

**ATTACHMENT ANXIETY AND CONDOM USE: THE MODERATING  
INFLUENCE OF REJECTION-SALIENCE**

by

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## Abstract

The purpose of my dissertation was to examine how attachment anxiety and rejection-salience interacted to influence condom use intentions and beliefs. I manipulated rejection-salience specific to a sexual encounter (Study 1) and rejection-salience in general (Studies 2 and 3). I hypothesized that among women who were high in anxiety, those in the rejection-salient condition would report riskier sexual tendencies related to condom use compared to those in the control condition. I did not expect rejection-salience to influence the sexual tendencies of women who were low in anxiety. In Study 1, I manipulated potential partner rejection and found that attachment anxiety, attachment avoidance, and rejection-salience interacted to influence intentions to engage in unprotected sex. As expected, among women who were high in anxiety and low in avoidance, those in the rejection condition reported stronger intentions to have unprotected sex than those in the control condition. Unexpectedly, the same was true for women who were low in anxiety and high in avoidance. In Study 2, I manipulated general rejection-salience and asked women to indicate how many weeks into a relationship would be appropriate before switching from having protected to unprotected sex. Consistent with the results of Study 1, among women who were high in anxiety, those in the rejection-salience condition reported less time before switching compared to those in the control condition, demonstrating more risky sexual tendencies. In Study 3, I manipulated general rejection-salience and asked women to report how many weeks into a relationship unprotected intercourse should occur. Inconsistent with my predictions, as well as from the results of Studies 1 and 2, among women who were high in anxiety and low in avoidance, those in the rejection-salience condition reported that unprotected sex

belonged later in a relationship timeline compared to those in the control condition. Study 4 explored how the exposure to positive relationship thoughts may act to buffer the influence of rejection-salience on risky sexual tendencies among highly anxious women. Some preliminary support for this hypothesis was found. Future research directions and implications for the literature on condom use and for sexual health promotion are discussed.

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## Chapter 1 – General Introduction

A lot of the guys, if I didn't have unprotected sex with them, they would get mad at me and I still wanted that closeness with them. I was afraid if I didn't do what they wanted, they wouldn't be my friend.” - Teenage talk-show guest (Leonardo & Zimmer, 2008)

Although young adults are aware of the risks associated with having unprotected sex, many still choose to engage in this behaviour (Rotermann, 2012). Indeed, approximately one third of Canadian youth ages 15-24 report not using condoms during their last instance of sexual intercourse. Furthermore, there are approximately 30,000 unwanted teen pregnancies each year among Canadian youth (Rotermann, 2005) and the highest increases in sexually transmitted infection (STI) rates occur among individuals of ages 15-24 (Public Health Agency of Canada, 2002). Other surveys in the United States show even more discouraging results, with consistent condom use rates as low as 28% among college students (Douglas et al., 1997).

Interestingly, young women are consistently less likely to report using condoms than are young men (e.g., Rotermann, 2012; Santelli et al., 2000). As suggested by the teenage talk-show guest's quote above, one potential reason for engaging in unprotected sex among young women is a fear of rejection from a sexual partner if unprotected sex is refused. The current line of research explored the idea that fears of rejection might drive women to engage in unprotected sex with a male partner, particularly when those women are high in attachment anxiety.

Indeed, previous research has shown that high levels of attachment anxiety have been associated with lower reported condom use and negative attitudes toward condoms (Feeney, Kelly, Gallois, Peterson, & Terry, 1999; Feeney, Peterson, Gallois, & Terry, 2000), however little research has assessed factors that may explain why this association exists. In my dissertation, I investigated the moderating role of rejection-salience in understanding the relationship between attachment anxiety and condom use. In three studies, I experimentally

manipulated rejection-salience and assessed its moderating impact on the relationship between attachment anxiety and measures of sexual health intentions related to condom use.

### **Attachment Theory**

The notion of attachment was first proposed in the area of developmental psychology and was used to characterize the relationships and emotional bonds between infants and their primary caregivers (Bowlby, 1958). Attachment bonds were theorized to come out of evolutionary-based processes to promote proximity between an infant and its primary caregiver to ensure protection and survival of that infant. Whereas these bonds developed during infancy, they were expected to shape a child's beliefs about trust and his or her expectations for responsiveness from others. Furthermore, these beliefs were expected to underlie internal working models and to influence relationships throughout the life-cycle.

Further research assessing attachment bonds classified attachment into three prototypical categories, referred to as attachment styles (Ainsworth, Blehar, Waters, & Wall, 1978). Through the tested separation of an infant and his or her primary caregiver (known as the Strange Situation Task), a child could be classified as having either a secure, avoidant, or anxious attachment style and these attachment styles were expected to shape later expectations for trust, support, and acceptance from others.

Securely attached infants develop beliefs that others are trustworthy and will be available as a source of support when needed. Using Ainsworth's Strange Situation Task, infants who were identified as securely attached would feel comfortable exploring new situations while their primary caregiver was present but would become distressed when they were left alone. Relief and joy were then experienced by secure infants once their caregivers returned. Avoidantly attached infants develop the expectations that their caregivers are not trustworthy and are

unavailable, learning not to rely on others for emotional support. Using the Strange Situation Task, avoidant infants were identified by their cold behaviour toward their caregiver, ignoring the caregiver and being unaffected by his or her departure. Lastly, anxiously attached individuals learn that support from those that they count on is unpredictable and that attachment figures can be accepting or rejecting. Anxious infants were identified in the Strange Situation Task by their distressed behaviour as their caregiver left them and their lack of relief or comfort upon the caregiver's return.

After the idea of attachment styles was understood as a well-established addition to research in developmental psychology, romantic relationships researchers began to assess how attachment characteristics presented themselves among romantic partners. For instance, Weiss (1982, 1986, 1991), argued that partners in romantic relationships engage in similar attachment-seeking behaviours to foster bonds as do infants with their caregivers, including the reliance on comfort and security from a partner, the desire for proximity with a partner during times of stress, and the discomfort with a partner's unavailability.

Most notable to the early literature on adult romantic attachment is work by Hazan and Shaver (1987), who introduced the concept of specific attachment styles into the study of romantic relationships. They believed that characteristics of the three attachment styles of infancy, introduced by Ainsworth et al. (1978), would translate from childhood over into the romantic life of an adult. They argued that, for the most part, a child's attachment style will stay consistent throughout his or her life and will influence the types of romantic interactions experienced in adulthood. Later research tested this notion of stability. Whereas early findings demonstrated that attachment is not always completely stable and can change across multiple measurements and with simple manipulations of salient relationships (Baldwin & Fehr, 1995;

Baldwin, Keelan, Fehr, Enns, & Kohs-Rangarajoo, 1996), more recent strong findings support the conclusion that attachment does indeed have a stable foundation but can vary temporarily due to situational factors (Fraley, Vicary, Brumbaugh, & Roisman, 2011).

By conducting large-scale studies of trends in romantic relationships, Hazan and Shaver (1987) were able to categorize specific characteristics of adult intimate interactions into the same three attachment styles of infancy. Securely attached adults were described as having happy and friendly interactions with their partners and were involved in relationships that were highly trusting and supportive. Avoidantly attached adults were characterized by strong fears of intimacy and the desire to avoid emotional closeness. Anxiously attached adults were described as being very obsessive and possessive of their partners, fearing abandonment, and experiencing strong desires for emotional and sexual closeness.

Whereas the earlier efforts to describe adult romantic attachment styles were based on direct categorization, a more recent perspective of attachment measures the construct continuously. Fraley and Waller (1998) proposed that attachment styles should no longer be viewed as the classification of individuals into distinct groups, but that attachment should be assessed along two different continuums, ranging from low to high: anxiety and avoidance. Anxiety involves the degree to which an individual fears rejection and abandonment from others, whereas avoidance involves the degree to which an individual enjoys being emotionally close and intimate with others. By assessing attachment along two continuous dimensions, more variability in anxiety and avoidance can be accounted for, allowing for greater interpretability of the constructs. For this reason, and in accordance with the recommendation made by Tracy and colleagues (Tracy, Shaver, Albino, & Cooper, 2003) to employ a continuous versus categorical

measure of attachment, attachment in the current studies was conceptualized and measured as continuous constructs of anxiety and avoidance.

Constructs of attachment, whether measured categorically or continuously, have shown widespread ability to predict many relationship behaviours and outcomes. On the whole, secure attachment (i.e., low anxiety and low avoidance) has been linked to generally positive relationship characteristics in virtually all areas of relationship functioning. For instance, secure attachment has been positively associated with commitment, intimacy, passion, trust and relationship satisfaction (Kobak & Hazan, 1991; Levy & Davis, 1988; Simpson, 1990). Secure individuals report having mutual support within their relationships, having a balance in dependence between partners (Feeney & Noller, 1991), and as being comfortable expressing their feelings to their partner (Feeney, 1995; 1999). Their romantic relationships are also recognized as being friendship-based and as fostering closeness and affection. Even in the context of romantic conflict, secure individuals are able to use problem-solving strategies and to compromise rather than engage in more destructive communication styles (Pistole, 1989).

Alternatively, attachment insecurity (i.e., avoidance and anxiety) is associated with more negative relationship functioning. Attachment avoidance has been linked to low levels of commitment, intimacy, passion, and interdependence (Levy & Davis, 1988; Simpson, 1990). Avoidantly attached individuals experience discomfort with emotional closeness (Fraley & Waller, 1998) and thus have relatively low levels of self-disclosure with romantic partners (Keelan, Dion, & Dion, 1998; Mikulincer & Nachshon, 1991). They also tend to do poorly at managing conflict by engaging in more negative behaviours and fewer positive behaviours than securely attached individuals (e.g., Creasey, Kershaw, & Boston, 1999).

Anxiously attached individuals also display similarly negative tendencies in romantic relationships. People who are high in anxiety have lower levels of trust and relationship satisfaction (Levy & Davis, 1988; Simpson, 1990) and interpret hurtful behaviour by their partner as intentional, leading to high levels of distress (Feeney, 2004; 2005). Highly anxious individuals also display a host of negative relationship behaviours, including high levels of jealousy (Collins & Read, 1990), negative escalation during conflict (Creasey et al., 1999), and high levels of distress and hostility when discussing relationship problems with their partners (Simpson, Rholes, & Phillips, 1996). These and other negative behaviours tend to lead the partners of anxiously attached individuals to evaluate their relationships more negatively (Kirkpatrick & Davis, 1994; Simpson, 1990) and to experience less satisfaction and commitment within those relationships (Brennan & Shaver, 1995; Collins & Read, 1990). Ultimately, anxiously attached individuals often bring about the rejection that they fear so much through their negative behaviour (Downey, Freitas, Michaelis, & Khouri, 1998; Hazan & Shaver, 1987).

