	<---	Loneliness	1.023	.129	7.953	<.001	.556
UCLA-LS10	<---	Loneliness	1.344	.142	9.440	<.001	.713
UCLA-LS11	<---	Loneliness	1.394	.146	9.574	<.001	.730
UCLA-LS12	<---	Loneliness	1.498	.161	9.323	<.001	.699
UCLA-LS13	<---	Loneliness	1.832	.180	10.189	<.001	.810
UCLA-LS14	<---	Loneliness	1.700	.165	10.303	<.001	.825
UCLA-LS15	<---	Loneliness	1.026	.151	6.802	<.001	.454
UCLA-LS16	<---	Loneliness	1.529	.159	9.628	<.001	.736
UCLA-LS17	<---	Loneliness	.843	.135	6.252	<.001	.410
UCLA-LS18	<---	Loneliness	1.638	.165	9.908	<.001	.772
UCLA-LS19	<---	Loneliness	1.390	.150	9.260	<.001	.692
UCLA-LS20	<---	Loneliness	1.361	.147	9.225	<.001	.688

*Note.* S.E. = Standard Error; C.R. = Critical Ratio.

standardized scores (or regression weights) can be used to compare the strength of relationships among latent variables (Weston & Gore, 2006). The figures for both the primary and alternative models include the standardized coefficients between variables. For the primary model, paths from all developmental phases of relational victimization to rejection sensitivity, and all paths of rejection sensitivity to predicted outcomes, had significant effects in the direction expected (positive for all paths except rejection sensitivity to peer attachment). Contrary to expectations, paths from parental attachment to relational victimization were very weak, and not significant (see Table 3 and Figure 3). For the alternative model, all paths had significant effects in the expected directions (again, positive for all paths except rejection sensitivity to peer attachment; see Table 4 and Figure 4).

When variables are predicted to influence outcomes through a mediator (in this case, rejection sensitivity), a full or partial portion of the effect of the initial variables is thought to be transmitted to the final ones. It is recommended that intervening variables, or mediation effects, be revealed by testing the joint significance of the two (direct) effects that comprise the indirect effect (MacKinnon et al., 2002). These indirect effects were calculated and reported in Table 5 for all variables mediated by rejection sensitivity. These effects were relatively small for both models, ranging from -.15 to .31. The largest indirect effects on outcome variables were found in the primary model for high school relational victimization.

As a point of comparison,  $R^2$  estimates (squared multiple correlations, or proportion of variance explained by the model) are listed in Table 6 for latent variables for both the primary and alternative models. The primary model explained the largest proportions of variance for relational victimization in middle (62%) and high school (79%) developmental periods and loneliness (49%), a more moderate proportion for rejection sensitivity (27%), peer attachment

Table 5: *Standardized Indirect Effects*

Indirect Path	Primary Model	Alternative Model
Peer Attachment ← Rejection Sensitivity ← Attachment	-.15	-.15
Social Anxiety ← Rejection Sensitivity ← Attachment	.19	.19
Loneliness ← Rejection Sensitivity ← Attachment	.22	.23
Peer Attachment ← Rejection Sensitivity ← RV Elem.	-.15	-
Social Anxiety ← Rejection Sensitivity ← RV Elem.	.19	-
Loneliness ← Rejection Sensitivity ← RV Elem.	.22	-
Peer Attachment ← Rejection Sensitivity ← RV Middle	-.16	-
Social Anxiety ← Rejection Sensitivity ← RV Middle	.20	-
Loneliness ← Rejection Sensitivity ← RV Middle	.24	-
Peer Attachment ← Rejection Sensitivity ← RV High	-.21	-
Social Anxiety ← Rejection Sensitivity ← RV High	.26	-
Loneliness ← Rejection Sensitivity ← RV High.	.31	-

Note: RV = Relational Victimization

Table 6: *Squared Multiple Correlations and Percent of Variance for Latent Variables*

Model	RV- Elem	RV- Middle	RV- High	Parental Attachment	Rejection Sensitivity	Loneliness	Peer Attachment	Social Anxiety
Primary Model	.001 (0%)	.624 (62%)	.795 (79%)	.000 (0%)	.274 (27%)	.488 (49%)	.224 (22%)	.336 (34%)
Alternative Model	--	--	--	.000 (0%)	.114 (11%)	.467 (47%)	.206 (21%)	.329 (33%)

Note: RV = Relational Victimization

(22%) and social anxiety (34%), and almost none for relational victimization in elementary school and parental attachment. The alternative model explained 47% of the variance in loneliness, 21% in peer attachment, 33% in social anxiety, 11% in rejection sensitivity, and none in parental attachment. Taken as a whole, the primary model explained a greater amount of

variance for latent variables than did the alternative model, which was expected since the primary model is more complicated and contains more paths and variables. The potential significance of this difference is addressed below.

#### *Significance of Structural Model Differences*

The AIC is a test of model selection which measures the information lost when a given model is used to describe reality, and it may be used to compare competing models and determine the best-fitting one, with smaller numbers indicating better fit (Schumacker & Lomax, 2004). The value for Model 1 is 5611.53, while the value for Model 2 is 6664.52. This would suggest that the full (primary) model which includes relational victimization is a better fit than the one which does not.

To determine whether the removal of paths from the primary model to create the alternative model made a significant difference in model fit, a chi-square difference test was performed. This test involves a calculation of chi-square and degrees of freedom differences between the two models when the same data set is used (Martens, 2005), to determine if adding paths is statistically justified. The null hypothesis of this test is that fit is the same for the two models. In that case, the more parsimonious (alternative) model would be preferred. For this study, the primary model (which includes more paths) had a chi-square value of 6202.52 with 2543 degrees of freedom, and the alternative model had a value of 5201.53 with 2140 degrees of freedom. The difference between these was  $\Delta\chi^2 = 1000.99$  with 403 degrees of freedom. This is significant at a  $p < .001$  level, which indicates that the additional paths in the primary model (in this case, paths to relational victimization scores) are statistically justified; i.e. the primary model provides a better fit to the observed data than does the alternative. This information, coupled with other comparative fit statistics such as the AIC, gives evidence for the primary model,

which includes relational victimization as associated with psychosocial adjustment problems, being an improvement over the alternative model, which does not. However, neither model meets many of the commonly accepted standards for “good fit.”

## CHAPTER FIVE—Discussion

The purpose of this study was to better understand the associations between relational victimization and early parental attachment, their contributions to rejection sensitivity, and their potential long-term consequences in early adulthood. To accomplish this, it was necessary to design and validate a retrospective scale to measure frequency, intensity, and developmental phases of childhood relational victimization experiences. During the scale validation process, the newly-developed scale was administered to a sample of college students and compared with others measures that were expected to associate (or not associate) with RRVQ scores in predicted ways. In the primary study, the scale was administered to college students along with other measures of early parental attachment, rejection sensitivity, peer attachment, social anxiety, and loneliness, in order to assess the fit of the two theory-driven proposed structural models.

By most indications, the creation and validation of the Retrospective Relational Victimization Questionnaire (RRVQ) was a success. It is unique from other assessments of relational victimization because it focuses strictly on relational (as opposed to physical, verbal, and/or less-specific “indirect”) types of aggression, and it distinguishes between developmental phases of victimization occurrences, which may be important in understanding differential impact depending on the time period in which a person is victimized. The content of the questionnaire items and the attention to differential aspects of the same experiences (age, and frequency/intensity) makes this survey a thorough, accurate, and consistent indicator of the relational victimization experience; it matched or even exceeded internal consistency results of many of the other widely-used and validated measures to which it was compared.



The exploratory and confirmatory factor analyses performed on this measure corroborated the hypothesized distinction between experiences in developmental periods, but not the distinction between the frequency and perceived intensity of the events described in the survey. The separate factor structure of items related to experiences in elementary, middle, and high school developmental periods suggests that adults remember types of relational victimization differently in terms of the age of occurrence, lending support to the notion that victimization is a dynamic process which changes as the individual develops through childhood.

In regard to the lack of factor distinction between frequency and intensity items in this scale, it may be the case that the RRVQ, as tested in these studies, is overly thorough in accounting for both these aspects of relational victimization experiences. Although literature suggests that the same experiences may have differential impact and be interpreted as more or less harmful by the victim depending on the gender, age, or personality characteristics (Crick & Grotpeter, 1995; Galen & Underwood, 1997; Crick, Grotpeter, & Bigbee, 2002; Goldstein and Tisak, 2004), analyses found no evidence of frequency and intensity items having distinct factors. While different individuals may indeed experience similar experiences as more or less harmful, neither sample seemed to acknowledge a difference between “how much this experience occurred” and “how much this experience harmed me.” This may be due to the similarity between the concepts or naturally-occurring memory degradation between the event and survey administration. In either case, the RRVQ would likely gain parsimony without losing informative value if the frequency and intensity sub-items were integrated into single items.

No significant gender differences were found between RRVQ scores in either study. This finding is not groundbreaking (Archer, 2004; Archer & Coyne, 2005; Dempsey & Storch, 2008), but is interesting in the context of historical research regarding female aggression and relational

victimization. The lay-person's term for relational aggression -- "Mean Girls' Syndrome"— is based on the understanding that these behaviors are characteristic of females; if not exclusively so, then at least more commonly. The finding that boys and girls experience similar amounts of relationally aggressive behaviors from their peers allowed data for both male and female participants to be included in the primary model, and suggested that this type of bullying may be an issue with consequences for both boys and girls; targeting only girls for research and intervention would ignore many of the victims. The results from this project point to boys being involved in relational aggression and victimization, and hence support the continued study and development of intervention programs for both genders.

It was hypothesized that both early parental attachment and relational victimization experiences would contribute to the amount of rejection sensitivity demonstrated by the participants. The results support this hypothesis to a moderate degree. The results from both parental attachment and relational victimization scales indicated small to moderate correlations with the rejection sensitivity scale, and the estimates of the structural paths were significant between parental attachment and rejection sensitivity, as well as relational victimization and rejection sensitivity. This suggests that episodes of both parental and peer rejection/neglect contribute to the formation of expectations and reactions regarding future rejection experiences, corroborating already existing evidence (Laible, Carlo, & Raffaelli, 2000) that implies both family *and* peer experiences may influence the development of "working models" of others during social interaction.

It was predicted that relational victimization experiences would provide additional information (over and above parental attachment) in predicting psychosocial adjustment outcome. This hypothesis was also supported by the results from this study. All three of the

predicted outcomes (peer attachment, social anxiety, and loneliness) were moderately and significantly associated with relational victimization, while only one (loneliness) had a small but significant association with parental attachment. Also, in comparing a primary model of outcomes that included relational victimization with an alternative model that did not, the model that included peer experiences was a slightly better fit, and statistically justified the inclusion of relational victimization in the model. In the context of childhood experiences which carry harmful effects into adulthood, this provides additional evidence that relational victimization is indeed interpersonally traumatic, with long-lasting negative consequences; perhaps even more so than parental attachment, in the cases of damaged peer attachment and social anxiety in adulthood. This is consistent with evidence found by Storch, Brassard, and Masia-Warner (2003), Siegel, La Greca, and Harrison (2008), and Dempsey and Storch (2008), who all discovered longitudinal links between relational aggression and poorer psychosocial outcomes, especially in regard to social anxiety.

The finding that past relational victimization is more strongly related to rejection sensitivity than is parental attachment, as well as the three measured psychosocial outcomes, is interesting to note, considering the model suggested by Downey, Khouri and Feldman (1996) includes only early parental attachment as a factor influencing the course of rejection sensitivity. While attachment was significantly related to rejection sensitivity, relational victimization seemed to influence its development more so. It has been found that those with high peer attachment fare better in psychosocial adjustment than those with high parental attachment in adolescents (Laible, Carlo, & Raffaelli, 2000); in the college-aged samples used in the present studies, it may be that peers are a more present concern and have a greater impact on everyday life and emotional states than do parents. If this is the case, both past and present peer problems

may be first and foremost on the participants' minds, and they may associate more strongly to students' current psychosocial adjustment in self-report measures than do parental experiences, which are less salient.

It was hypothesized that the strength of early parental attachment would be significantly related to the experience of childhood relational victimization; specifically, that it would directly influence the amount of victimization (those with high levels of parental attachment would have a lower frequency of victimization experiences), or act as a buffer to the experiences (those with high and low parental attachment would have similar frequencies of relational victimization, but the intensity would be perceived as less for those with high attachment). Support was found for neither hypothesis. Significant correlations were not found between parental attachment scores and relational victimization scores in either study, even when a differentiation was made between relational victimization frequency and intensity scores.

This finding is surprising, given the results of previous research that suggests that the quality of early parental attachment tends to influence the experience of victimization and peer rejection in schoolchildren (Wood, Emmerson, & Cowan, 2004; Cowan & Cowan, 2004, Dykas, Ziv, & Cassidy, 2008). While family factors are often targeted as determinants of peer functioning, other factors may also influence social acceptance, rejection, and victimization; for example, physical appearance, athleticism, and academic prowess have been found to affect levels of peer acceptance (Vannatta, Gartstein, Zeller, & Noll, 2009). Other personality and environmental factors (such as shyness or a lack of diversity of social experiences) may also affect peer interactions (Miller & Coll, 2007), regardless of parental involvement and attachment. It is possible that for the samples surveyed in this project, factors other than attachment quality were more influential in determining whether the participants were

relationally victimized or accepted as children. It may also be the case that adult participants' memories were poor for their childhood parent and/or peer interactions, so the potential association between the two was not apparent.

Another hypothesis of the project involved the differential effects of relational victimization occurrences that take place during developmental phases of a child's life. As previously discussed, relational victimization strategies tend to increase in sophistication as a child ages, and friendships tend to increase in importance as well (Crick et al., 2001). Because of this, one would expect that these experiences would be maximally harmful in adolescence, when peer relationships take on a larger role in the child's life and victimization strategies are at their most refined. This hypothesis was supported to a small degree by the results. The variables of middle and high school relational victimization contributed to far more variance in the model than did elementary school scores. The primary model path from high school relational victimization to rejection sensitivity was stronger than those from middle and elementary school to rejection sensitivity, although not dramatically so. When simple correlations are examined, results are mixed; high school frequency and intensity of relational victimization are more highly correlated than elementary or middle school totals with peer attachment scores, but relational victimization score correlations are similar across all ages with rejection sensitivity, social anxiety, and loneliness. It may be the case that other factors are more important than age in determining the strength of rejection sensitivity and the resulting negative outcomes, such as social support, personality factors, or whether the relational victimization is occurring simultaneously with other types of bullying experiences.

The final hypothesis was that the primary model, which included both childhood parental attachment and relational victimization as contributing factors to loneliness, peer attachment, and

social anxiety in adulthood as mediated by rejection sensitivity, would fit the data better than an alternative one that included only parental attachment as a contributing factor. This hypothesis was only supported to a small degree. Neither model met commonly accepted standards for good fit, but when differences were found (the AIC scores and the chi-square difference test), they tended to be in favor of the primary model, which included relational victimization. The primary model explained a greater proportion of the variance in scores, than did the alternative model. This may indicate that including relational victimization provides a better, if not complete, explanation for the psychosocial adjustment outcomes tested here. This provides some evidence that relational victimization, like other types of peer abuse and parental neglect, is harmful to long-term mental health and psychosocial adjustment, and does not disprove the assertion that this type of victimization is more than transiently harmful, and therefore is an important problem to address in youth.

The finding that neither model meets standards for “good” fit warrants further discussion. It is possible that while relational victimization and/or parental attachment are contributing factors to adult psychosocial adjustment, they do not provide a sufficiently thorough explanation to a complex problem. Social anxiety, loneliness, and peer attachment may be influenced by a variety of biological, environmental, cultural, and personality factors (Kendler, Karkowski, & Prescott, 1999; Mineka & Zinberg, 1995; Okano, 1994; Beck, Emery, & Greenberg, 1985; Boomsma, Willemsen, Dolan, Hawkley, & Cacioppo, 2005) that were not captured by these models. Also or alternatively, poor parental attachment and relational victimization may be more strongly associated to outcomes that were not measured in these models, such as depression. It could also be the case that weaknesses in the sampling procedure or research design (discussed further below) contributed to the lack of fit, rather than models themselves

being flawed. In any case, the less than optimal fit of both models points to a need to reexamine the theories underlying the relationships between parental attachment, relational victimization, and rejection sensitivity. It is perhaps the case that while attachment theory is useful in predicting features of adult romantic relationships or intimate friendships (Hazan & Shaver, 1987), it is less predictive of more general, superficial peer relationships which often provide a context for relational victimization.

### *Strengths and Limitations*

This study is heavily rooted in theory and adds to current knowledge about relational victimization and its long-term effects. One of the greatest strengths of the retrospective approach used here is its efficiency; it collected information from years of childhood experiences (from childhood to adolescence) and related them to current adult functioning. Using retrospective measures to capture past experiences was more efficient and less costly than the alternative of a longitudinal design, which would follow individuals from elementary school to college. However, memory degradation is inherent in using retrospective measures; participants may not have remembered certain events or may have recalled them inaccurately (Squire, 1989), or maybe have reinvented past memories to suit their current state of mind or circumstances (Ross, 1989). If either occurs, the measure cannot capture a true representation of the past. In examining the accuracy of retrospective recall of childhood events, it has been found that remembrance of adults for past events – especially those requiring recall of psychological states and family processes – tends to be rather poor, with low to moderate correlations with longitudinal data collected at the time the events took place (Yarrow, Cambell, & Burton, 1970; Henry et al., 1994). It was hoped that the use of a sample of college students, for whom many of these experiences are fairly fresh memories, limited the amount of memory degradation and

distortion that took place and its impact on the validity of the measures. Rivers (2001) found that both children and adults recalled previously-documented bullying events in their histories with relative specificity, accuracy, and constancy more than a year after they occur, providing some evidence that traumatic peer events are memorable in long-term contexts. Still, it is accepted that the retrospectively-collected information is not as accurate or valid as it would be if collected at the time these childhood events took place.

Another limitation of using one InQsit survey for each administration was the inability to counterbalance the measures. Although having one survey link increased convenience for the respondents, it is possible this may have created order effects in their responses, as the content of some instruments may influence participant responses for other instruments taken afterward (Heppner, Kivlighan, & Wampold, 1999). While such testing effects were not anticipated in this study, it is possible the order created some unknown impact on participant responses. If a similar project is undertaken, this limitation may be corrected by using a survey program that allows for randomization of the measures it contains.

Using a sample of Midwestern college students has its own limitations; because the population is fairly homogenous in age, ethnicity, and education, and the results may not generalize to more diverse populations. For example, it has been found that African-American and Hispanic youth are more prone to experience violence and aggression than are Caucasian youth, regardless of income level (Crouch, Hanson, Saunders, Kilpatrick, & Resnick, 2000); these individuals may be more likely to have intense experiences with all types of victimization, which may impact the severity of the outcomes. Administering the RRVQ to more heterogeneous populations could provide valuable information about the extent and diversity (or



lack thereof) of these experiences among different populations, and replicating the findings with various groups would also increase the external validity of the results found here.

One of the benefits of utilizing two samples within this study was that it provided an additional opportunity to validate the new measure. With two samples indicating that the measure is internally reliable and related in predictable and expected ways to other administered measures, it can be said with greater certainty that the measure is a valid one, and usable in other academic contexts. The questionnaire may also be helpful in clinical/educational populations, and validation with these samples is encouraged so that the usefulness of the measure can continue to be assessed.

Information was not collected about participants' current experiences with relational victimization, which may have been a hindrance to understanding the associations between the experiences and their outcomes. It is known that relational victimization is not only a problem of childhood (Linder, Crick, & Collins, 2002), and that adults can and do engage in relationally aggressive strategies. Without assessing for current relational victimization, it cannot be said with certainty that the outcomes are associated with childhood experiences, or a mere reaction to current stressors. Collecting both past and current information about victimization would also provide valuable information about the persistence and stability of these experiences -- how likely is it that the people suffering most extensively from relational victimization as an adult are the same ones who were bullied as children? Future research would benefit from including this link from past to present victimization.

Also, while previous research has already demonstrated that relational victimization is indeed distinct from other types of aggression (such as physical and verbal abuse) and carries its own risks for negative outcomes, it may have been additionally useful to collect information

about participants' experiences with these other types of victimization, as well. It may be that predicting outcomes is possible to a greater degree when all types of interpersonal victimization are accounted for, or that the relational victimization experience is more or less harmful depending on its interplay with other types of abuse. It is recommended that future endeavors include comprehensive assessment of all types of victimization so that it may be determined with greater certainty that relational victimization is affecting the measured outcomes, independent of other episodes of more overt types of aggression.

### *Clinical and Educational Implications*

Despite lack of robust confirmation for the models tested in this project, it is clear from other data that participants taking the RRVQ typically remembered several relational victimization experiences from every developmental phase of childhood, with the great majority endorsing at least a few items as occurring often and being very hurtful to them. The moderate-strength structural paths from relational victimization to rejection sensitivity (and the even clearer connections between rejection sensitivity, peer attachment, social anxiety, and loneliness) suggest that this type of bullying is far from harmless, strengthening the assertion that relational victimization should not be dismissed as unimportant simply because it is less visible and more ubiquitous than direct aggression. In fact, part of the danger of relational victimization is that it is often too subtle to be discerned by adults who may otherwise manage the situation (Crick & Grotpeter, 1995), and even when it is discerned it may be written off as relatively benign teasing. Parents and educators may fail to recognize it, ignore it, or dismiss it. Counselors may fail to assess for relational abuse when they collect histories regarding more general victimization, potentially ignoring a significant source of both children's and adults' psychosocial distress.