In sum, attachment characteristics have been widely studied in the context of romantic relationships, including research in domains such as conflict, separation, and relationship satisfaction (for a review see Shaver & Mikulincer, 2006). However, even though sexuality is such an integral part of romantic relationships, relatively little research on the associations between attachment and sex has been conducted, particularly in the area of safer sex behaviour.

### **Attachment Anxiety and Sexual Behaviour**

Some studies have demonstrated that attachment is able to predict the sexual thoughts, beliefs, and behaviours of individuals. For instance, people who are securely attached, scoring low on both anxiety and avoidance, have been shown to engage in generally positive sexual activities; experiencing healthy and intimate sexual encounters, engaging in few, if any,

instances of casual sex, and supporting the belief that sex without love is not pleasurable (Brennan & Shaver, 1995; Cooper, Shaver, & Collins, 1998). They believe that sex should be restricted to committed relationships, they are unlikely to engage in extra-relationship sexual activity, and they report mutual enjoyment and initiation of sexual activity with their partners (Brennan & Shaver, 1995; Hazan, Zeifman, & Middleton, 1994, as cited in Feeney et al., 1999; Simpson & Gangestad, 1991).

Alternatively, avoidant individuals have been shown to foster non-intimate sexual tendencies. For example, it has been found that people who are high in avoidance engage in sexual intercourse to fulfill nonromantic goals, such as impressing their peers (Schachner & Shaver, 2004). Their overall levels of commitment to monogamy tend to be lower, having more permissive attitudes toward infidelity, reporting greater desires to meet alternative partners, showing more attentional bias and positivity toward alternative partners, and engaging in more actual infidelity over time (DeWall et al., 2011). In addition, high levels of avoidance have been linked to potentially risky sexual behaviours. For instance, avoidant individuals have been found to be more accepting in general of uncommitted sex and tend to view sex as being relatively low in importance (Brennan & Shaver, 1995; Tracy, Shaver, Cooper, & Albino, 2003). Brennan and Shaver (1995) found that high ratings on sociosexual orientation (e.g., high instances of casual sex, high number of previous partners, high number of expected future partners) were positively associated with having an avoidant attachment style. From these findings, it may be suggested that individuals who are high in avoidant attachment may be inclined to engage in risky sexual behaviours with multiple casual partners. However, continued research has demonstrated that avoidance is *negatively* associated with instances of reported engagement in unprotected intercourse (Feeney et al., 2000). In fact, highly avoidant individuals tend to endorse the belief

that condoms protect against HIV/AIDS and other STIs and they do not endorse the belief that condoms reduce intimacy or that they are boring. Therefore, whereas avoidant individuals seem to engage in casual sex with a number of partners, they also tend to take a sexually cautious approach by reportedly using protection on a frequent basis.

Lastly, attachment anxiety has been shown to influence sexual behaviours in several ways. Highly anxious individuals tend to experience negative affect in association with sexual experiences (Gentzler & Kerns, 2004). They are generally not accepting of casual sex without commitment (Brennan & Shaver, 1995; Simpson & Gangestad, 1991) and their sexual motivations are focused on maintaining commitment within their relationships. For instance, highly anxious individuals report having sex to reduce their relational insecurities (Schachner & Shaver, 2004) and report getting the most enjoyment out of their sexual encounters from the affectionate behaviours (e.g., holding, caressing) rather than from the more clearly sexual behaviours (Hazan, Zeifman, & Middleton, 1994). Importantly, there have been several studies demonstrating that individuals who are high in attachment anxiety tend to exhibit quite risky sexual behaviours and attitudes. In reports of personal sexual history, anxious attachment in women has been positively associated with their sexual risk-taking, including higher levels of promiscuity, higher likelihood of having unprotected oral sex, of avoiding communication with their partners about one another's sexual history, and of feeling unable to resist pressure to engage in unprotected sex (Feeney et al., 2000). Greater levels of anxious-attachment have also been linked to lower levels of reported condom use in general and to lower levels of condom use on an individuals' most recent instance of sexual intercourse (Feeney et al., 1999). Attitudes toward condoms are also influenced by attachment. When general attitudes toward condoms were rated, both men and women that were high in attachment anxiety were more likely to rate

them as being boring, interrupting foreplay, destroying spontaneity, as well as reducing intimacy, sexual satisfaction and pleasure relative to those that scored low in attachment anxiety (Feeney et al., 2000). In this same study, among women in particular, higher levels of anxiety were inversely related to using a condom during every sexual encounter and engaging in safer sex practices when involved in any type of sexual behaviour.

Based on these findings, it is clear that individuals high in attachment anxiety are at risk of putting themselves in unsafe sexual situations in which unwanted pregnancy or STI transmission are at an increased likelihood relative to individuals low in attachment anxiety. For this reason, the current studies will focus primarily on those individuals that are high in anxious attachment to determine what factors influence the positive association between anxiety and unprotected sex.

### **Attachment Anxiety and Rejection**

Surprisingly, although there is evidence supporting the notion that higher anxiety levels predict increased reports of engaging in risky sex practices, little empirical evidence has been provided to explain what factors may cause this association. Most studies conducted in this area are non-experimental and do not investigate any possible mediating or moderating variables involved. Therefore, little is known about *why* highly anxious women engage in risky sexual behaviours.

One possible explanation for the relationship between a woman's high level of anxiety and her low levels of safer sex behaviour is a fear of potential rejection from her sexual partner if unprotected sex is refused. Indeed, young women have been shown to express strong intentions to use condoms but often feel unable or unwilling to act on those intentions and some young women find that different gender power relations can make it difficult for them to negotiate

condom use with partners who are unwilling to use a condom (Dehne & Riedner, 2005; Holland, Ramazanoglu, Sharpe, & Thomson, 2000). Perhaps highly anxious women resort to engaging in unprotected sex because they fear that the refusal of unprotected sex, or the promotion of condom use in their sexual relationships, could lead to rejection from their partners.

By definition, attachment anxiety is associated with a fear of rejection and abandonment from others (Fraley & Waller, 1998) and it is understood that highly anxious individuals experience a chronic hyperactivation of the attachment system (Mikulincer & Shaver, 2007). Therefore, these individuals should be particularly sensitive to rejection cues in romantic relationships. Indeed, highly anxious individuals are hypervigilant in the detection of rejection threat cues (Mikulincer & Shaver, 2003, 2007), are quick at accessing words related to proximity and distance (e.g., acceptance and rejection; Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer, Gillath & Shaver, 2002), have trouble inhibiting rejection expectations (Baldwin & Kay, 2003), and have trouble suppressing thoughts related to their own relationship breakup experiences (Mikulincer, Dolev, & Shaver, 2004) relative to individuals who are low in anxiety. Recent research assessing neural responses in the early processing of threats to social belonging has even shown that priming attachment contexts leads to greater semantic processing of rejection words, particularly among individuals who were both high in attachment anxiety and low in attachment avoidance (Zayas, Shoda, Mischel, Osterhout, & Takahashi, 2009).

Furthermore, due to their fears of rejection and abandonment from romantic partners, one might expect that highly anxious individuals will experience a heightened level of distress following rejection and will take action to try to avoid such rejection. Consistent with this idea, highly anxious individuals have been shown to use hyperactivating strategies in response to relational threats that are aimed at obtaining closeness and intimacy (Mikulincer & Shaver, 2003,

2007) and to become the most upset and least accepting following a romantic breakup relative to those who are low in anxiety (Davis, Shaver, & Vernon, 2003; Feeney & Noller, 1992).

Because higher levels of attachment anxiety are positively associated with sensitivity to rejection and with experiencing negative reactions to rejection, I proposed that highly anxious individuals may act in ways that are aimed at avoiding such rejection. In the context of a sexual encounter, a woman's opportunity for rejection from her male partner may become salient when condom use decisions become relevant. Indeed, it has been demonstrated that individuals who perceive potential relational threat during condom use negotiation are less likely to request using a condom (Umphrey & Sherblom, 2007). This perception of relational threat is likely to only be exacerbated among highly anxious individuals (Mikulincer & Shaver, 2003, 2007) and particularly among highly anxious women, as men are more likely than women to prefer unprotected sex over sex with a condom (Randolph, Pinkerton, Bogart, Cecil, & Abramson, 2007). To avoid this potential rejection, a highly anxious woman may engage in low levels of safer sex behaviour.

Indeed, highly anxious individuals have been found to show greater interest in sex when feeling insecure in their relationships and to hold motivations for sex that are based on gaining reassurance from and maintaining emotional intimacy with their partners, relative to individuals who are low in anxiety (Davis, Shaver, & Vernon, 2004; Schachner & Shaver, 2004). Individuals who are high in anxiety tend to have sexual intercourse when feeling vulnerable in their relationships more often than do individuals who are low in attachment anxiety. I proposed that these vulnerabilities act to influence highly anxious women to engage in sexual activities that they may not desire or that may even be maladaptive. Consistent with this proposal, Gentzler and Kerns (2004) found that highly anxious women were more likely to consent to unwanted sexual

behaviours than women who scored low on attachment anxiety. Impett and Peplau (2002) found similar results and discovered that highly anxious women regularly cited fears that their partner would lose interest in them if they refused sexual intercourse after receiving unwanted sexual advances from their partner.

Highly anxious women are thus more likely than women who are low in anxiety to give in to the desires of their partner and this appears to be due, at least in part, to fears of rejection. Importantly, the women in the aforementioned studies reported giving in to the desires of their partner (i.e., wanting to please their partner) even when those desires were inconsistent with their own. In further support of this partner-pleasing notion is more recent research exploring the effects of rejection threat on sexual fantasies (Birnbaum, Svitelman, Bar-Shalom, & Porat, 2008). Male and female participants were asked to imagine either a threatening or a non-threatening relationship scenario and then to describe the sexual fantasies that came to their minds. Among participants in the relationship threat condition but not among those in the non-threat condition, higher levels of anxiety were associated with a greater desire among participants to please their sexual partner in their sexual fantasies. I predict that this same partner-pleasing finding might be expected when a potential relationship threat is present and a highly anxious individual's partner desires unprotected sexual intercourse.

Although there is no direct evidence that fears of rejection drive the relationship between high anxiety and low condom use, the studies reviewed above suggest that such fears may moderate this relationship. The current line of research assessed how potential partner rejection and general rejection salience influence the relationship between attachment anxiety and condom use.