In the wake of concern over school violence, many educators have developed programs and interventions designed to target bullying in schools (Ferguson, San Miguel, Kilburn, & Sanchez, 2007). In light of the results supporting relational aggression and victimization as a relatively common and potentially harmful problem, it may be helpful for schools to provide education for teaching staff regarding its nature and consequence; this could increase awareness and prepare educators to recognize and contain episodes when they occur. It may also decrease bias caused by myths related to relational aggression; in particular, staff may be taught that relational aggression is not simply a “female” problem and it may apply to all their students. If anti-bullying programs are implemented, it would be helpful for them to specifically target relational forms of bullying as well as physical and verbal. For instance, the Ophelia Project, an organization devoted to promoting awareness of relational aggression, runs a comprehensive school-based program targeting bullying, with special emphasis on relational forms; this program has been shown to decrease approval of relational aggression in students and led to less victimization from pre- to post-test (Nixon & Werner, 2010). There is evidence that these types of programs are effective in the short-term (e.g., Merrell, Gueldner, Ross, & Isava, 2005; Smith, Schneider, Smith, & Ananiadou, 2004), although results are not so clear for the programs instituting long-term change. Programs that emphasize positive behavior support and social/emotional learning are especially recommended for targeting problems with relational aggression (Merrell, Buchanan, & Tran, 2006). Continual work to develop, test, and put to use effective bullying interventions (which target all types of bullying, including relational victimization) would likely be a worthwhile endeavor and may diminish the negative psychosocial outcomes associated with these problems.

There are also clinical implications for the finding that childhood relational victimization may be associated with later adjustment problems. While it is possible that individuals (children and adults alike) may seek out or be referred to therapy specifically for issues relating to past or current relational victimization, it is more likely that clients do not recognize the potential association between these experiences and their current psychosocial distress. It is recommended that when collecting client histories, clinicians include relational victimization in their assessment of trauma experiences. If the client has a history of extensive and/or intense relational victimization, this may be explored in the therapeutic setting. Victims need a safe place to tell their stories of peer abuse and process the emotional damage that resulted from it (Brand, 1996), and if the victimization is ongoing, therapy is also an opportunity for the client to gain greater competence in social interaction, assertiveness skills with peers, and coping skills in dealing with relational trauma (Clarke & Kiselica, 1997; Roberts & Coursol, 1996).

#### *Future Directions in Research*

This study provided additional information about the nature of relational victimization experiences, and also yielded additional possibilities for future research. The RRVQ, which was developed and validated for use in this project, showed promise as a thorough, reliable, and valid assessment for relational victimization; however, because factor analyses indicated that the frequency and intensity items were not separate factors as hypothesized, re-testing the measure with those items integrated into single entities would ensure that the shorter survey retains its reliability and validity, and is still suitable for academic use.

It would additionally be useful to administer the RRVQ to new populations, both to provide additional validity information across samples, and also to add to the understanding of differential experiences with relational victimization between cultural groups. There is reason to

believe that a child's ethnicity may influence his or her experience of peer maltreatment and aggression (Huesmann & Guerra, 1997), but this is not extensively supported as most research on peer victimization uses predominantly Caucasian, middle-class samples (Storch, Nock, Masia-Warner, & Barlas, 2003). If the RRVQ were administered to samples across a range of ethnicities and social strata, researchers might explore the potential differences and better-identify high-risk groups. This is also relevant for clinical and community populations versus the type of university sample used in this project.

Although neither model tested in this project was found to be a good fit, strong and clear correlations and paths were found between relational victimization and the outcome variables, which suggests that they may be associated in ways that were not predicted by these particular models. It is not recommended that models be tested post hoc in order to find a better fitting one; however, the use of new samples to test similar models may uncover one with a more adequate fit. Specifically, the primary model paths from early parental attachment to all developmental periods of relational victimization were extremely weak; if early attachment to parents does not impact the relational victimization experience as theory would predict, removing those paths may improve the fit of this model and warrant additional attention to other factors influencing susceptibility to and resilience from relational victimization.

Finally, while the efficiency and short-term nature of these studies were strengths of the project, the memory degradation associated with adults remembering childhood experiences cannot be avoided using a retrospective self-report design, as discussed above. Longitudinal research would assist in controlling this memory bias and be additionally helpful in assessing the directionality of the relationship between victimization and psychosocial issues, as it could account for social anxiety, loneliness, and peer attachment problems that may have potentially

pre-dated victimization experiences. Using a longitudinal design, as well as a multi-informant approach when assessing attachment and relational victimization experiences, would likely provide more a more accurate and qualitatively richer data source to follow the potential road from early interpersonal trauma to adult psychosocial issues.

### *Summary and Conclusions*

Despite some methodological limitations, this project provided additional and important insight about relational victimization and its potential consequences. The Retrospective Relational Victimization Questionnaire (RRVQ) was found to be a reliable and valid measure of adults' memories for childhood relational victimization experiences across developmental periods. It could additionally be streamlined by collapsing the items measuring the "frequency" and "intensity" of each experience. The scale shows promise for further use and assessment in research settings, and may also be useful in clinical settings to identify potential sources of relational trauma. Further evaluation of the scale in different populations would provide more information about external validity.

The literature review highlighted the prevalence of childhood relational victimization and its potential interactions with early parental attachment, which may contribute to rejection sensitivity and resulting influences on adult peer attachment, loneliness, and social anxiety. Results from structural equation modeling did not find either of the proposed models to be well-fitting, but maximum likelihood estimates of individual paths (as well as correlational analyses) found significant and hypothesized connections between relational victimization and later psychosocial adjustment constructs. Similar hypothesized associations were not found for early parental attachment and relational victimization. This suggests that relational victimization may be influential on adult psychosocial functioning, although not necessarily in the hypothesized

ways. The lack of gender differences found in either study points to relational victimization being a problem for boys and girls alike.

These findings have implications for parents, educators, and clinicians, who may be in a position of managing episodes of children's relational aggression and victimization when they occur, or treating the potential emotional and social consequences later in victims' lives. It also presents a challenge for future researchers to continue investigating the exact nature of this potential transmission process from early relational damage to later adjustment problems. The continued use and development of the RRVQ could provide information with both scholarly and practical uses, and additional research about the long-term effects of relational aggression and victimization will give needed attention to a prevalent and important social problem that may impact individuals across their life-spans.

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## Appendix A

### Informed Consent

Thank you for your interest in this study. Please read the informed consent and then sign below to give your consent to participate in the study

#### The Role of Childhood Experiences in Adult Adjustment

The purpose of this research project is to examine how events and relationships experienced in childhood impact adjustment later in life. For this project, you will be asked to complete a series of questionnaires about your childhood relationships with parents and peers, as well as ones relating to your current ways of relating to others. It will take you approximately 45 minutes to complete the questionnaires and you will receive one hour of research credit for your participation.

All of your information will be maintained as anonymous. Data will be stored in a secure location.

The foreseeable risks or ill effects from participating in this study are minimal. There is a small possibility that answering some of the questions on the questionnaires may evoke some emotional feelings. Should you experience any uncomfortable feelings, there are counseling services available to you as a student through the Ball State University Counseling Center (285-1736).

One benefit of participating in this study is that you may gain a better understanding of how you interact in relationships and how those relationships impact your relationship confidence and emotional well-being.

Your participation in this study is completely voluntary and you are free to withdraw from the study at anytime without penalty or prejudice from the researcher. Please feel free to ask any questions of the investigator before signing the Informed Consent form and beginning the study, and at any time during the study.

For one's rights as a research subject, the following person may be contacted: Melanie Morris, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-5070.

To give your consent to participate in the study, sign below. By giving your signature, you are agreeing to participate in the research study entitled "The Role of Childhood Experiences in Adult Adjustment" and agreeing that the study has been explained to you and your questions have been answered to your satisfaction. If you have any additional questions at any time before, during, or after the study you can email the researcher at [jlgoodwin@bsu.edu](mailto:jlgoodwin@bsu.edu). You can print this informed consent form to keep for future reference.

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## Appendix B

### Demographic Questionnaire

Please fill out the following demographic information:

Gender.

- A. Male
- B. Female

Age.

\_\_\_\_\_

Year in School

- A. Freshman
- B. Sophomore
- C. Junior
- D. Senior
- E. Other (5<sup>th</sup> year and beyond)

Ethnicity.

- A. Caucasian
- B. African American
- C. Asian
- D. Latino/Latina
- E. Other, please specify \_\_\_\_\_

Your relationship status.

- A. Single
- B. Dating
- C. Living with Partner
- D. Engaged
- F. Married
- G. Divorced
- H. Other, please specify \_\_\_\_\_

## Appendix C

### The Retrospective Relational Victimization Scale

Instructions: Reflect back on your school experiences, or the associated periods in your life (ages 6-10 for elementary school; 11-13 for middle school or junior high, 14-18 for high school) and mark the extent that you experienced the following situations with your peer/s during the times indicated. If you experienced the situation at all please respond to the follow-up question.

#### Question A

1. This never occurred    2. This occurred rarely    3. This occurred occasionally    4. This occurred somewhat often    5. This occurred often

#### Question B

- 1 *Did not affect me*    2 *Affected me somewhat*    3 *Affected me moderately*    4 *Affected me considerably*    5 *Affected me severely*

#### *Elementary School (age 6-10)*

1A. At times, my peer/s purposely excluded me from our group of friends.

1      2      3      4      5

1B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

2A. My peer/s tried to control me by threatening to withdraw friendship if I didn't do what they wanted.

1      2      3      4      5

2B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

3A. My peer/s sometimes would imitate me in a negative way to others.

1      2      3      4      5

3B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

4A. My peer/s socially isolated me at times.

1      2      3      4      5

4B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

5A. I got the "silent treatment" or was ignored when I tried to interact with my peer/s.

1      2      3      4      5

5B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

6A. My peer/s tried to hurt my relationships with other people by telling them negative things about me. 1 2 3 4 5

6B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

7A. I had peer/s make it clear to me that they would not be my friend unless I did what they wanted. 1 2 3 4 5

7B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

8A. My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do. 1 2 3 4 5

8B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

9A. To get back at me, my peer/s tried to steal my dating partner. 1 2 3 4 5

9B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

10A. My peer/s tried to damage my reputation by spreading lies and rumors about me. 1 2 3 4 5

10B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

11A. Sometimes I felt as if my peer/s were excluding me from group activities to make me feel bad. 1 2 3 4 5

11B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

12A. My peer/s would tell other people to stop hanging out with me or stop liking me. 1 2 3 4 5

12B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

13A. I found out that my peer/s were making fun of me behind my back. 1 2 3 4 5

13B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5



14A. My peer/s tried to damage my reputation by passing along negative information about me.  
1      2      3      4      5

14B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

15A. My peer/s would sometimes ignore me or refuse to listen to me when I talked to them.  
1      2      3      4      5

15B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

16A. I've had a peer replace me with another friend in order to upset me.  
1      2      3      4      5

16B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

17A. My peer/s would ignore me until I did something that they wanted me to do.  
1      2      3      4      5

17B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

### *Middle School or Junior High (ages 11-13)*

1A. At times, my peer/s purposely excluded me from our group of friends.  
1      2      3      4      5

1B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

2A. My peer/s tried to control me by threatening to withdraw friendship if I didn't do what they wanted.  
1      2      3      4      5

2B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

3A. My peer/s sometimes would imitate me in a negative way when they thought I wouldn't find out about it.  
1      2      3      4      5

3B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

4A. My peer/s socially isolated me at times.

1      2      3      4      5

4B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

5A. I got the “silent treatment” or was ignored when I tried to interact with my peer/s.

1      2      3      4      5

5B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

6A. My peer/s tried to hurt my relationships with other people by telling them negative things about me.

1      2      3      4      5

6B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

7A. I had peer/s make it clear to me that they would not be my friend unless I did what they wanted.

1      2      3      4      5

7B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

8A. My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do.

1      2      3      4      5

8B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

9A. To get back at me, my peer/s tried to steal my dating partner.

1      2      3      4      5

9B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

10A. My peer/s tried to damage my reputation by spreading lies and rumors about me.

1      2      3      4      5

10B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

11A. Sometimes I felt as if my peer/s were excluding me from group activities to make me feel bad.

1      2      3      4      5

11B. *If this occurred, how much did this experience affect you?*

1      2      3      4      5

12A. My peer/s would tell other people to stop hanging out with me or stop liking me.  
1      2      3      4      5

12B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

13A. I found out that my peer/s were making fun of me behind my back.  
1      2      3      4      5

13B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

14A. My peer/s tried to damage my reputation by passing along negative information about me.  
1      2      3      4      5

14B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

15A. My peer/s would sometimes ignore me or refuse to listen to me when I talked to them.  
1      2      3      4      5

15B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

16A. I've had a peer replace me with another friend in order to upset me.  
1      2      3      4      5

16B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

17A. My peer/s would ignore me until I did something that they wanted me to do.  
1      2      3      4      5

17B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

### *High School (ages 14-18)*

1A. At times, my peer/s purposely excluded me from our group of friends.  
1      2      3      4      5

1B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

2A. My peer/s tried to control me by threatening to withdraw friendship if I didn't do what they wanted. 1 2 3 4 5

2B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

3A. My peer/s sometimes would imitate me in a negative way when they thought I wouldn't find out about it. 1 2 3 4 5

3B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

4A. My peer/s socially isolated me at times.  
1 2 3 4 5

4B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

5A. I got the "silent treatment" or was ignored when I tried to interact with my peer/s.  
1 2 3 4 5

5B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

6A. My peer/s tried to hurt my relationships with other people by telling them negative things about me. 1 2 3 4 5

6B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

7A. I had peer/s make it clear to me that they would not be my friend unless I did what they wanted.  
1 2 3 4 5

7B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

8A. My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do. 1 2 3 4 5

8B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

9A. To get back at me, my peer/s tried to steal my dating partner.  
1 2 3 4 5

9B. *If this occurred, how much did this experience affect you?*  
1 2 3 4 5

10A. My peer/s tried to damage my reputation by spreading lies and rumors about me.  
1      2      3      4      5

10B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

11A. Sometimes I felt as if my peer/s were excluding me from group activities to make me feel bad.  
1      2      3      4      5

11B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

12A. My peer/s would tell other people to stop hanging out with me or stop liking me.  
1      2      3      4      5

12B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

13A. I found out that my peer/s were making fun of me behind my back.  
1      2      3      4      5

13B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

14A. My peer/s tried to damage my reputation by passing along negative information about me.  
1      2      3      4      5

14B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

15A. My peer/s would sometimes ignore me or refuse to listen to me when I talked to them.  
1      2      3      4      5

15B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

16A. I've had a peer replace me with another friend in order to upset me.  
1      2      3      4      5

16B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

17A. My peer/s would ignore me until I did something that they wanted me to do.  
1      2      3      4      5

17B. *If this occurred, how much did this experience affect you?*  
1      2      3      4      5

## Appendix D

### The Parental Bonding Instrument

The following scale is listed after each item:

Very like	Moderately like	Moderately unlike	Very unlike
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#### **MOTHER FORM**

*This questionnaire lists various attitudes and behaviors of parents. As you remember your MOTHER in your first 16 years would you place a tick in the most appropriate box next to each question.*

1. Spoke to me in a warm and friendly voice
2. Did not help me as much as I needed
3. Let me do those things I liked doing
4. Seemed emotionally cold to me
5. Appeared to understand my problems and worries
6. Was affectionate to me
7. Liked me to make my own decisions
8. Did not want me to grow up
9. Tried to control everything I did
10. Invaded my privacy
11. Enjoyed talking things over with me
12. Frequently smiled at me
13. Tended to baby me
14. Did not seem to understand what I needed or wanted
15. Let me decide things for myself
16. Made me feel I wasn't wanted
17. Could make me feel better when I was upset
18. Did not talk with me very much
19. Tried to make me feel dependent on her/him
20. Felt I could not look after myself unless she/he was around

21. Gave me as much freedom as I wanted
22. Let me go out as often as I wanted
23. Was overprotective of me
24. Did not praise me
25. Let me dress in any way I pleased
<b>FATHER FORM</b>
This questionnaire lists various attitudes and behaviors of parents. As you remember your FATHER in your first 16 years would you place a tick in the most appropriate box next to each question.
1. Spoke to me in a warm and friendly voice
2. Did not help me as much as I needed
3. Let me do those things I liked doing
4. Seemed emotionally cold to me
5. Appeared to understand my problems and worries
6. Was affectionate to me
7. Liked me to make my own decisions
8. Did not want me to grow up
9. Tried to control everything I did
10. Invaded my privacy
11. Enjoyed talking things over with me
12. Frequently smiled at me
13. Tended to baby me
14. Did not seem to understand what I needed or wanted
15. Let me decide things for myself
16. Made me feel I wasn't wanted
17. Could make me feel better when I was upset
18. Did not talk with me very much
19. Tried to make me feel dependent of her/him
20. Felt I could not look after myself unless she/he was around

21. Gave me as much freedom as I wanted
22. Let me go out as often as I wanted
23. Was overprotective of me
24. Did not praise me
25. Let me dress in any way I pleased



## Appendix E

### The Rejection Sensitivity Questionnaire

Instructions: Each of the items below describes things college students sometimes ask of other people. Please imagine that you are in each situation. You will be asked to answer the following questions:

1) How concerned or anxious would you be about how the other person would respond?

The following scale is used for and listed after each of these questions:

very unconcerned                      very concerned  
1   2   3   4   5   6

2) How do you think the other person would be likely to respond?

The following scale is used for and listed after each of these questions:

very unlikely                              very likely  
1   2   3   4   5   6

1. You ask someone in class if you can borrow his/her notes.
2. You ask your boyfriend/girlfriend to move in with you.
3. You ask your parents for help in deciding what programs to apply to.
4. You ask someone you don't know well out on a date.
5. Your boyfriend/girlfriend has plans to go out with friends tonight, but you really want to spend the evening with him/her, and you tell him/her so.
6. You ask your parents for extra money to cover living expenses.
7. After class, you tell your professor that you have been having some trouble with a section of the course and ask if he/she can give you some extra help.
8. You approach a close friend to talk after doing or saying something that seriously upset him/her.
9. You ask someone in one of your classes to coffee.
10. After graduation you can't find a job and you ask your parents if you can live at home for a while.
11. You ask your friend to go on vacation with you over Spring Break.
12. You call your boyfriend/girlfriend after a bitter argument and tell him/her you want to see him/her.
13. You ask a friend if you can borrow something of his/hers.
14. You ask your parents to come to an occasion important to you.
15. You ask a friend to do you a big favor.
16. You ask your boyfriend/girlfriend if he/she really loves you.
17. You go to a party and notice someone on the other side of the room, and then you ask them to dance.
18. You ask your boyfriend/girlfriend to come home to meet your parents.

## Appendix F

### The Liebowitz Social Anxiety Scale

Response continuum:

None	Mild	Moderate	Severe
0	1	2	3

Instructions: Read each situation carefully and answer two questions about that situation. The first question asks how anxious or fearful you feel in the situation. The second question asks how often you avoid the situation. If you come across a situation that you ordinarily do not experience, we ask that you imagine "what if you were faced with that situation," and then, rate the degree to which you would fear this hypothetical situation and how often you would tend to avoid it. Please base your ratings on the way that the situations have affected you in the last week. Fill out the following scale with the most suitable answer provided below.

<b>Situation</b>
1. Telephoning in public
2. Participating in small groups
3. Eating in public places
4. Drinking with others in public places
5. Talking to people in authority
6. Acting, performing, or giving a talk in front of an audience
7. Going to a party
8. Working while being observed
9. Writing while being observed
10. Calling someone you don't know very well
11. Talking with people you don't know very well
12. Meeting strangers
13. Urinating in a public bathroom
14. Entering a room when others are already seated
15. Being the center of attention
16. Speaking up at a meeting
17. Taking a written test
18. Expressing appropriate disagreement or disapproval to people you don't know very well
19. Looking at people you don't know very well in the eyes
20. Giving a report to a group
21. Trying to pick up someone
22. Returning goods to a store where returns are normally accepted

23. Giving an average party
24. Resisting a high pressure sales person

## Appendix G

### **Inventory of Parent and Peer Attachments (Peer Section)**

Instructions: Please mark to what extent the followings statements about your friends are true.

Response categories:

1. Almost never or never true
2. Not very true
3. Sometimes true
4. Often true
5. Almost always or always true

1. I like to get my friends' point of view on things I'm concerned about
2. My friends can tell when I'm upset about something
3. When we discuss things, my friends care about my point of view
4. When I discuss things, my friends care about my point of view
5. I wish I had different friends
6. My friends understand me
7. My friends help me to talk about my difficulties
8. My friends accept me as I am
9. I feel the need to be in touch with my friends more often
10. My friends don't understand what I'm going through these days
11. I feel alone or apart when I'm with my friends
12. My friends listen to what I have to say
13. I feel my friends are good friends
14. My friends are fairly easy to talk to
15. When I am angry about something, my friends try to be understanding
16. My friends help me to understand myself better
17. My friends care about how I am
18. I feel angry with my friends
19. I can count on my friends when I need to get something off my chest
20. I trust my friends
21. My friends respect my feelings
22. I get upset a lot more than my friends know about
23. It seems as if my friends are irritated with me for no reason
24. I can tell my friends about my problems and troubles
25. If my friends know something is bothering me, they ask me about it

Appendix H

**UCLA Loneliness Scale (Version 3)**

*Instructions:* The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by writing a number in the space provided.