## Chapter 2: Study 1

In Study 1, participants were asked to imagine themselves in a consensual sexual encounter in which no condom was available. In that scenario, I manipulated whether potential partner rejection was made salient. I then measured participants' intentions to engage in unprotected sex as well as their other reactions to the scenario. I predicted an interaction between attachment anxiety and rejection condition. Specifically, I hypothesized that among participants who were high in attachment anxiety, those in the rejection condition would show stronger intentions to have unprotected sex than those in the non-rejection condition. Among women who were low in attachment anxiety, I hypothesized that there would be no difference in intentions between those in the rejection versus non-rejection conditions, as individuals who were low in anxiety were not expected to react to potential rejection in such a way that aims to preserve the relationship and avoid abandonment. I also included attachment avoidance in my predictions to assess its main effect and its possible interaction with anxiety. Although I made no specific predictions for interactions between rejection condition and/or anxiety with avoidance, I note that the predicted heightened intentions to engage in unprotected sex among women who are high in attachment anxiety and also in the rejection condition might be most pronounced among those who are also the least resistant to maintaining close relationships (i.e., women who are also low in attachment avoidance).

Furthermore, I expected to find the same pattern of results for other dependent measures that address risky sexual decision making, including impelling thought listings (i.e., thoughts exhibiting desires/intentions to engage in unprotected sex), justifications for engaging in unprotected sex, and beliefs that condoms protect from health risks associated with engaging in

sexual intercourse. In general I expected to find that higher levels of anxiety in combination with salient threats of rejection would lead to the greatest tendency to make risky sexual decisions.

## Method

### Participants

One hundred and forty-five heterosexual female participants<sup>1</sup> who were either enrolled in the Queen's University Introductory Psychology class ( $n = 112$ ) or who were students from other classes and had agreed to be contacted for participation in psychology studies for payment ( $n = 33$ ) were selected to participate in the study. I selected participants based on their responses to pre-screening questions administered at the outset of the school year. Only those students who were sexually active and who were not in a steady relationship were asked to participate. Also, it was required that participants reported using condoms regularly, therefore only those students who scored higher than 3 on a self-report scale measuring the frequency of condom use (with 1 representing *Never* and 9 representing *Always*) were selected as participants. The mean frequency of condom use score among my sample was 7.84. I did not recruit irregular condom users because I wanted the stimuli, which depicted a dilemma of whether to have sex without a condom, to be relevant to participants.

As part of the pre-screening, participants also completed the Experiences in Close Relationships Questionnaire (Brennan, Clark, & Shaver, 1998). This questionnaire assesses one's levels of anxiety and avoidance, each as dimensional measures of attachment. Eighteen items

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<sup>1</sup> Based on current social norms, one could argue that the likelihood of a man pressuring a woman into having unprotected sex is greater than the likelihood of the reverse. This argument is supported by previous pilot studies conducted in our laboratory. In particular, men who were exposed to a vignette in which the male character was being pressured into having unprotected intercourse by the female character subsequently rated the vignette as unrealistic and inconsistent with social norms. Furthermore, male participants also rated the female character as unlikable. Because we believed that the manipulations used in the current study would be more relevant and realistic for women than for men, only women were included as participants.

measure the anxiety dimension (e.g., “I worry a lot about my relationships”) and another 18 measure the avoidance dimension (e.g., “I am nervous when partners get too close to me”). All items are responded to on a scale from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) and scores on each dimension are determined by taking the mean score from each set of 18 items. In the current sample, both subscales were reliable, (anxiety: Cronbach’s  $\alpha = .90$ , avoidance: Cronbach’s  $\alpha = .94$ ) and were uncorrelated with one another,  $r(142) = .02, p = .82$ . In general, test-retest reliabilities of both subscales of the ECR are high (anxiety:  $r = .94$ ; avoidance:  $r = .91$ ; Fraley, Waller, & Brennan, 2000).

### **Procedure**

This study took place in the lab. Participants were given a selection of five photographs of attractive men taken from the website, [www.hotornot.com](http://www.hotornot.com). On this website, individuals upload photographs of themselves in order for viewers to rate their attractiveness on a scale from 1 (*lowest level of attractiveness*) to 10 (*highest level of attractiveness*). Only those men in the age group of 18 to 25 were selected and each had been given an overall attractiveness rating of at least 9 out of 10. Participants were asked to choose from the five photos which man they found the most attractive. The chosen photograph was kept in the view of participants for the remainder of the study in order to aid participants in imaging a realistic representation of the scenario. The remaining photos were returned to the researcher.

Next, participants were told that they would be reading a vignette. They were asked to imagine themselves as the female character in the scenario and the man in the chosen photograph as the male character. At this point, individuals were randomly assigned (using the online random assignment tool, Research Randomizer) to one of two conditions: rejection or non-rejection and one of two vignettes was administered depending on the assigned condition (see

Appendix A for both vignettes). Both conditions included narrative describing a male and female university student, both wishing to engage in sexual intercourse but finding themselves without a condom. The rejection vignette concluded with narrative describing the participants' fears that the male character might end the relationship if they did not engage in sexual intercourse, thus making the potential for rejection in this situation salient:

Although you are not entirely comfortable with having unprotected sex, you are really sexually attracted to him right now. You also don't want to disappoint him and are worried that he might end the relationship with you if you don't sleep with him. You want him to feel close to you.

In contrast, the non-rejection vignette concluded with no fears of the relationship ending if intercourse was refused:

Although you are not entirely comfortable with having unprotected sex, you are really sexually attracted to him right now. You know that he really wants to sleep with you, but he's not pressuring you - the decision is ultimately up to you.

### **Dependent Measures**

Dependent measures were assessed using a paper-and-pencil questionnaire (see Appendix B). All dependent measures were completed by participants directly after reading the vignette.

**Intentions.** Participants were first asked to respond to the item, "If I were in this situation, I would engage in sexual intercourse" on a scale from 1 (*strongly agree*) to 9 (*strongly disagree*).

**Thoughts.** After reporting their intentions, participants were asked to list up to eight factors that influenced that intentions rating. Thought listings were coded using a template that was designed for previous research (MacDonald, Fong, Zanna, & Martineau, 2000) that assesses

the valence of each statement. Each statement's valence was coded as either impelling (i.e., exhibiting desires/intentions to engage in unprotected sex; e.g., "In the moment, it could be hard to say no";  $M = 1.85$ ,  $SD = 2.09$ ) or inhibiting (i.e., exhibiting desires/intentions to abstain from engaging in unprotected sex; e.g., "I do not want to risk getting pregnant";  $M = 3.03$ ,  $SD = 2.18$ ). If the valence could not be determined from the thought listing ( $M = 0.14$ ,  $SD = 0.44$ ), that particular thought was excluded from analyses. The thought listings were coded by two researchers and high interrater reliability was achieved ( $\kappa = .98$ ). Any disagreements in coding were resolved through discussion between the coders. For each participant, the number of impelling thoughts and the number of inhibiting thoughts were divided by the total number of thoughts listed by that individual. This method was used in order to create a proportion for each type of thought listing so that the results would not be confounded by the number of thoughts listed.

**Justifications.** Eight items were included to assess the justifications that participants used to influence their decision not to use a condom in the situation presented. Examples of items on this scale include, "Using a condom in this situation would kill the romantic mood" and "Because there is no chance of getting pregnant (because of the birth control pill), there's little for me to worry about if we have intercourse." Items were responded to on a scale from 1 (*strongly agree*) to 9 (*strongly disagree*). The eight items showed satisfactory internal consistency (Cronbach's  $\alpha = .79$ ) and so were aggregated into one scale.

**Beliefs that Condoms Protect Against Health Risks.** Two items were included to assess the belief that condoms protect against health risks associated with engaging in sexual intercourse: "I would not get AIDS if I used a condom in this situation" and "I would not get other STIs such gonorrhea, syphilis, or herpes if I used a condom in this situation." Both items

were responded to on a scale from 1 (*strongly agree*) to 9 (*strongly disagree*) and were highly correlated with one another (Cronbach's  $\alpha = .87$ ) and so were each reverse-coded and aggregated into one measure of beliefs that condoms protect against health risks. Higher scores indicated higher beliefs that condoms protect against health risks.

## Results

Means and standard deviations for each dependent measure are listed in Table 1.

Correlations among all dependent measures are listed in Table 2.

Table 1

*Study 1: Means and standard deviations for all dependent measures*

<i>Dependent Measure</i>	<i>M</i>	<i>SD</i>
Intentions	4.57	2.27
Proportion of Impelling Thoughts	.37	.38
Justifications	2.51	1.08
Belief that Condoms Protect Against Health Risks	4.45	2.45

Table 2

*Study 1: Correlations among dependent measures*

	<i>Intentions</i>	<i>Proportion of Impelling Thoughts</i>	<i>Justifications</i>	<i>Belief that Condoms Protect Against Health Risks</i>
Intentions	1.00			
Proportion of Impelling Thoughts	.84**	1.00		
Justifications	.52**	.48**	1.00	
Belief that Condoms Protect Against Health Risks	-.08	-.06	-.05	1.00

\* $p \leq .05$ , \*\* $p < .01$ , † $p < .10$

I conducted a multiple regression analysis on each of the dependent measures to assess the main effects of and interactions among attachment anxiety, attachment avoidance, and rejection condition. Following the recommendations made by Aiken and West (1991), the non-rejection condition was coded as 0 and rejection condition was coded as 1. Next, both anxiety and avoidance scores were mean centered so as to reduce multicollinearity. I then computed all possible two- and three-way interaction terms using the mean centred anxiety and avoidance scores and the rejection condition variable. All significant interactions were followed up using simple slopes analysis (Aiken & West, 1991).

Table 3 presents the unstandardized regression coefficients ( $b$ 's) associated with each predictor entered into the regression analysis for all criterion variables of interest. For simplicity, only significant and marginally significant findings are addressed below.