<u>NEVER</u>	<u>RARELY</u>	<u>SOMETIMES</u>	<u>ALWAYS</u>
1	2	3	4

- \_\_\_\_\_ 1. How often do you feel that you are "in tune" with the people around you?
- \_\_\_\_\_ 2. How often do you feel like you lack companionship?
- \_\_\_\_\_ 3. How often do you feel that there is no one you can turn to?
- \_\_\_\_\_ 4. How often do you feel alone?
- \_\_\_\_\_ 5. How often do you feel part of a group of friends?
- \_\_\_\_\_ 6. How often do you feel that you have a lot in common with the people around you?
- \_\_\_\_\_ 7. How often do you feel that you are no longer close to anyone?
- \_\_\_\_\_ 8. How often do you feel your interests and ideas are not shared by those around you?
- \_\_\_\_\_ 9. How often do you feel outgoing and friendly?
- \_\_\_\_\_ 10. How often do you feel close to people?
- \_\_\_\_\_ 11. How often do you feel left out?
- \_\_\_\_\_ 12. How often do you feel that your relationships with others are not meaningful?
- \_\_\_\_\_ 13. How often do you feel that no one really knows you well?
- \_\_\_\_\_ 14. How often do you feel isolated from others?
- \_\_\_\_\_ 15. How often do you feel you can find companionship when you want it?
- \_\_\_\_\_ 16. How often do you feel that there are people who really understand you?
- \_\_\_\_\_ 17. How often do you feel shy?
- \_\_\_\_\_ 18. How often do you feel that people are around you but not with you?
- \_\_\_\_\_ 19. How often do you feel that there are people you can talk to?
- \_\_\_\_\_ 20. How often do you feel that there are people you can turn to?

## Appendix I

### THE RETROSPECTIVE RELATIONAL VICTIMIZATION QUESTIONNAIRE--Scale Development

Childhood relational victimization has previously been assessed using a variety of self, peer, parent, and teacher reports, with several popular measures validated and used by researchers (Cullerton-Sen & Crick, 2005; Crick & Grotpeter, 1996; Crick & Bigbee, 1998; Vernberg et al, 1999; Lev-Wiesel, Nuttman-Shwartz, & Sternberg, 2006; Dempsey & Storch, 2008). The majority of these measures were unable to be utilized in this study because they necessitate concurrent measurement; the few that are intended for retrospective use do not capture relational victimization across time periods or account for the differences between the frequency and intensity of the experiences (Lev-Wiesel, Nuttman-Shwartz, & Sternberg, 2006; Dempsey & Storch, 2008). For these reasons, it was necessary to develop a new method to retrospectively examine the childhood history of relational victimization experiences of adults. This chapter will describe the construction of the Retrospective Relational Victimization Questionnaire (RRVQ), as well as the participants, procedures, and analyses used to validate the RRVQ.

#### Scale Construction and Pilot Study

During the initial stages of scale development, several steps were taken to create items that accurately reflected experiences of relational victimization. DeVellis (2003) recommends guidelines for good practice in scale construction, including extensive literature reviews regarding the intended measured construct, reviews of the initial item pool by experts, administering the items to members of the target population for feedback about readability, and

subjecting the items to a factor analyses as well as evaluating them for internal consistency. In this section, development of the item pool, scale items, and preliminary factor analysis are described.

### *Item Development*

In order to prepare for development of this scale, an extensive review was conducted of the literature to determine what actions were considered to be representative of relational aggression. Archer and Coyne (2005), Crick and Grotpeter (1995), Crick (1995 and 1997), Crick and Bigbee (1998), Prinstein, Boergers, and Vernberg (2001), and Werner and Crick (1999) were reviewed. It was determined that relational victimization should be defined by elements such as social exclusion, gossiping, and threats of discontinuation of friendship. Based on these defining characteristics of relational victimization, a comprehensive list of potential scale items was generated to accurately capture the actions reflecting this construct. Once all items were constructed, the list consisted of 20 items such as “My peer/s socially isolated me at times,” “My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do,” and “I’ve had a peer replace me with another friend in order to upset me.” The full original item pool is reported in Appendix J.

### *Expert Feedback*

The list of 20 items was reviewed by three scholars who have researched and written extensively about relational aggression: Dr. Nikki Crick, Dr. Cheryl Dellasega, and Dr. Dorothy Espelage. The suggestions they provided were used to increase the specificity of the scale to the construct of relational victimization; for example, it was made clearer in each item that damage to a relationship (friendship or dating) was a primary goal for the aggressive act. Three items were dropped because the experts suggested they appeared to fit other types of aggression, rather

than just relational (“I have received anonymous notes from my peers saying negative or hurtful things about me,” “My peer/s sometimes played mean-spirited practical jokes on me,” and “I sometimes received abusive phone calls from my peer/s that were meant to hurt me”). This resulted in a 17-item scale that assessed the frequency of relational victimization experiences on a 5-point Likert-type scale, with 1 indicating “this never occurred” and 5 indicating “this occurred often.”

### *Readability*

The modified and reduced item pool was reviewed by colleagues of the researcher and other graduate students from a medium-sized Midwestern university, who rated the scale for readability and clarity; small changes to wording and formatting were made based on their suggestions. For example, qualifiers such as “To hurt me...” or “...when they thought I wouldn’t find out about it” were deleted to simplify wording and maintain clarity of the items.

Once the items were revised in this manner, the scale was analyzed for readability with Microsoft Word using the Flesch reading ease and Flesch-Kincaid grade level formulas. Reading ease was calculated at 78.3, and grade level was calculated at 5.8. This suggests that the scale would likely be understandable to individuals with at least a fifth-grade education, or a student older than eleven years (Flesch, 1948), which is well within the range of the intended participant pool. No further modifications were made to the items or their wording at this point.

### *Preliminary Analyses*

Preliminary analyses were performed on the 17 items (Appendix K) to assess internal consistency and unidimensionality of the set, using a convenience sample of 19 women and 20 men, ranging in age from 19 to 60 ( $M = 26.6$ ,  $SD = 8.04$ ). The sample was 94.9% Caucasian and 5.1% African-American. Convenience samples are often used in small-scale pilot studies in



which ease of access to the sample is preferred over establishing parameters for an entire population (Cozby, 2001). Participants were employees of a computer technical call center in a medium-sized Midwestern city, and graduate students of a counseling psychology graduate program at a medium-sized Midwestern university. In total, 39 separate questionnaires were completed. Two of these were excluded from the final analysis due to missing data.

DeVellis (2003) recommends that a factor analysis be performed early in the scale development process, to determine if the items indeed constitute a unidimensional set. An exploratory factor analysis was conducted to examine the construct being measured by the scale. Items were extracted using principal component analysis. Analysis of the item set found that it had one single, stable factor structure and very high internal consistency (.97). These results suggest that, as expected, the 17 items belong to the same factor of retrospective relational victimization and are largely homogenous. This pilot study provided initial evidence that the RRVQ items accurately and reliably assess the construct of retrospective relational victimization.

### *Modifications*

Of interest in this project is whether the same relational victimization experiences produce different effects dependent on how harmful the individual interprets the events, or what ages in childhood the events occur. To assess for these facets of relational victimization, it was necessary to modify the 17-item scale. Because the analyses provided initial evidence that the item set is unifactorial and internally consistent, it was expected that repeating them three times for different time periods would result in three distinct factors.

To modify the scale, the original 17 items were repeated three times for elementary, middle, and high school. For each of the scale items, a second rating was added for the respondent to rate how much the experience affected them (see Appendix C). Following scale

construction and modification, the resulting Retrospective Relational Victimization Questionnaire (RRVQ) is a 102-item, self-report scale which measures relational victimization experiences in early childhood, middle childhood, and adolescence. The same 34 items are repeated three times to assess for different time periods. Participants are cued to remember the time period by reminding them of corresponding grades in school (elementary, middle, and high school). The scale is a retrospective measure, and hence items are phrased as if the test-taker had experienced the act (a declarative statement, e.g., “My peer/s socially isolated me at times”). Responses are equally weighted on a Likert-type scale. Following each item is a request for the participant to rate the frequency of the occurrence (the “A” sub-items; from 1 = “This never occurred” to 5 = “This occurred often”) as well as the intensity of the experience (the “B” sub-items; “If this occurred, how much did this experience affect you?”, from 1 = “Did not affect me” to 5 = “Affected me severely”). If the action described did not occur for the A item, the response for the B item is rated as 0. To obtain a total score, the sum of all items is taken, with a possible range of scores from 51 to 510. To obtain subscale scores of “elementary school,” “middle school,” and “high school,” scores may be calculated separately for items 1A through 17B, 18A through 34B, and 35A through 51B, with possible scores for each subscale ranging from 17 to 170. Higher scores are indicative of greater amounts of relational victimization.

The psychometric properties of this scale were further assessed with a new and larger sample. Tests of the modified RRVQ’s factor structure, reliability, and construct validity are reported next.

## Scale Validation

### *Participants*

The sample of 160 participants consisted of undergraduate counseling psychology students from a medium-sized Midwestern state university. The participants were recruited from

this university's counseling psychology research pool, and they took part in return for research credit for their courses. They were required to be at least 18 years of age, and to have had interaction with both their mothers and fathers for the first 16 years of their lives. This age prerequisite coincides with that of the Parental Bonding Instrument (see below), a measure administered during tests of construct validity.

A demographic form was used to collect demographic information about the participants, such as sex, age, relationship status, and year in school (Appendix B). The participants consisted of 48 males and 112 females. The age range was between 18 and 47, ( $M = 22.40$ ,  $SD = 5.04$ ). The majority were seniors (34.2%) and juniors (29.2%), with the rest divided among freshmen (6.8%), sophomores (14.3%), and those beyond four years at university (14.3%). The ethnicities of the participants were 83.2% Caucasian, 11.8% African-American, and 1.9% Latino/Latina. Their relationship status consisted of 38.5% single, 41.0% dating, 6.2% living with a partner, 6.2% engaged, and 6.8% married.

### *Procedure*

Sign-up sheets were posted on the Counseling Psychology human subjects opportunities board. Interested participants provided their email addresses to the researcher, who responded to them with an email reply detailing how to access the online survey, and assigning them an identification number to be used should they choose to participate. After consenting to take part in the online survey, participants used the InQsit program to remotely complete the measures (Time 1 administration). Upon completing all the measures, the participants emailed the researcher to notify her of their participation. Approximately four weeks later, the researcher replied to the emails to remind the participants to complete the surveys for a second time, and they followed the same procedure (Time 2 administration). When the participants emailed the

researcher indicating that both administrations of the surveys were complete, they received two research credits. The data were securely stored in a password-protected electronic location. The identification numbers assigned to the participants at the start of the study were used to track Time 1 and Time 2 participation.