**Intentions.** Rejection condition significantly predicted intentions, such that those in the rejection condition showed significantly stronger intentions to engage in unprotected sex than those in the non-rejection condition,  $b = .85$ ,  $t(135) = 2.28$ ,  $p = .02$ . Attachment anxiety marginally predicted intentions, such that higher levels of anxiety were associated with stronger intentions to have unprotected sex,  $b = .42$ ,  $t(135) = 1.73$ ,  $p = .08$ . I also found that the anxiety by avoidance interaction was marginally significant,  $b = .36$ ,  $t(135) = 1.74$ ,  $p = .08$ . However, more importantly, this finding was qualified by a significant three-way interaction among the rejection condition, attachment anxiety, and attachment avoidance,  $b = -.58$ ,  $t(135) = -1.96$ ,  $p = .05$  (see Figure 1). The effects of rejection condition on intentions at combinations of high and low levels of both attachment anxiety and attachment avoidance were assessed. Consistent with the theoretical reasoning of our main hypothesis, I found that at high levels of anxiety but low levels

Table 3

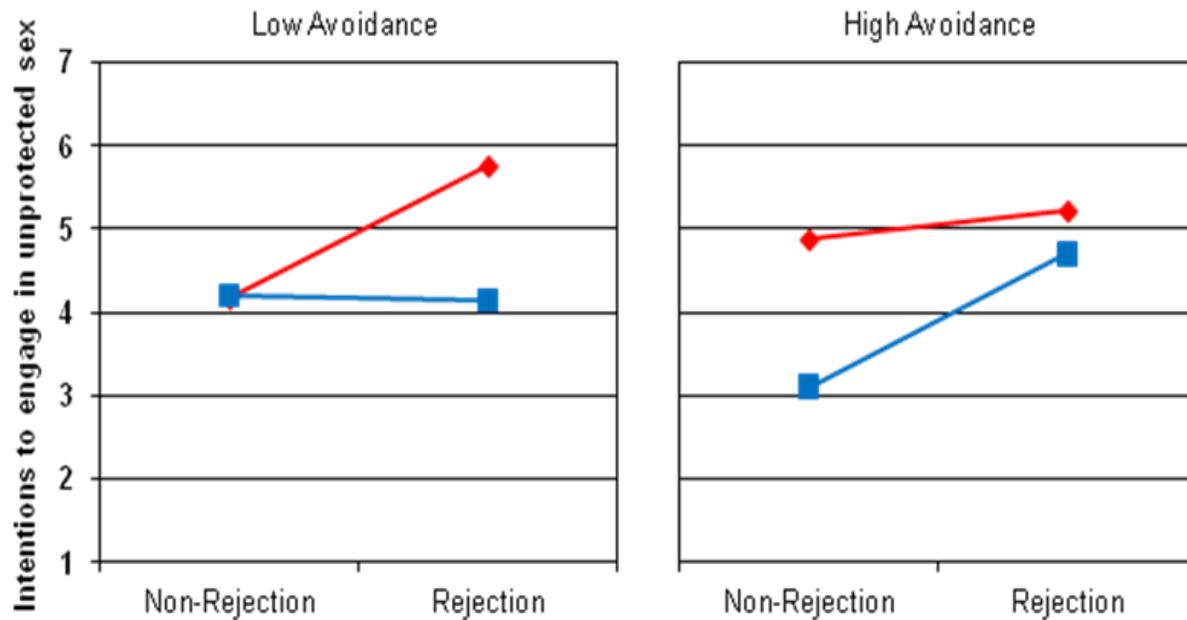
*Study 1: Unstandardized regression coefficients in predicting reactions to the vignette using attachment anxiety, avoidance, and rejection condition.*

	<i>Criterion</i>			
	<i>Intentions</i>	<i>Proportion of Impelling Thoughts</i>	<i>Justifications</i>	<i>Belief that Condoms Protect Against Health Risks</i>
<i>R</i> <sup>2</sup>	.093	.082	.115	.062
<i>Predictor</i>				
Rejection Condition	.85*	.08	.14	-.40
Anxiety	.42 <sup>†</sup>	.02	.27*	.07
Avoidance	-.08	.00	.04	.34
Rejection Condition X Anxiety	.09	.08	-.03	-.74 <sup>†</sup>
Rejection Condition X Avoidance	.08 <sup>†</sup>	.02	-.02	-.32
Anxiety X Avoidance	.36	.02	.24*	.16
Rejection Condition X Anxiety X Avoidance	-.58*	-.11*	.38**	.04

\* $p \leq .05$ , \*\* $p < .01$ , <sup>†</sup> $p < .10$

of avoidance, intentions to engage in unprotected sex were stronger in the rejection condition than in the non-rejection condition,  $b = 1.57$ ,  $t(135) = 1.99$ ,  $p = .05$ . Interestingly, although unexpected, I also found that at low levels of anxiety but high levels of avoidance, the same finding was true: intentions to engage in unprotected sex were higher in the rejection condition than in the non-rejection condition,  $b = 1.59$ ,  $t(135) = 2.09$ ,  $p = .04$ . Finally, at low levels of both anxiety and avoidance, as well as at high levels of both anxiety and avoidance, there was a non-significant difference in intentions ratings between the rejection and non-rejection conditions,

$b = -.07$ ;  $B = .31$ , *ns*, respectively. Therefore, the three-way interaction among attachment anxiety, attachment avoidance, and rejection condition on participants' reported intentions to engage in unprotected sex appears to be driven primarily by the effects of rejection on intentions among women who are high in anxiety but low in avoidance (as predicted) and by women who are low in anxiety but high in avoidance. For both groups, being induced to fear romantic rejection led women to report stronger intentions to engage in unprotected sex relative to women who were not induced to fear such rejection.



*Figure 1*. Three-way interaction among attachment anxiety, attachment avoidance, and rejection condition on intentions to engage in unprotected sexual intercourse.

**Thoughts.** Only the results for the proportion of impelling thoughts (i.e., thoughts that exhibit desires/intentions to engage in unprotected sex) are provided here, as reporting the results for the proportion of inhibiting thoughts would be redundant. There was a significant three-way interaction among the rejection condition, attachment anxiety, and attachment avoidance,  $b = -$

.11,  $t(135) = -2.18$ ,  $p = .03$ . The effects of rejection condition on the proportion of impelling thoughts at combinations of high and low levels of both attachment anxiety and attachment avoidance were assessed. Again, consistent with the theoretical reasoning of our hypothesis, I found that at high levels of anxiety but low levels of avoidance, participants in the rejection condition listed more impelling (and fewer inhibiting) thoughts than participants in the non-rejection condition,  $b = .29$ ,  $t(141) = 2.11$ ,  $p = .04$ . Therefore, among women who are high in anxiety but low in avoidance, being induced to fear romantic rejection led them to report more impelling thoughts relative to women who were not induced to fear such rejection. At low levels of both anxiety and avoidance, at high levels of both anxiety and avoidance, and at low levels of anxiety and high levels of avoidance, there was a non-significant difference in the proportion of impelling thoughts listed between the rejection and non-rejection conditions,  $b = -.16$ ;  $b = .05$ ;  $b = .16$ , *ns*, respectively.

**Justifications.** Attachment anxiety significantly predicted justifications, such that higher levels of anxiety predicted higher endorsement of justifications for engaging in unprotected sex,  $b = .27$ ,  $t(135) = 2.35$ ,  $p = .02$ . The interaction between avoidance and anxiety was also significant,  $b = .24$ ,  $t(135) = 2.48$ ,  $p = .02$ . However, these findings were qualified by a significant three-way interaction,  $b = -.38$ ,  $t(135) = -2.69$ ,  $p = .01$ . At high levels of anxiety and low levels of avoidance, the endorsement of justifications for engaging in unprotected sex was greater in the rejection condition than in the non-rejection condition, although this trend was not significant,  $b = .60$ ,  $t(135) = 1.60$ ,  $p = .11$ . Similarly, at low levels of anxiety and high levels of avoidance, justifications were trending in the direction of being greater in the rejection condition than in the non-rejection condition,  $b = .62$ ,  $t(135) = 1.72$ ,  $p = .09$ , although this difference was once again non-significant. Finally, at low levels of both anxiety and avoidance, and at high

levels of both anxiety and avoidance, there was a non-significant difference in the endorsement of justifications between the rejection and non-rejection conditions,  $b = -.29$ ;  $B = -.39$ , *ns*.

**Beliefs that Condoms Protect Against Health Risks.** One other interesting effect that emerged in the prediction of participants' beliefs that condoms protect against health risks demonstrated that attachment anxiety and rejection condition interacted to influence beliefs that condoms protect, although this finding was marginally significant  $b = -.74$ ,  $t(135) = -1.87$ ,  $p = .06$ . The effects of rejection condition on beliefs that condoms protect at high and at low levels of attachment anxiety were assessed using simple slopes analysis. At low levels of anxiety there was a non-significant difference in beliefs that condoms protect between the rejection and non-rejection conditions,  $b = .38$ , *ns*. At high levels of anxiety, however, the beliefs that condoms protect against health risks was lower in the rejection condition than in the non-rejection condition,  $b = -1.18$ ,  $t(135) = -2.00$ ,  $p = .05$ . Therefore, highly anxious women were less likely to endorse the belief that condoms protect against health risks when rejection was made salient than when it was not.

## Discussion

In sum, my main hypothesis was that attachment anxiety and rejection condition would interact to predict intentions to engage in unprotected sex such that the strongest intentions would be found among highly anxious women in the rejection condition. I also expected and observed the same pattern of results in risky sexual decision-making for participants' thought listings, their justifications for engaging in unprotected sex, and their belief that condoms protect against health risks.

Consistent with the theoretical basis for my predictions, women who were both high in anxiety and low in avoidance reported stronger intentions to engage in unprotected sex when in

the rejection condition than when in the non-rejection condition. Therefore, these women reacted to the rejection threat with stronger reported intentions to engage in unprotected sex.

Surprisingly, the same was true for women who were low in anxiety and high in avoidance. That is, women both low in anxiety and high in avoidance reported stronger intentions to engage in unprotected sex when in the rejection condition than when in the non-rejection condition. Similar to the direction of findings for intentions, I found that among women who were both high in anxiety and low in avoidance, participants listed more impelling thoughts (and fewer inhibiting thoughts) and greater endorsement of justifications for engaging in unprotected sex when in the rejection condition versus the non-rejection condition. Furthermore, highly anxious women in the rejection condition trended toward being less concerned with the health risks associated with unprotected sex than those in the non-rejection condition.

Overall, the current findings do provide support for the notion that one possible driving force of the previously reported relationship between high attachment anxiety and low condom use is the fear of or aversion to romantic rejection. When the possibility of romantic rejection upon the refusal of unprotected sex was made salient, women who were both high in anxiety and low in avoidance reported stronger intentions to engage in unprotected sex, listed more impelling thoughts, and also endorsed more justifications for engaging in unprotected sex. These results are consistent with research suggesting that highly anxious individuals are hypersensitive to cues of rejection, hold a strong aversion to rejection, and therefore might take actions aimed at avoiding rejection (e.g., Baldwin & Kay, 2003; Davis et al., 2003; Feeney & Noller, 1992; Mikulincer et al., 2000; Mikulincer et al., 2002; Zayas et al., 2009). Based on the current study's findings, such actions appear to include intentions to engage in unprotected sex to avoid potential rejection from a partner.