### *Factor Structure*

Factor analyses are often used to assess the constructs measured by a scale (Gorsuch, 1983). Because of the significant modifications that occurred to the scale after the pilot study analyses, as well as extremely limited research and theory regarding the dimensions of relational victimization experiences, it was considered appropriate to examine the RRVQ's factor structure using exploratory factor analysis (EFA). EFA assists in determining the number and content of latent variables that underlie a set of items (DeVellis, 2003).

Based on the preliminary factor analysis performed during the scale construction pilot study, which found a single factor structure for the scale version which did not include sub-items and subscales for frequency/intensity or developmental stages of relational victimization, it was expected that multiple factors might emerge in this modified version of the scale. If the frequency and intensity of relational victimization and developmental age are significant dimensions, six factors would be likely to be identified in the factor analysis.

The Kaiser-Meyer-Olkin measure of sample adequacy (.85) and significant Bartlett's test of sphericity ( $p < .001$ ) indicated the sample was appropriate for factor analysis. Factors were extracted using principle component analysis, and a promax rotation was used.

Initial scree plots suggested that a three-factor solution was the best fit for the scale. The initial analysis yielded 17 Eigenvalues above 1.0; however, the first three factors accounted for 55.96% of the variance in the sample, while the remaining 14 each contributed a relatively small

amount. When instructed to extract the predicted six factors, no strong patterns emerged for the items. This information, as well as the information from the scree plot, indicated that only three factors should be retained. Because the scale accounts for three separate developmental periods of life, it was hypothesized that these item sets may contribute to the separate factors; such hypotheses may guide the number of factors selected for extraction in exploratory factor analysis (DeCoster, 1998). When a fixed number of extracted factors was set at three, clear differential patterns emerged for items relating to elementary, middle, and high school periods of life (see pattern matrix in Table A-1). Items intended to belong to each age group fell appropriately in the corresponding factor. The three factors were moderately correlated (see Table A-2).

Items measuring frequency and intensity were not discernable as separate factors, neither in the scale as a whole, or within subscales for developmental stages. Responses for frequency and intensity sub-items were essentially the same (see Table A-1). Participants may have been unable to retrospectively discriminate between how much relational victimization they experienced and how much it affected them at the time, or may have interpreted the frequency and intensity sub-items as asking the same question. Because of this finding, it was determined that the RRVQ is a three-factor scale, with each factor relating to the time period during which the relational victimization historically occurred (elementary, middle, and high school). Despite the apparent redundancy of the frequency and intensity sub-items, all items were retained to prevent the need for new scale modification and sample collection, and to preserve the integrity of the data collected from this sample.

#### *Descriptive Statistics*

Descriptive statistics for this sample were calculated for all scales and subscales used in the study, and are reported in Table A-3. RRVQ total scores had a mean of 164.75 ( $SD = 89.98$ )

Table A-1: *Pattern Matrix for Three-Factor Principle Components Analysis of the RRVQ*

	Component			<b>Q19A</b>	.149	.131	<b>.609</b>	<u>Q38B</u>	-.065	<u>.693</u>	.051
	1	2	3								
				<b>Q19B</b>	.160	.115	<b>.644</b>	<u>Q39A</u>	-.038	<u>.695</u>	.003
				<b>Q20A</b>	-.004	.113	<b>.743</b>	<u>Q39B</u>	-.023	<u>.681</u>	.027
<i>Q1A</i>	.799	-.044	.002	<b>Q20B</b>	-.010	.092	<b>.729</b>	<u>Q40A</u>	-.166	<u>.764</u>	.065
<i>Q1B</i>	.677	-.016	.012	<b>Q21A</b>	.069	-.071	<b>.790</b>	<u>Q40B</u>	-.176	<u>.712</u>	.053
<i>Q2A</i>	.687	.107	.060	<b>Q21B</b>	.005	-.052	<b>.818</b>	<u>Q41A</u>	.181	<u>.790</u>	-.154
<i>Q2B</i>	.642	.129	.032	<b>Q22A</b>	.088	.008	<b>.652</b>	<u>Q41B</u>	.193	<u>.703</u>	-.082
<i>Q3A</i>	.734	-.077	.106	<b>Q22B</b>	.064	.086	<b>.609</b>	<u>Q42A</u>	.053	<u>.769</u>	-.050
<i>Q3B</i>	.680	-.084	.158	<b>Q23A</b>	-.013	-.067	<b>.881</b>	<u>Q42B</u>	-.008	<u>.679</u>	.056
<i>Q4A</i>	.897	-.062	-.075	<b>Q23B</b>	-.079	-.039	<b>.840</b>	<u>Q43A</u>	-.042	<u>.392</u>	.127
<i>Q4B</i>	.787	.021	-.013	<b>Q24A</b>	-.110	.034	<b>.785</b>	<u>Q43B</u>	-.063	<u>.452</u>	.055
<i>Q5A</i>	.780	-.003	-.087	<b>Q24B</b>	-.053	.070	<b>.723</b>	<u>Q44A</u>	-.092	<u>.721</u>	.105
<i>Q5B</i>	.821	-.033	-.061	<b>Q25A</b>	-.092	.162	<b>.653</b>	<u>Q44B</u>	-.140	<u>.754</u>	.061
<i>Q6A</i>	.788	-.103	.082	<b>Q25B</b>	.004	.198	<b>.584</b>	<u>Q45A</u>	.039	<u>.800</u>	-.034
<i>Q6B</i>	.638	-.047	.162	<b>Q26A</b>	.058	.143	<b>.320</b>	<u>Q45B</u>	.041	<u>.729</u>	.081
<i>Q7A</i>	.649	.100	.017	<b>Q26B</b>	.087	.122	<b>.299</b>	<u>Q46A</u>	.137	<u>.749</u>	-.085
<i>Q7B</i>	.673	.114	-.009	<b>Q27A</b>	.194	-.163	<b>.766</b>	<u>Q46B</u>	.062	<u>.721</u>	-.039
<i>Q8A</i>	.505	.137	.114	<b>Q27B</b>	.150	-.112	<b>.741</b>	<u>Q47A</u>	.052	<u>.805</u>	-.052
<i>Q8B</i>	.543	.147	.069	<b>Q28A</b>	-.033	-.016	<b>.865</b>	<u>Q47B</u>	-.096	<u>.737</u>	.106
<i>Q9A</i>	.379	.207	-.172	<b>Q28B</b>	-.081	.054	<b>.812</b>	<u>Q47A</u>	-.088	<u>.766</u>	.069
<i>Q9B</i>	.431	.228	-.188	<b>Q29A</b>	.076	-.003	<b>.755</b>	<u>Q47B</u>	-.114	<u>.757</u>	.047
<i>Q10A</i>	.793	-.105	.014	<b>Q29B</b>	.060	-.046	<b>.788</b>	<u>Q49A</u>	.173	<u>.793</u>	-.162
<i>Q10B</i>	.698	-.064	.081	<b>Q30A</b>	-.056	.057	<b>.780</b>	<u>Q49B</u>	.152	<u>.659</u>	-.037
<i>Q11A</i>	.749	.079	.043	<b>Q30B</b>	-.072	.008	<b>.796</b>	<u>Q50A</u>	-.040	<u>.794</u>	.008
<i>Q11B</i>	.674	.073	.095	<b>Q31A</b>	.147	-.090	<b>.799</b>	<u>Q50B</u>	-.159	<u>.720</u>	.163
<i>Q12A</i>	.826	-.186	.131	<b>Q31B</b>	.087	-.053	<b>.761</b>	<u>Q51A</u>	.092	<u>.768</u>	-.072
<i>Q12B</i>	.798	-.127	.105	<b>Q32A</b>	.173	-.054	<b>.644</b>	<u>Q51B</u>	.116	<u>.728</u>	.022
<i>Q13A</i>	.823	.013	-.003	<b>Q32B</b>	.126	.010	<b>.627</b>				
<i>Q13B</i>	.675	-.049	.170	<b>Q33A</b>	-.051	.167	<b>.611</b>				
<i>Q14A</i>	.919	-.056	-.089	<b>Q33B</b>	-.101	.140	<b>.675</b>				
<i>Q14B</i>	.881	-.079	-.047	<b>Q34A</b>	.181	.170	<b>.521</b>				
<i>Q15A</i>	.805	-.096	.015	<b>Q34B</b>	.177	.253	<b>.477</b>				
<i>Q15B</i>	.753	-.034	.023	<u>Q35A</u>	.001	<u>.719</u>	.079				
<i>Q16A</i>	.673	.048	-.025	<u>Q35B</u>	-.088	<u>.726</u>	.108				
<i>Q16B</i>	.633	.027	-.023	<u>Q36A</u>	.205	<u>.751</u>	-.122				
<i>Q17A</i>	.647	.144	.026	<u>Q36B</u>	.160	<u>.727</u>	-.042				
<i>Q17B</i>	.671	.175	-.001	<u>Q37A</u>	-.069	<u>.635</u>	.216				
<b>Q18A</b>	.040	.036	<b>.792</b>	<u>Q37B</u>	-.072	<u>.619</u>	.160				
<b>Q18B</b>	.016	.077	<b>.733</b>	<u>Q38A</u>	.020	<u>.750</u>	-.059				

Note: N = 161. *Italics* = Elementary school items; **Bold** = Middle school items; Underline = High school items

Table A-2: Correlation for Scales and Subscales Administered

Measure	1	2	3	4	5	6	7	8	9
1. RRVQ									
2. RRVQ- <i>elem.</i>	.850**								
3. RRVQ- <i>middle</i>	.913**	.698**							
4. RRVQ- <i>high</i>	.852**	.534**	.689**						
5. PBI	-.018	-.046	-.037	.028					
6. PBI-mother	.091	.080	.082	.073	.741*				
7. PBI-father	-.106	-.136	-.124	-.022	.815*	.215**			
8. SRS	.697**	.694**	.608*	.535**	-.011	-.029	-.137		
9. MCSDS	-.183*	-.124	-.169*	-.190*	.102	-.046	.188*	-.096	

Note: PBI = Parental Bonding instrument; RRVQ = Retrospective Relational Victimization Questionnaire; SRS = Social Rejection Scale; MCSDS = Marlowe-Crowne Social Desirability Scale \* = significant at  $p < .05$ ; \*\* = significant at  $p < .01$

Table A-3: Descriptive Statistics for Measures

Variable	Mean	Standard Deviation	Scale Score Range	Cronbach's Alpha
RRVQ-Total	164.75	89.98	51-419	.985
RRVQ Subtotal- Elementary	53.96	33.08	17-152	.972
RRVQ Subtotal- Middle	55.93	34.43	17-144	.975
RRVQ Subtotal- High	51.80	33.24	18-154	.971
PBI-Total	79.32	13.66	37-110	.761
PBI-Mother	42.68	8.11	16-66	.698
PBI-Father	36.64	9.38	5-61	.737
SRS-Total	34.91	16.54	21-90	.962
MCSDS-Total	48.84	5.59	34-63	.796

Note: PBI = Parental Bonding instrument; RRVQ = Retrospective Relational Victimization Questionnaire; SRS = Social Rejection Scale; MCSDS = Marlowe-Crowne Social Desirability Scale

for the sample and a range between 51 and 419. Means were 53.96 ( $SD = 33.08$ ) for the elementary school subscale, 55.93 ( $SD = 34.43$ ) for the middle school subscale, and 51.80 ( $SD = 33.24$ ) for the high school subscale. The great majority of participants reported experiencing at least some relational victimization in their childhood (97.5%), with 64.3% of the participants indicating that they had at least one severe episode of victimization (4 or 5 on the Likert-type scale).