Although unexpected, it is also interesting to note that similar results were found among women who were both low in anxiety and high in avoidance; they showed stronger intentions to engage in unprotected sex and endorsed more justifications for doing so in the rejection condition than in the non-rejection condition. This finding was not predicted for this particular group, as highly avoidant individuals tend to report relatively high levels of condom use and positive attitudes toward condoms (Feeney et al., 2000). Furthermore, highly avoidant individuals are described as wanting to avoid becoming emotionally close and intimate with others (Fraley & Waller, 1998) so for this reason, I did not expect the presence of a rejection threat to impact their sexual decision-making. Importantly, individuals who are high in avoidance and low in anxiety report that they are uncomfortable with emotional closeness and are afraid of intimacy. However, there is some research to suggest that these self-reported feelings may be products of self-defence. In fact, although not expressed outwardly, highly avoidant individuals do tend to exhibit quite an aversion to rejection, only they make an effort to control their rejection-related feelings. For instance, past research demonstrates that highly avoidant individuals generally suppress attachment- and distress-related thoughts (Fraley, Davis, & Shaver, 1998; Fraley & Shaver, 1998) but are unable to do so while under cognitive load, indicating that this suppression might be defensive in nature (Edelstein & Gillath, 2008; Mikulincer et al., 2000). Furthermore, research by Carvallo and Gabriel (2006) has shown that the state self-esteem and positive affect of highly avoidant individuals do not fluctuate following rejecting feedback but do increase following acceptance feedback, thus demonstrating that positive connections with others are valuable to these individuals. Therefore, although my predictions regarding the influence of rejection on condom use applied to women who were high in attachment anxiety, it is not unreasonable to find that the predicted results also held true for

individuals who were high in avoidance (and also low in anxiety), considering their possible underlying concerns with rejection. The influence of rejection on highly avoidant individuals' intentions to engage in risky sexual behaviours and their endorsements of justifications for doing so should be further addressed in future research<sup>2</sup>.

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<sup>2</sup> The finding that rejection-salience led to riskier condom use intentions among women who were low in anxiety and high in avoidance was not replicated in studies 2-4 and therefore will not be addressed further.

### Chapter 3: Study 2

Whereas Study 1 demonstrated that the manipulation of potential partner rejection moderates the influence of attachment anxiety and avoidance on sexual health intentions, Study 2 was designed to assess whether or not rejection in general (i.e., non-specific to a sexual encounter) would have the same effect. Furthermore, instead of measuring intentions to engage in unprotected sex in a specific scenario, I assessed the endorsement of having unprotected sex more broadly by asking participants how long they would wait before switching from having protected to having unprotected sex with a romantic partner.

There is good reason to believe that manipulating rejection in general, outside of the context of a specific sexual encounter, could affect sexual health intentions among women who are high in attachment anxiety. Even outside of any specific relationship context, individuals who are high in anxiety are quicker at accessing words related to proximity and distance (e.g., acceptance and rejection) than those low in anxiety (Mikulincer et al., 2000; 2002). Therefore, thoughts of rejection as a general concept, outside of actual experienced rejection, can work to maintain activation of the attachment system of a highly anxious person.

I predict that this activation, coupled with anxious individuals' hypervigilance in detecting cues of rejection threat (Mikulincer & Shaver, 2003, 2007), will lead individuals high in anxiety to endorse behaviours aimed at avoiding rejection. As noted previously, condom use negotiation between partners is a situation in which the potential for rejection could be salient for women, because men prefer unprotected sex over sex with a condom more so than do women (Randolph et al., 2007). Priming women with thoughts of rejection in general may enhance the degree to which negotiations about condom use are seen as areas of potential rejection threats, particularly among women who are high in attachment anxiety. This enhanced threat may then

lead highly anxious women to have unprotected sex in order to avoid possible rejection in much the same way as rejection threats that are specific to the sexual encounter did in Study 1.

My hypotheses for Study 2 were consistent with those outlined in Study 1. That is, I expected that among women who were high in attachment anxiety, those in the rejection salience condition would endorse riskier sexual health decision-making (i.e., having unprotected sex sooner) than those in the control condition. Recall that in Study 1, I found a three-way interaction among attachment anxiety, avoidance, and rejection salience. Consistent with my predictions, I found that among women high in attachment anxiety and low in attachment avoidance, greater intentions to have unprotected sexual intercourse were reported in the rejection condition, compared to the control condition. Therefore, my predictions in Study 2 could apply to women who are high in attachment anxiety regardless of their levels of avoidance, or to women who are both high in anxiety and low in avoidance.

In Study 1, I also found that women low in attachment anxiety and high in attachment avoidance expressed higher intentions to have unprotected sexual intercourse when rejection was salient than when it was not. Based on the existing literature and the unexpectedness of these results, I did not hypothesize that this finding from Study 1 would necessarily be replicated in Study 2.

## **Method**

### **Participants**

Seventy female participants who were enrolled in the Queen's University Introductory Psychology class were selected to participate in the study. All of the same recruitment and selection criteria from Study 1 were used again in Study 2, based on participants' prescreening responses. That is, participants identified as heterosexual, were not in a steady relationship, were

sexually active, and were regular condom users. All participants had completed the Experience in Close Relationships-Revised scale (ECR-R; Fraley et al., 2000) during prescreening as well. In the current sample, both subscales were reliable, (anxiety: Cronbach's  $\alpha = .89$ , avoidance: Cronbach's  $\alpha = .83$ ) and were uncorrelated with one another,  $r(70) = -.034$ ,  $p = .78$ . In general, test-retest reliabilities of both subscales of the ECR-R are high (anxiety:  $r = .94$ ; avoidance:  $r = .95$ ; Fraley et al., 2000)

### **Procedure**

Participants completed this study online using the online data collection tool, SurveyMonkey.

Participants were randomly assigned (using the online random assignment tool, Research Randomizer) to a rejection-salience or to a control condition in which rejection was not manipulated. Rejection salience was manipulated using a word-string task designed to prime participants with general rejection thoughts (see Appendix C; Sommer & Baumeister, 2002). In this word-string task, participants were asked to unscramble a list of word sets to make a meaningful phrase by crossing out the one word out of four that did not belong. In both conditions, half of the phrases in the list were negative. However, in the rejection-salience condition, the negative phrases were related to rejection (e.g., "they ignore her") whereas in the control condition, they were unrelated to rejection (e.g., "burnt her tongue").

Following the word-string rejection manipulation, participants' sexual health beliefs were assessed. Specifically, participants read the following statement:

Although it is not true for everyone, it is common that in romantic relationships partners first use condoms when engaging in sexual intercourse. After a period of time, they then

stop using condoms but still use other forms of birth control (e.g., birth control pill, patch, ring, etc.).

Participants were then asked to respond to one item that assessed their condom use beliefs: “How long do you think is appropriate (in number of WEEKS) to wait until switching from using condoms to not using condoms?” That is, participants were asked to indicate how long one should wait before having unprotected sex in a sexually active relationship. Lower numbers of weeks reported represented switching sooner from using a condom to not using a condom, thus representing the endorsement of riskier sexual tendencies by having unprotected sex.

### **Results**

I conducted a multiple regression analysis on condom use beliefs to assess the main effects of and interactions among attachment anxiety, attachment avoidance, and rejection-salience condition. Following the recommendations made by Aiken and West (1991), the control condition was coded as 0 and the rejection-salience condition was coded as 1. Next, both anxiety and avoidance scores were mean centered so as to reduce multicollinearity. I then computed all possible two- and three-way interaction terms using the mean centred anxiety and avoidance scores and the general rejection variable. All significant interactions were followed up using simple slopes analysis (Aiken & West, 1991).

On average, participants reported that they would wait 17.24 weeks ( $SD = 16.22$ ) before switching from using a condom to no longer using a condom in a sexual relationship. Table 4 presents the unstandardized regression coefficients ( $b$ 's) associated with each predictor entered into the regression analysis for the endorsement of unprotected sex variable. For simplicity, only significant and marginally significant findings are addressed below.

The rejection-salience manipulation significantly predicted the endorsement of unprotected sex, such that those in the rejection-salient condition indicated that they would switch to having unprotected sex sooner than those in the control condition,  $b = -8.78, t(62) = -2.582, p = .012$ . Main effects of attachment anxiety and attachment avoidance were also found, such that higher levels of each predicted switching to having unprotected sex later,  $b = 6.68, t(62) = 2.54, p = .011$ ;  $b = 10.11, t(62) = 3.34, p = .001$ , respectively.

Table 4

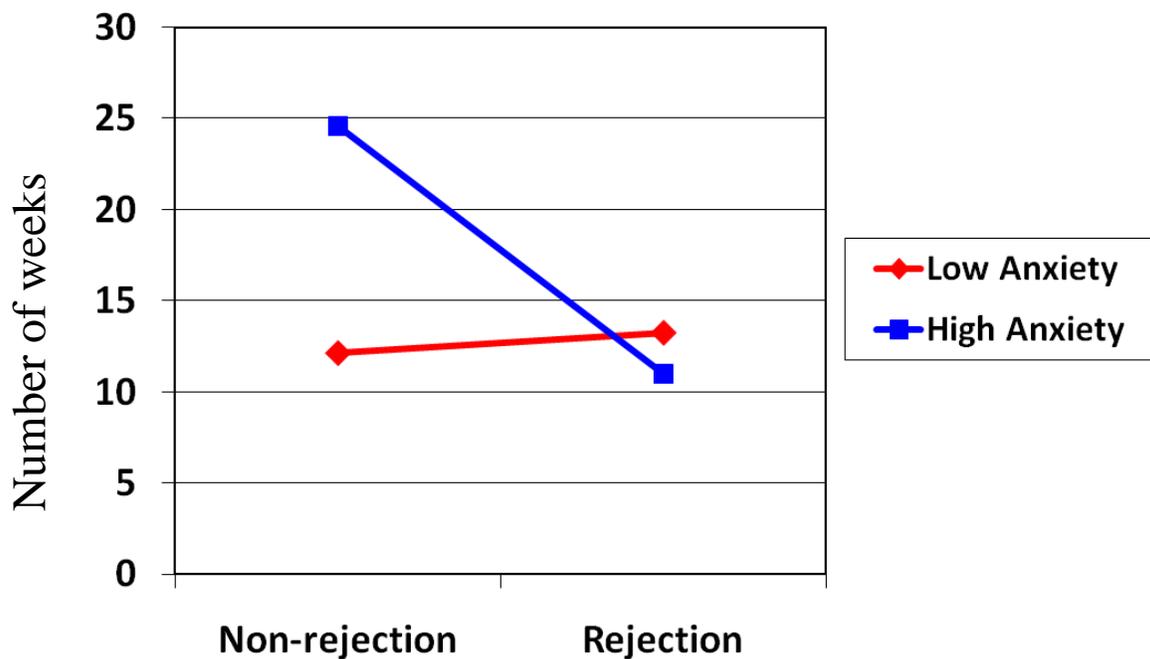
*Study 2: Unstandardized regression coefficients in predicting the number of weeks before switching from having sex with to having sex without a condom, using attachment anxiety, avoidance, and rejection salience condition.*

	Number of Weeks before Switching
$R^2$	.305
<i>Predictor</i>	
Rejection Condition	-8.78*
Anxiety	6.68*
Avoidance	10.11*
Rejection Condition X Anxiety	-7.91*
Rejection Condition X Avoidance	-8.51
Anxiety X Avoidance	-2.69
Rejection Condition X Anxiety X Avoidance	-.58

\* $p \leq .05$ , \*\* $p < .01$ , † $p < .10$

Most importantly, I found a significant two-way interaction between the rejection-salience manipulation and attachment anxiety,  $b = -7.91, t(62) = -2.08, p = .042$  (See Figure 2). Using simple slopes analysis, I found that among women low in attachment anxiety, the number of weeks before switching to unprotected sex did not differ between the rejection-salience condition and the control condition,  $b = -1.39, t(62) = -.29, p = .77$ . However, among women

high in attachment anxiety, those in the rejection-salient condition reported switching from protected to unprotected sex sooner than those in the control condition,  $b = -16.17$ ,  $t(62) = -3.17$ ,  $p = .002$ . Therefore, as expected, women high in attachment anxiety were more likely to endorse unprotected sex when rejection was made salient than when it was not, whereas rejection salience had no impact on responses of women low in attachment anxiety. All remaining two- and three-way interactions were non-significant.



*Figure 2.* Two-way interaction between attachment anxiety and rejection-salience condition on the number of weeks before switching from having protected to unprotected sex.

### Discussion

The findings from Study 2 provide further evidence for the moderating role of rejection in the relationship between attachment anxiety and condom use. I found that among women who were high in attachment anxiety, those who were primed with rejection salience endorsed

switching from protected to unprotected sex sooner than did those who were not primed with rejection salience, whereas rejection salience did not affect the responses of participants who were low in attachment anxiety. Therefore, consistent with Study 1, rejection once again led highly anxious women to endorse riskier sexual tendencies. Interestingly, the findings from Study 2 indicate that rejection salience need not be specific to a sexual encounter or even to a romantic context in order to influence sexual decision-making. Simply priming rejection in general affected the endorsement of sexual risk-taking intentions among women high in attachment anxiety.

It is interesting to note the pattern of the interaction found between attachment anxiety and rejection-salience on the number of weeks reported. As can be seen from Figure 2, the simple slope for women who were high in anxiety shows a strong drop in the number of weeks reported from the control condition to the rejection-salience condition. The same is not true for women who were low in anxiety. However, the number of weeks reported for women who were high in anxiety in the control condition was higher than the number of weeks reported for women who were low in anxiety in the control condition. The number of weeks reported in the rejection-salience condition was virtually the same for both low and high anxiety women. Therefore, in Study 2, it was not the case that rejection-salience made highly anxious women endorse more risky sexual tendencies than women who were low in anxiety under the same rejection manipulation. Highly anxious women actually endorsed lower risky tendencies than did women who were low in anxiety when rejection was not made salient. This particular pattern of results was not expected, as higher levels of anxiety have consistently been associated with higher levels of sexual risk-taking (Feeney et al., 1999; 2000). Exploration into this pattern of results should be further explored in future research if replicated. Most importantly, however, regardless of this

unexpected difference between high and low anxiety participants in the control condition, the hypothesis that rejection-salience leads to riskier sexual tendencies among women who are high in attachment anxiety was still supported by the findings of Study 2. The rejection-salience manipulation did indeed lead highly anxious women to endorse switching sooner from having protected to having unprotected sex compared with highly anxious women in the control condition.

Importantly, I did not replicate the unexpected findings among women high in avoidance and low in anxiety from Study 1. That is, the endorsement of risky sexual tendencies among women in Study 2 who were high in avoidance and low in anxiety was not affected by the rejection condition to which they were assigned.

## **Chapter 4: Study 3**

Study 3 was designed to assess the interaction between attachment anxiety and general rejection-salience on the endorsement of sexual risk-taking (i.e., lower condom use intentions) with the goals of replicating the finding from Study 2 using a different method of measuring risk-taking. Participants were exposed to a general rejection-salience manipulation, as in Study 2, and then were asked to place a series of relationship behaviours along a timeline. The main relationship behaviour of interest related to engaging in unprotected sexual intercourse. Once again, I predicted an interaction between attachment anxiety and rejection condition. Specifically, I hypothesized that among participants who were high in anxiety (and possibly also low in avoidance), those in the rejection condition would be more likely to put the unprotected sex behaviour sooner in the timeline than those in the non-rejection condition. Among women who were low in attachment anxiety (regardless of their level of attachment avoidance), I hypothesized that there would be no difference in the placement of the unprotected sex behaviour in the relationship timeline between those in the rejection versus non-rejection conditions. That is, I expected to find a conceptual replication of the results found in Studies 1 and 2, demonstrating that rejection salience influences highly anxious women to endorse more risky sexual health tendencies.

### **Method**

#### **Participants**

Eighty-three participants who were enrolled in the Queen's University Introductory Psychology class were selected to participate in the study. As in Studies 1 and 2, participants identified as heterosexual, were not in a steady relationship, were sexually active, and were regular condom users. All participants completed the ECR-R (Fraley et al., 2000) during

prescreening. Both subscales were reliable, (anxiety: Cronbach  $\alpha = .93$ , avoidance: Cronbach  $\alpha = .92$ ). Attachment anxiety and attachment avoidance scores were significantly correlated with one another in this sample,  $r(83) = -.32, p = .003$ .

### **Procedure**

Participants were randomly assigned (using the online random assignment tool, Research Randomizer) to unscramble words that either primed them for rejection or non-rejection using the same task that was used in Study 2 (Sommer & Baumeister, 2002).

Participants were then given a list of 17 romantic relationship behaviours, including physical aspects of a relationship (e.g., “kiss with tongue” and “oral sex”) as well as milestone moments in a relationship (e.g., “meet friends” and “seeing each other”; See Appendix D for the full list of romantic relationship behaviours). This list of behaviours was adopted from an activity used in the applied sexual health setting to educate audiences on healthy relationships. Next to each listed behaviour, participants were asked to indicate how many weeks into a romantic relationship they believed each behaviour belonged. Specifically, participants were given the instructions to “indicate the number of weeks into a relationship you think each event belongs. For example, the time you first meet would be considered as week 1.”). All 17 behaviours were listed in the same order for each participant. The main label of interest was “penetrative intercourse without protection” and this behaviour was listed last.

### **Results**

The mean number of weeks reported for the label “penetrative intercourse without protection” was 33.57 ( $SD = 28.84$ ). I conducted a multiple regression analysis on the number of weeks into a relationship participants reported that having “penetrative intercourse without protection” belonged in a relationship timeline. Attachment anxiety, attachment avoidance, and

rejection-salience condition were the predictors. Following the recommendations made by Aiken and West (1991), the control condition was coded as 0 and rejection-salience condition was coded as 1. Next, both anxiety and avoidance scores were mean centered so as to reduce multicollinearity. I then computed all possible two- and three-way interaction terms using the mean centred anxiety and avoidance scores and the general rejection-salience variable. All significant interactions were followed up using simple slopes analysis (Aiken & West, 1991).

Table 5 presents the unstandardized regression coefficients ( $b$ 's) associated with each predictor entered into the regression analysis. For simplicity, only significant and marginally significant findings are addressed below.

Table 5

*Study 3: Unstandardized regression coefficients in predicting the number of weeks that having unprotected penetrative intercourse belongs in a relationship using attachment anxiety, avoidance, and rejection condition.*

	<i>Number of Weeks</i>
$R^2$	.108
<i>Predictor</i>	
Rejection Condition	10.37
Anxiety	1.16
Avoidance	9.51
Rejection Condition X Anxiety	2.75
Rejection Condition X Avoidance	-12.34
Anxiety X Avoidance	7.92 <sup>†</sup>
Rejection Condition X Anxiety X Avoidance	-14.79*

\* $p \leq .05$ , \*\* $p < .01$ , <sup>†</sup> $p < .10$

There were no significant main effects found for the rejection-salience condition, attachment anxiety, or attachment avoidance. There was a marginal two-way interaction between attachment anxiety and attachment avoidance,  $b = 7.915$ ,  $t(75) = 1.672$ ,  $p = .099$ .

Most importantly, however, I found a significant three-way interaction among the rejection-salience manipulation, attachment anxiety, and attachment avoidance,  $b = -14.785$ ,  $t(75) = -2.29$ ,  $p = .025$ . Using simple slopes analysis, I found that among women low in both attachment anxiety and avoidance, the number of weeks reported by participants for the label “penetrative intercourse without protection” did not differ between the rejection-salient condition and the control condition,  $b = 5.49$ ,  $p = .591$ . The same was true for women low in anxiety and high in avoidance and for women high in both anxiety and avoidance,  $b = 9.80$ ;  $B = -12.05$ , *ns*, respectively. However, among women high in attachment anxiety and low in attachment avoidance, those in the rejection-salient condition reported a *higher* number of weeks for the label “penetrative intercourse without protection” than those in the control condition,  $b = 38.23$ ,  $t(75) = 2.59$ ,  $p = .012$ . Therefore, women high in attachment anxiety and low in attachment avoidance reported that unprotected sex belonged later in the time course of a relationship when first exposed to a rejection-salient manipulation than when they were not exposed to rejection-salience; a finding that is opposite from what was predicted.

I conducted a multiple regression analysis on the number of weeks into a relationship participants reported that each of the other relationship behaviours belonged in a relationship timeline. Significant results were found for only one of these relationship behaviours: “seeing

each other.” Because results related to this relationship behaviour are not relevant to any of my hypotheses, I do not report them here. These results can be found in Appendix E<sup>3</sup>.

### Discussion

In Study 3, I expected to replicate the finding from Study 1 that highly anxious women who were exposed to a rejection-salience manipulation would endorse more risky sexual health tendencies with regard to condom use intentions than would those who were not exposed to rejection-salience. Specifically, I expected highly anxious women in the rejection-salience condition to indicate that having unprotected sexual intercourse belonged sooner in a relationship timeline compared with highly anxious women in the control condition. In fact, the opposite was true. Among highly anxious women who were also low in avoidance, those who were exposed to rejection-salience placed unprotected sex *later* in a relationship timeline than those who were not exposed to rejection-salience. As expected, the rejection-salience manipulation did not affect the risky sexual endorsements of women who were low in attachment anxiety.

The findings from Study 3 were quite surprising. Studies 1 and 2 both support the idea that rejection-salience leads highly anxious women to endorse more risky sexual tendencies. Furthermore, all of the previously cited literature points to the negative role that rejection may play for highly anxious women when making sexual health decisions.

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<sup>3</sup> I also calculated a difference score between the number of weeks reported for “penetrative intercourse without protection” and the number of weeks reported for “testing for STIs” and found a marginally significant three-way interaction for this difference score,  $b = -10.62$ ,  $t(75) = -1.91$ ,  $p = .06$ . Using simple slopes analysis, I found that among women who were high in anxiety and low in avoidance, those in the rejection-salience condition reported longer times between being tested for STIs and having penetrative intercourse without protection versus those who were in the non-rejection condition,  $b = 34.93$ ,  $t(75) = 2.74$ ,  $p = .008$ . Therefore, among women who were high in anxiety and low in avoidance, those who were in the non-rejection condition reported that it was appropriate to wait longer between being tested and having unprotected sex than those in the rejection condition. No other simple slopes were significant.