### *Reliability*

Once the RRVQ's factor structure was established, the next step involved examining the reliability and stability of its items, subscales, and total scale scores. Reliability is the proportion of variance that is attributable to the true score of the latent variable (DeVellis, 2003) and is an important consideration in test construction. Internal consistency, split-half reliability, and temporal stability (test-retest reliability) were assessed in this study to determine the RRVQ's stability in measuring the constructs of retrospective relational victimization for elementary, middle, and high school periods of life. For all reliability analyses except test-retest, only Time 1 responses were used to ensure analysis of unique data.

#### *Internal Consistency*

Internal consistency is concerned with the homogeneity of scale items and their relationship to the underlying variable/s they measure (DeVellis, 2003). An examination of all RRVQ items demonstrated that each item is significantly correlated with all total and subscale scores (Table A-4), as is preferred when making a case for internal consistency (DeVellis, 2003). Items all tended to correlate more highly with the elementary, middle, and high school subscales to which they belonged, than to those they did not (Table A-4). Cronbach's alpha for internal consistency was .98 for the full RRVQ, and .97 for each of the elementary, middle, and high



Table A-4: *Correlations Between RRVQ Items and Total Scale/Subscale Scores*

Item	RRVQ-Total	RRVQ-Elementary	RRVQ-Middle	RRVQ-High
1A	.630	.777	.508	.373
1B	.596	.696	.456	.345
2A	.708	.785	.580	.495
2B	.673	.741	.544	.477
3A	.637	.760	.544	.373
3B	.643	.749	.562	.379
4A	.624	.804	.486	.358
4B	.669	.796	.535	.431
5A	.569	.709	.443	.350
5B	.610	.764	.482	.358
6A	.645	.789	.545	.363
6B	.650	.738	.564	.402
7A	.629	.701	.514	.431
7B	.649	.728	.525	.443
8A	.635	.650	.652	.455
8B	.643	.664	.538	.459
9A	.345	.369	.258	.273
9B	.391	.420	.290	.309
10A	.586	.739	.483	.321
10B	.612	.730	.514	.359
11A	.723	.813	.595	.492
11B	.716	.790	.598	.489
12A	.650	.811	.566	.333
12B	.662	.809	.567	.362
13A	.690	.817	.561	.433
13B	.681	.775	.592	.415
14A	.639	.815	.497	.368
14B	.634	.809	.503	.351
15A	.603	.756	.496	.333
15B	.626	.752	.514	.376
16A	.578	.691	.461	.374
16B	.543	.659	.430	.338
17A	.672	.731	.549	.483
17B	.700	.756	.568	.509
18A	.763	.590	.828	.579
18B	.737	.565	.789	.574
19A	.760	.606	.786	.602
19B	.798	.641	.828	.620
20A	.742	.546	.804	.595
20B	.720	.532	.780	.567
21A	.692	.557	.774	.489
21B	.692	.535	.784	.495
22A	.658	.520	.720	.489
22B	.674	.514	.723	.531
23A	.718	.546	.817	.514

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23B	.665	.489	.764	.480
24A	.624	.430	.716	.488
24B	.658	.471	.732	.517
25A	.641	.433	.698	.533
25B	.696	.505	.727	.576
26A	.466	.352	.484	.373
26B	.461	.361	.476	.358
27A	.712	.616	.793	.452
27B	.705	.592	.782	.466
28A	.722	.538	.813	.543
28B	.708	.509	.789	.552
29A	.726	.568	.795	.542
29B	.721	.569	.804	.513
30A	.691	.496	.772	.542
30B	.665	.479	.757	.501
31A	.755	.624	.832	.523
31B	.715	.574	.789	.505
32A	.663	.552	.722	.472
32B	.673	.538	.728	.502
33A	.640	.456	.684	.534
33B	.648	.451	.706	.529
34A	.739	.597	.732	.612
34B	.774	.607	.751	.669
35A	.651	.403	.531	.769
35B	.621	.349	.514	.758
36A	.663	.470	.495	.769
36B	.687	.474	.534	.787
37A	.650	.395	.562	.742
37B	.597	.354	.503	.695
38A	.567	.339	.432	.718
38B	.562	.319	.449	.702
39A	.533	.302	.425	.669
39B	.563	.326	.458	.688
40A	.556	.285	.439	.715
40B	.509	.253	.395	.660
41A	.653	.455	.483	.772
41B	.668	.484	.514	.748
42A	.626	.397	.490	.745
42B	.607	.371	.504	.705
43A	.418	.259	.368	.460
43B	.393	.228	.323	.468
44A	.616	.355	.498	.738
44B	.577	.306	.454	.719
45A	.648	.406	.493	.796
45B	.710	.462	.578	.813
46A	.642	.434	.482	.767
46B	.613	.392	.470	.737
47A	.655	.416	.495	.795
47B	.632	.360	.513	.766
48A	.619	.353	.490	.767
48B	.582	.318	.452	.735

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49A	.634	.430	.465	.771
49B	.626	.433	.495	.714
50A	.625	.373	.493	.764
50B	.618	.334	.524	.748
51A	.623	.403	.483	.747
51B	.701	.474	.566	.795

*Note:* all correlations significant at  $p < .01$

school subscales. This exceeds the common standard of .70 for acceptable alpha scores (Nunnally, 1978).

#### *Split-half reliability*

Split-half reliability may be measured by the correlation between subsets of a single pool of items that has been divided in two; it is used to establish the relative equivalency of items within a scale, when multiple versions of the same scale are not available for comparison (DeVellis, 2003). The Spearman-Brown formula may also be used to calculate reliability for the halves (DeVellis, 2003). When the first 51 items of the RRVQ were correlated to the last 51 items, the correlation between forms was .76. Both the Spearman-Brown and Guttman Split-Half Coefficients between the halves of the full scale were .86, which exceeds the commonly accepted standard of .80 (Garson, 2008).

#### *Test-retest reliability*

Test-retest analyses measure the stability of scale scores from one occasion to another (DeVellis, 2003). The RRVQ was administered a second time to returning participants, approximately four weeks after the original administration, with a range of 19 to 36 days between administrations ( $M = 26.6$ ,  $SD = 8.0$ ). Out of the original sample of 160 participants, 123 returned for the Time 2 test administration. The reduced sample of participants contained

male ( $n = 29$ , 23.6%) and female ( $n = 94$ , 76.4%) students. Binary logistic regression analyses were performed to determine if gender, ethnicity, or RRVQ total scale scores were significantly predictive of attrition between Time 1 and Time 2. No significant differences emerged in attrition by gender ( $\chi^2 = 1.66, p > .05$ ), ethnicity ( $\chi^2 = 1.73, p > .05$ ), or RRVQ total scale scores ( $\chi^2 = 2.01, p > .05$ ) between those who completed both administrations ( $n = 123$ ) and those who only completed the first ( $n = 37$ ). The Pearson correlation between Time 1 and Time 2 data for those who completed both administrations was .78, which is significant at a .01 level. A paired-samples t-test demonstrated that there were no significant differences between the scores for administrations ( $t = .72, p > .05$ ), suggesting acceptable temporal stability for a four-week time period.

#### *Construct Validity*

The construct validity of the RRVQ was also assessed. Validity is concerned with whether the variable or variables being measured are the true cause of item covariation (Devellis, 2003). Construct validity (which includes convergent and divergent validity) is achieved if the construct theoretically assessed by a scale correlates with scales measuring similar and dissimilar constructs in expected ways (DeVellis, 2003). A scale is said to have convergent validity if its scores correlate highly with those of scales measuring similar or related constructs; it is said to have divergent validity if its scores have insignificant correlations with those of scales measuring unrelated or different constructs. The following measures were used to assess convergent and divergent validity.

#### *Instruments*

*Parental Bonding Instrument (PBI)*. To examine the RRVQ's convergence with a theoretically related construct early parental attachment quality was measured on a continuous

scale by the Parental Bonding Instrument (PBI; Parker, Tupling, and Brown, 1979; Appendix D). The measure is described fully in Chapter 3. Some evidence has indicated that children with strong parental bonds are less likely to experience high levels of peer victimization and rejection (Gumpel & Ish-Shalom, 2003; Cowan & Cowan, 2004; Dykas, Ziv, & Cassidy, 2008). Therefore, it was expected that a moderate negative correlation would be present between early parental attachment as measured by the PBI and childhood relational victimization as measured by the RRVQ, with higher attachment scores being associated with lower victimization scores.

For this sample, the mean score for the total PBI was 79.32 ( $SD = 13.66$ ), while the Cronbach's alpha was .76. The "mother" and "father" subscales had means of 42.68 ( $SD = 8.11$ ) and 36.64 ( $SD = 9.38$ ), and Cronbach's alphas of .69 and .74, respectively (see Table A-3).

*Social Rejection Scale (SRS).* To examine the RRVQ's convergence with a theoretically similar construct, social rejection was measured with The Social Rejection Scale (SRS; Lev-Wiesel, Nuttman-Shwartz, & Sternberg, 2006; Appendix L). A large positive correlation was expected between the two measures. The SRS is a 21-item retrospective measure which is intended to assess rejection or social ostracizing during childhood. It was developed in Hebrew for an Israeli population, but was translated into English for the purpose of this study due to its similarity with the RRVQ. It was based on the categories of social rejection formulated by Asher et al. (2001) and includes items such as "I was kicked out of group meetings and gatherings" and "They encouraged other people to reject me." The items are measured on a 5-point Likert-type scale anchored by *not at all* and *severely/extremely*. Scores are calculated by summing the total of all items, with a possible range of 21 to 105. The Cronbach alpha for the scale, as reported by the authors, is .89.

Permission was obtained from the authors for use of this measure in this project; although further information was requested regarding the measure's psychometric properties, none was provided. For this sample, the mean score for the SRS was 34.91 ( $SD = 16.54$ ). The Cronbach's alpha for the scale was .96. All scores fell between the expected ranges (see Table A-3).