Upon further reflection on Study 3's design, one possible explanation for the unexpected findings became apparent. Among the relationship behaviours listed, "penetrative intercourse without protection" was only one among several labels. Importantly, the other labels were all relatively positive in valence (e.g., "holding hands," "going out," "kiss"). It could be the case that the inclusion of several positive relationship thoughts in the list of behaviours acted to reduce the impact of the rejection-salience manipulation on women high in attachment anxiety. That is, women who were high in anxiety and who were exposed to the rejection salience manipulation would have experienced hypersensitivity to signs of rejection (Mikulincer & Shaver, 2003, 2007). Upon reading the list of positive behaviours, these reassuring relationship thoughts may have assuaged the rejection anxieties evoked by the rejection salience manipulation and may have even reduced these anxieties beyond the typical levels experienced by highly anxious individuals. As such, the positive relationship thoughts may have offset the influence of the rejection salience manipulation and in fact may have provided a way for highly anxious women to temporarily overcome their fears of rejection when completing this study's task.

Indeed, perceiving exaggerated cues of affection and acceptance from a romantic partner can help regulate feelings of insecurity among individuals who are high in attachment insecurity and can reduce their expectations for rejection (Lemay & Dudley, 2011). For instance, in a daily diary study, chronically insecure individuals (measured using attachment, self-esteem, and hurt proneness) reported lower daily insecurity on days after they perceived high levels of exaggerated affection from their partner.

Also consistent with this reasoning, highly anxious individuals' perceptions of acceptance and support are positively related to their views on romantic relationship longevity

(Campbell, Simpson, Boldry, & Kashy, 2005) and individuals who are low in self-esteem (which correlates with high attachment anxiety; Brennan & Morris, 1997; Bylsma, Cozzarelli, & Sumer, 1997) feel more secure in their relationships after focusing on the significance of acceptance feedback from their partner (in the form of compliments; Marigold, Holmes, & Ross, 2007) and are also more receptive to acceptance feedback when it is unambiguous (Jacobs, Berscheid, & Walster, 1971; Walster, 1965).

Attachment has even been shown to change after an individual is exposed to different experimental manipulations or after he or she thinks of different types of relationships (e.g., Baldwin et al., 1996). Therefore, the construct of attachment, and thus the experience of rejection anxieties, is not entirely stable and can fluctuate depending on contextual cues. In the case of Study 3, the other behaviours presented as part of the task highlighted relationship thoughts that were both positive and accepting. It is possible that those types of thoughts reduced rejection fears among highly anxious participants, particularly among those who were first exposed to rejection-salience.

Whereas the results of Study 3 were opposite from what was expected, they were also potentially encouraging as they suggested that highly anxious women can be induced to endorse more cautious sexual health tendencies. In a literature that consistently reports the association between attachment anxiety and risky sexual behaviours, the findings of Study 3 point toward a possible method for reducing these risky behaviours. Therefore, further research into the mechanisms that explain the unexpected findings from Study 3 could provide important insight into sexual risk-reduction and sexual health promotion for highly anxious women.

## Chapter 5: Study 4

Study 4 was designed to follow up the unexpected results found in Study 3. Whereas I expected that priming rejection-related thoughts would lead highly anxious women to report that they would have unprotected sex sooner into a relationship, results of Study 3 showed the opposite. That is, women high in anxiety and low in avoidance who were primed with rejection indicated that unprotected sex should occur *later* in a romantic relationship compared to women who were high in anxiety and not primed with rejection.

The goal of Study 4 was to test the idea that following a rejection-salience manipulation with thoughts of positive relationship behaviours may lead women who are high in attachment anxiety to experience enough reassurance to offset the impact of the rejection salience manipulation. In the context of Study 3, this reassurance could have been enough to lead highly anxious women who were primed with rejection to report less risky sexual health intentions. In Study 4, this reassurance hypothesis is tested more broadly, outside of the context of sexual health.

For Study 4, rejection salience either was or was not made salient to participants. Following this rejection-salience manipulation, participants were either exposed to positive relationship thoughts or to positive non-relationship thoughts. Specifically, I predicted an interaction among the rejection-salience condition, positive thoughts condition, and attachment anxiety (and possibly attachment avoidance). I hypothesized that among women who were high in attachment anxiety (and possibly also low in attachment avoidance) and who were exposed to positive relationship thoughts, those who were first exposed to rejection-salience would

experience lower levels of rejection sensitivity as compared to those who were not first exposed to rejection salience<sup>4</sup>.

## Method

### Participants

One hundred and thirty-two female participants took part in this study for a \$5 coffee shop gift certificate. Participants included individuals from the Queen's University Introductory Psychology class ( $n = 64$ ) as well as from other courses ( $n = 68$ ). All participants were self-identified as heterosexual and single (not in a romantic relationship). All participants completed the ECR-R (Fraley et al., 2000) during prescreening. Both subscales were reliable, (anxiety: Cronbach  $\alpha = .91$ , avoidance: Cronbach  $\alpha = .93$ ). Attachment anxiety and attachment avoidance scores were significantly correlated with one another in this sample,  $r(132) = .26, p = .003$ .

### Procedure

Participants completed this study using the online data collection tool, SurveyMonkey.

Participants were first randomly assigned (using the online random assignment tool, Research Randomizer) to unscramble a set of words that either made general rejection salient or that did not. This rejection-salience manipulation employed the same word-string task as that was used in Studies 2 and 3 (Sommer & Baumeister, 2002).

Participants were then given a second word-string task that was designed to manipulate positive relationship thoughts. This second word-string task was not presented to be separate

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<sup>4</sup> Because the majority of available participants who were female, single, and sexually active had participated in Studies 2 or 3, I was unable to recruit a full sample of sexually active participants for Study 4. The majority of participants that I could draw from for Study 4 were not sexually active. For this reason, I designed the study to assess a general measure of rejection sensitivity to understand the unexpected findings in Study 3 rather than focus on condom use and sexual health decision-making directly. I reasoned that individuals who have never engaged in sexual intercourse may not relate to the dilemma of using or not using a condom in the same way that someone who has had sexual intercourse would. Furthermore, for individuals who intend to abstain from sex before marriage, any discussion of sex and condom use in the context of a newly forming relationship would likely not be relevant to them.

from the first and instead was added seamlessly to the first set of word-strings. This second word-string task was created for the purposes of the current study and its instructions were identical to those given for the rejection salience manipulation. That is, participants were asked to unscramble a list of word sets to make a meaningful phrase by crossing out the one word out of four that did not belong. Each participant was randomly assigned (again using the online random assignment tool, Research Randomizer) to one of two conditions. In the positive relationship thoughts condition, participants unscrambled phrases that related to thoughts of positive relationship behaviours within one's own hypothetical relationship (e.g., "we hold hands"). In the positive non-relationship thoughts condition, participants unscrambled positive phrases that were unrelated to romantic relationships (e.g., "the sun shines"). For a full list of phrases in each condition, see Appendix F.

Finally, participants completed an adapted version of the Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996) which acted as the dependent measure in this study. The RSQ presents hypothetical scenarios describing social interactions (e.g., "You ask your boyfriend/girlfriend if he/she really loves you"). Each scenario is followed by asking the test-taker to indicate how concerned or anxious they would be that they would be rejected in this scenario on a scale from 1 (*very unconcerned*) to 6 (*very concerned*) as well as to indicate their expectations for being accepted in this scenario on a scale from 1 (*very unlikely*) to 6 (*very likely*). The RSQ was first developed as a long-version, 18-item questionnaire portraying 18 different scenarios of potentially rejecting social interactions (Downey & Feldman, 1996). A short-version RSQ was also developed by including only 8 of the original 18 scenarios. For the purposes of the current study, I adapted the 8-item version of the RSQ to include questions that related specifically to social interactions with peers or with romantic partners. Therefore, the

three items in the short-version RSQ that related to social interactions with one's parents were replaced with three items that related to peer or romantic partner interactions. These replacement items were taken from the long-version RSQ. See Appendix G for a full list of items used in this study. I calculated mean rejection sensitivity scores by reverse-coding the likelihood for acceptance scores for each item, multiplying those scores by the concern for rejection scores for each item to create a product score for each item, and then computing a mean score using each of the 8 items' product scores. Higher mean scores indicated higher sensitivity to rejection.

### **Results**

I assessed the distribution of mean rejection sensitivity scores among all participants. One participant scored 4.42 standard deviations above the mean and so was removed from all of the following analyses.

I conducted a multiple regression analysis on mean rejection sensitivity scores to assess the main effects of and interactions among attachment anxiety, attachment avoidance, rejection condition, and positive thoughts condition. Following the recommendations made by Aiken and West (1991), the non-rejection condition was coded as 0 and the rejection condition was coded as 1. The positive non-relationship thoughts condition was coded as 0 and the positive relationship thoughts condition was coded as 1. Next, both anxiety and avoidance scores were mean centered so as to reduce multicollinearity. I then computed all possible two-, three-, and four-way interaction terms using the mean centred anxiety and avoidance scores, the rejection condition variable, and the positive thoughts condition variable. Interactions were followed up using simple slopes analysis (Aiken & West, 1991).

Table 6 presents the unstandardized regression coefficients ( $b$ 's) associated with each predictor entered into the regression analysis. For simplicity, only significant and marginally

significant findings are addressed below and interactions that were qualified by higher-order interactions were not followed up using simple slopes analysis.

Main effects of attachment anxiety and attachment avoidance were significant, such that higher levels of anxiety and of avoidance were associated with higher levels of rejection sensitivity,  $b = 3.69$ ,  $t(116) = 5.75$ ,  $p < .001$ ;  $b = 1.49$ ,  $t(116) = 2.14$ ,  $p = .035$ , respectively.

Table 6

*Study 4: Unstandardized regression coefficients in predicting rejection sensitivity scores using attachment anxiety, avoidance, rejection-salience condition, and positive thoughts condition.*

	Number of Weeks
$R^2$	.478
<i>Predictor</i>	
Rejection Condition	.73
Positive Thoughts Condition	.54
Anxiety	3.69**
Avoidance	1.49*
Rejection X Positive Thoughts	-2.04
Rejection X Anxiety	-2.05 <sup>†</sup>
Rejection X Avoidance	.51
Positive Thoughts X Anxiety	.46
Positive Thoughts X Avoidance	-.43
Anxiety X Avoidance	2.93**
Rejection X Positive Thoughts X Anxiety	-.01
Rejection X Positive Thoughts X Avoidance	-1.937
Rejection X Anxiety X Avoidance	-1.68 <sup>†</sup>
Positive Thoughts X Anxiety X Avoidance	-1.62
Rejection X Positive Thoughts X Anxiety X Avoidance	.71

\* $p \leq .05$ , \*\* $p < .01$ , <sup>†</sup> $p < .10$

The interaction between attachment anxiety and attachment avoidance was significant,  $b = 2.93$ ,  $t(116) = 4.41$ ,  $p < .001$ , and the interaction between attachment anxiety and rejection condition was marginally significant,  $b = -2.05$ ,  $t(116) = -1.94$ ,  $p = .055$ .