One of the authors and creators of the SRS (Rachel Lev-Wiesel) provided the first English translation of the measure at the request of the researcher. In order to ensure cross-cultural equivalency of the translated version as recommended by Aegisdottir, Gerstein, and Cinarbas (2008), the measure was back-translated into Hebrew by a native speaker living in America. This back-translation was then re-translated into English by another bilingual American with Israeli heritage. The re-translated version was very similar to the author's original translation with only minor wording differences, and it was determined that the Hebrew and English versions are mostly equivalent, and the English version was fit to be used in this project.

*Marlowe-Crowne Social Desirability Scale (MCSDS).* To examine the RRVQ's divergence with a theoretically dissimilar and unrelated construct, The Marlowe-Crowne Social Desirability Scale was administered (MCSDS; Marlowe & Crowne, 1960; Appendix M). Measures of pervasive characteristics such as social desirability are strongly recommended to assess discriminant validity of new measures (Campbell, 1960). The MCSDS is a 33-item, true/false personal reaction inventory which is typically used to evaluate an individual's tendency towards socially desirable responding on personality inventories. In this study, it was used as a divergent measure. Because those completing psychological measures have varying motivations to "fake good" or "fake bad," the MCSDS can assess this potential and add information about the validity of results for an individual. The scale includes lists of acceptable

yet improbable behaviors (“I never resent being asked to return a favor”), as well as socially less acceptable, yet probable behaviors (“There have been times when I was quite jealous of the good fortune of others”). To score the scale for positive items, true responses are coded as “1” and false responses as “0”. Negative items are reverse-scored, and the final score is the sum total of all items. Higher scores mean higher amounts of social desirability.

The internal consistency quotient for the MCSDS has been found to be .88, while the test/retest reliability correlation was found to be .89 (Marlowe & Crowne, 1960). The scale has significant convergent association with the Edwards Social Desirability Scale and high divergent validity with all clinical subscales of the MMPI, which lends support to its ability to measure social desirability rather than pathology (Marlowe & Crowne, 1960). The measure has been used in over 1,000 studies (Beretvas, Meyers, and Leite, 2002) and is the most widely used test of social desirability. For this sample, the mean score for the MCSDS was 48.84 ( $SD = 5.59$ ), while the Cronbach’s alpha for the scale was .80 (see Table A-3).

#### *Scale Correlations*

Pearson’s product-moment correlations were performed for all scales and subscales and are reported in Table A-2. Correlations were moderate to large (Cohen, 1988) between all developmental period subscales of the RRVQ (ranging from .54 to .70). Participants’ RRVQ total scores were compared to their scores on the Social Rejection Scale (SRS). A large correlation was found between the RRVQ total scores and the SRS total scores ( $r = .70, p < .01$ ), suggesting that social rejection and relational victimization are similar constructs that are adequately captured by these scales, and adding support for convergent validity. The RRVQ scores were also compared to scores on the Parental Bonding instrument (PBI). No significant correlations were found between the total scale scores or the subscales of either measure,

suggesting that the theoretical relationship between childhood relational victimization and early parental attachment quality was not supported through this sample.

When MCSDS-RS scores were compared to RRVQ total scores, the resulting correlation ( $r = -.18$ ) was not significant at the  $p < .01$  level, but it was a small yet significant correlation at the  $p < .05$  level. While a non-significant correlation is preferred between measures of unrelated constructs, divergent validity may be considered to exist when the correlations of measures of different constructs are smaller than the correlations of measures of the same construct (Heppner, Kivlighan, & Wampold, 1999), which is the case here. This provides adequate support for the hypothesized lack of relationship between the relational victimization and social desirability and for the RRVQ measuring a construct that is distinct from the MCSDS and social desirability, which is good initial evidence for the divergent validity of the RRVQ.

#### *Gender Normative Data*

Lastly, potential gender differences in the RRVQ were assessed. Gender is of specific interest in studies of relational victimization and aggression, as these forms of bullying were originally identified as the “missing link” to explain the ways that girls aggress (Crick, 1995). Girls are often, but not always, identified as being the primary perpetrators and victims of relational forms of aggression (Archer & Coyne, 2005). If differences are found, they may impact the establishment of differential norms for men and women on the RRVQ.

To determine the predictive quality of gender on scores and its potential impact on norms for the RRVQ, a multivariate analysis of variance (MANOVA) was conducted for RRVQ total scores and elementary, middle, and high school subscale scores, using gender as a grouping variable. Gender was not found to be a significant predictor of RRVQ total scores in tests of equality of group means ( $F = 1.56, p > .05$ ). Nonsignificant results were also found for



elementary ( $F = 2.44, p > .05$ ), middle ( $F = .148, p > .05$ ), and high school ( $F = 2.03, p > .05$ ) scores. This suggests that the same norms may be used for both males and females on the RRVQ.

### Conclusion

In conclusion, the RRVQ appears to reliably and validly measure the construct of relational victimization in elementary school, middle school, and high school time periods. The exploratory factor analysis suggests that the scale contains three factors, each associated with the corresponding developmental time period. Because no evidence was found indicating the frequency/intensity sub-items measure separate factors, these items are not considered representative of different subscales.

The RRVQ has high internal consistency, adequate split-half reliability, and adequate test-retest reliability. Contrary to the hypothesis that the RRVQ would be moderately correlated with a measure of early parental attachment, no significant correlation was found; this may be taken as evidence supporting the two being divergent constructs, although not evidence of divergent validity for the RRVQ. However, convergent validity was found with a measure of social rejection, and divergent validity was found with a measure of social desirability, providing initial support of construct validity for the RRVQ. Analyses by gender did not suggest the need for separate norms for men and women when interpreting RRVQ results. In conclusion, preliminary evidence suggests that the RRVQ is a stable and valid measure of retrospective childhood relational victimization for men and women.

## Appendix J

### Original item pool for the RRVQ

1. To hurt me, my peer/s purposely excluded me from our group of friends.
2. My peer/s have tried to control me by threatening to withdraw friendship if I didn't do what they wanted.
3. My peer/s sometimes would imitate me in a negative way when they thought I wouldn't find out about it.
4. My peer/s socially isolated me at times.
5. I got the "silent treatment" or was ignored when I tried to interact with my peer/s.
6. My peer/s tried to hurt my relationships with other people by telling them negative things about me.
7. I had peer/s make it clear to me that they would think less of me unless I did what they wanted.
8. My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do.
9. To get back at me, my peer/s tried to steal my dating partner.
10. My peer/s tried to damage my reputation by spreading lies and rumors about me.
11. Sometimes I felt as if my peer/s were excluding me from group activities to make me feel bad.
12. My peer/s would tell other people to stop hanging out with me or stop liking me.
13. I found out that my peer/s were making fun of me behind my back.
14. I have received anonymous notes from my peers saying negative or hurtful things about me.
15. My peer/s sometimes played mean-spirited practical jokes on me.
16. I sometimes received abusive phone calls from my peer/s that were meant to hurt me.
17. My peer/s tried to damage my reputation by passing along negative information about me.
18. My peer/s would sometimes ignore me or refuse to listen to me when I talked to them.
19. I've had a peer replace me with another friend in order to upset me.
20. My peer/s would ignore me until I did something that they wanted me to do.

## Appendix K

### RRVQ Version Administered for Preliminary Analyses

Age \_\_\_\_\_  
Gender (circle one): M    F

Reflect back on your grade school experiences, or the associated periods in your life (approximately ages 6-18) and mark the extent that you experienced the following situations with your peer/s.

Response Categories:

1	2	3	4	5
This never occurred	This occurred rarely	This occurred occasionally	This occurred somewhat often	This occurred often

1. At times, my peer/s purposely excluded me from our group of friends.
2. My peer/s have tried to control me by threatening to withdraw friendship if I didn't do what they wanted.
3. My peer/s sometimes would imitate me in a negative way to others.
4. My peer/s socially isolated me at times.
5. I got the "silent treatment" or was ignored when I tried to interact with my peer/s.
6. My peer/s tried to hurt my relationships with other people by telling them negative things about me.
7. I had peer/s make it clear to me that they would think less of me unless I did what they wanted.
8. My peer/s threatened to share my secrets with others unless I went along with what they wanted me to do.
9. To get back at me, my peer/s tried to steal my dating partner.
10. My peer/s tried to damage my reputation by spreading lies and rumors about me.
11. Sometimes I felt as if my peer/s were excluding me from group activities to make me feel bad.
12. My peer/s would tell other people to stop hanging out with me or stop liking me.
13. I found out that my peer/s were making fun of me behind my back.
14. My peer/s tried to damage my reputation by passing along negative information about me.
15. My peer/s would sometimes ignore me or refuse to listen to me when I talked to them.

16. I've had a peer replace me with another friend in order to upset me.
17. My peer/s would ignore me until I did something that they wanted me to do.

## Appendix L

### Social Rejection Scale

If you ever experienced social rejection during childhood or puberty, please address those events. The following questionnaire presents 21 items, each which describes different types of social rejection behavior. Please define to what extent you suffered the described behavior. Please respond to all questions.

1—Very low level 2—Low level 3—To a certain extent 4—High level 5—Very high level

1. I was rejected by my classmates.
2. I invited friends over but they refused to come.
3. I was kicked out of group meetings or gatherings
4. I was ignored.
5. I was prevented from taking part in games and activities.
6. I was denied access to friends.
7. I was prevented from obtaining and receiving valuable information (such as about homework, class gatherings, or social activities).
8. I was physically assaulted.
9. Objects were thrown at me.
10. My belongings (such as books, toys, etc.) were destroyed.
11. I was cursed at.
12. I was imitated mockingly in a hurtful way.
13. I was called names.
14. They upset me with hand and body gestures.
15. I was humiliated.
16. I was ordered to do things.
17. I was blamed for bad things that happened.
18. I was blamed for bad things that had not happened yet.
19. My classmates told on me (tattled).
20. Those who rejected me were encouraged.
21. Negative things were said about me.

## Appendix M

### **Marlowe-Crowne Social Desirability Scale: Personal Reaction Inventory**

Instructions: Listed below are a number of statements concerning personal attitudes and traits. Read each item and then decide whether the statement is true or false as it pertains to you personally.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked someone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress.
8. My table manners at home are as good as when I eat out at a restaurant.
9. If I could get into a movie without paying and be sure I was not seen I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority, even though I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.
19. I sometimes try to get even rather than forgive and forget.
20. When I don't know something I don't at all mind admitting it.
21. I am always courteous, even to people who are disagreeable.
22. At times I have really insisted on having things my own way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrong-doings.
25. I never resent being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.
27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.
30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without a cause.
32. I sometimes think that when people have a misfortune they only got what they deserved.
33. I have never deliberately said something that hurt someone's feelings.