These main effects and interactions were all qualified by a marginally significant interaction among the rejection, anxiety, and avoidance,  $b = -1.68$ ,  $t(116) = -1.71$ ,  $p = .090$ . Using simple slopes analysis, I found that among women low in anxiety and high in avoidance, those in the rejection-salient condition experienced higher levels of rejection sensitivity than those in the control condition,  $b = 4.58$ ,  $t(116) = 2.53$ ,  $p = .013$ . The rejection sensitivity scores did not differ by rejection condition for women low in both anxiety and avoidance ( $b = 0.68$ ,  $p = .580$ ), high in anxiety and low in avoidance ( $b = -2.15$ ,  $p = .308$ ), or high in both anxiety and avoidance ( $B = -0.18$ ,  $p = .941$ ). Therefore, only women who were low in anxiety and high in avoidance became more sensitive to rejection after being exposed to such rejection, however this finding was only marginal.

Contrary to my original hypothesis, the three-way interaction among the rejection-salience condition, the positive thoughts condition, and attachment anxiety was not significant ( $B = -.01$ ,  $p = .998$ ), nor was the four-way interaction among the rejection-salience condition, the positive thoughts condition, attachment anxiety, and attachment avoidance ( $B = 0.71$ ,  $p = .649$ ).

### **Analysis of Variance (ANOVA) Results**

As reported above, the findings from the multiple regression analysis did not support my hypotheses. However, because of sampling limitations, the number of participants in Study 4 may have been too low to detect expected differences and additional sampling in the future may lead to more promising findings. Because of this limitation, I chose to analyze the data further to explore the pattern of mean differences in rejection sensitivity scores. As a follow-up to the

results of the regression analysis, I created categorical variables from the continuous attachment anxiety and avoidance measures and analyzed the data using a factorial ANOVA. This ancillary analysis was conducted to assess whether or not the pattern of means was consistent with my hypotheses. ANOVA results are reported below but should be interpreted with caution, keeping in mind that anxiety and avoidance are generally measured as continuous dimensions and thus are not typically broken down into categories. The analyses below are exploratory and are meant to understand patterns within the data rather than to draw conclusions about relationships among variables.

To analyse the data using ANOVA, I first computed a median split for both the anxiety ( $Mdn = 3.50$ ) and avoidance ( $Mdn = 3.83$ ) variables, creating low and high categories of each. Although it would be more appropriate to split these variables into three categories each (i.e., low, moderate, and high) for a more detailed understanding of how the range of anxiety and avoidance scores influence rejection sensitive and to allow for a better sense of non-linear relationships within the data, the sample size of Study 4 was too small for this analysis to be statistically meaningful. With a tertiary split on the anxiety and avoidance variables, the factorial ANOVA would result in a 36-cell design. With this design, 24 out of 36 of the cells would have sample sizes lower than five (two cells would have sample sizes of zero), leaving little power to detect significant differences among groups. Using a tertiary split for the ANOVA would therefore not be very meaningful and so is not reported here. However, despite the small sample sizes per cell when using the tertiary split, the pattern of means is quite similar to that found using the median split and so these results are included in Appendix H.

After computing a median split for both anxiety and avoidance, these two new categorical variables, along with rejection-salience condition and positive thoughts condition, were entered

as independent variables into a 4-way ANOVA. Mean rejection sensitivity scores were entered as the dependent variable.

Whereas several significant effects emerged from this analysis (see Table 7 for the  $F$  statistics associated with each main effect and interaction), they were all qualified by a significant 4-way interaction among anxiety, avoidance, rejection-salience condition, and positive thoughts condition,  $F(1, 120) = 4.43, p = .037$ . Simple main effects analyses were conducted to break down the 4-way interaction.

Table 7

*Study 4: F statistics in predicting rejection sensitivity scores using attachment anxiety (high vs. low), avoidance (high vs. low), rejection-salience condition, and positive thoughts condition.*

<i>Predictor</i>	<i>Rejection Sensitivity</i>
Rejection Condition	.95
Positive Thoughts Condition	.03
Anxiety	23.63**
Avoidance	1.22
Rejection X Positive Thoughts	6.63*
Rejection X Anxiety	7.42**
Rejection X Avoidance	.06
Positive Thoughts X Anxiety	.11
Positive Thoughts X Avoidance	.26
Anxiety X Avoidance	7.39**
Rejection X Positive Thoughts X Anxiety	.06
Rejection X Positive Thoughts X Avoidance	3.60 <sup>†</sup>
Rejection X Anxiety X Avoidance	.01
Positive Thoughts X Anxiety X Avoidance	2.10
Rejection X Positive Thoughts X Anxiety X Avoidance	4.43*

\* $p \leq .05$ , \*\* $p < .01$ , <sup>†</sup> $p < .10$

The simple main effects of most interest were among women who were high in anxiety and low in avoidance. Among these women, I wanted to determine if rejection sensitivity scores

were lower among women who were exposed to rejection-salience and then exposed to positive relationship thoughts compared to women who were not exposed to rejection-salience but who were exposed to positive relationship thoughts. Indeed, among women who were high in anxiety and low in avoidance and who were exposed to positive relationship thoughts, those who were first exposed to rejection-salience had significantly lower rejection sensitivity scores ( $M = 11.18$ ) than those who were not first exposed to rejection-salience ( $M = 15.41$ ),  $p = .047$ .

The same was true for women who were high in both anxiety and avoidance and who were exposed to positive relationship thoughts. That is, those who first were exposed to rejection-salience had lower rejection sensitivity scores ( $M = 12.49$ ) than those who were not first exposed to rejection-salience ( $M = 16.69$ ),  $p = .006$ .

The only other significant simple main effect found was among women who were low in anxiety and high in avoidance and who were exposed to positive non-relationship thoughts. Among these women, those in the rejection condition experienced greater levels of rejection sensitivity ( $M = 12.41$ ) than those in the non-rejection condition ( $M = 6.65$ ),  $p = .012$ .

The results of all other simple main effects comparing the rejection sensitivity scores between participants in the rejection-salience condition versus the non-rejection condition are reported in Table 8.

## Discussion

Study 4 was designed to understand the unexpected findings from Study 3. Specifically, it tested the hypothesis that highly anxious women who were exposed to rejection salience followed by positive relationship thoughts would experience lower levels of rejection sensitivity

Table 8

*Study 4: Pairwise comparisons by rejection-salience condition for rejection sensitivity scores as a function of anxiety, avoidance, and positive thoughts conditions.*

	<i>Rejection Sensitivity Scores</i>		
	<i>Rejection-Salience Condition Mean</i>	<i>Non-Rejection-Salience Condition Mean</i>	<i>Mean Difference</i>
<b>Positive Neutral Thoughts</b>			
Low Anxiety, Low Avoidance	11.62	11.00	.62
Low Anxiety, High Avoidance	12.41	6.65	5.76*
High Anxiety, Low Avoidance	11.22	11.90	-.68
High Anxiety, High Avoidance	14.99	16.21	-1.22
<b>Positive Relationship Thoughts</b>			
Low Anxiety, Low Avoidance	11.69	9.41	2.28
Low Anxiety, High Avoidance	8.19	11.96	-3.76
High Anxiety, Low Avoidance	11.18	15.41	-4.23*
High Anxiety, High Avoidance	12.49	16.69	-4.20**

\* $p \leq .05$ , \*\* $p < .01$ , † $p < .10$

as compared with those who were not exposed to rejection salience but who were still exposed to positive relationship thoughts. Support for this hypothesis was mixed.

Upon conducting analyses using multiple regression, I found no significant results to support my hypothesis for Study 4. However, I did find a marginal interaction among anxiety, avoidance, and rejection-salience condition on rejection sensitivity scores. Among women who were low in anxiety and high in avoidance, those in the rejection-salience condition had higher rejection sensitivity scores than those in the control condition. Although this specific finding was not predicted as part of my hypotheses, it does fall in line with finding from Study 1 that suggested that women who are low in anxiety and high in avoidance may react negatively to rejection. In Study 1, these women reported stronger intentions to have unprotected sex in the rejection-salience condition than in the control condition – a finding that reflected intentions to behave in such a way that reduced the likelihood of rejection. In Study 4, these women

experienced higher levels of rejection sensitivity in the rejection-salience condition than in the control condition, again suggesting a negative reaction to signs of rejection. As discussed in Study 1, these findings may support previous research suggesting that highly avoidant individuals may report that they do not want intimacy with, or need approval from, others in a self-defensive manner so as to protect themselves against any potential pain they may feel if rejection does occur (Carvallo & Gabriel, 2006; Edelstein & Gillath, 2008; Fraley, et al., 1998; Fraley & Shaver, 1997; Mikulincer et al., 2000).

After finding no significant results to support my hypotheses using multiple regression analysis, I explored the pattern of rejection sensitivity means by breaking my continuous anxiety and avoidance measures into categorical variables using a median split. The resulting patterns did suggest some support for my predictions. In particular, I assessed the 4-way interaction among anxiety, avoidance, rejection-salience condition, and positive thoughts condition and found that among women who were high in anxiety and low in avoidance as well as those who were high in both anxiety and avoidance, those who were exposed to rejection-salience before being exposed to positive relationship thoughts showed lower levels of rejection sensitivity than those who were not exposed to rejection-salience before being exposed to positive relationship thoughts. Therefore, when positive relationship thoughts followed rejection-related thoughts, rejection sensitivity appeared to be attenuated for women who were high in anxiety and low in avoidance and for women who were high in both anxiety and avoidance.

Importantly, these results supporting my hypothesis must be interpreted with caution, as they were meant to be more exploratory in nature. These results were found after dichotomizing anxiety and avoidance measures into low and high categories in order to understand the pattern of mean differences within the data but were not replicated when anxiety and avoidance were left

as continuous measures in a multiple regression analysis. For this reason, interpretations of the results from Study 4 are limited and should not draw conclusions about the relationships among anxiety, avoidance, positive relationship thoughts, and rejection-salience. Instead, future research must continue to explore the role of positive relationship thoughts in attenuating the impact of rejection-salience on rejection sensitivity among highly anxious women in order to draw such conclusions. However, the current study does provide preliminary evidence to suggest that the presence of positive relationship thoughts may offset the impact of rejection-salience for women who are high in anxiety and low in avoidance, and that this effect can lead these women to report even lower levels of rejection sensitivity than if rejection-salience was not present at all.

If continued exploration into this idea results in support for the proposed theory, there are several effects that this knowledge might have. First, there is little existing literature assessing the role of positive or accepting relationship thoughts on sensitivity to rejection among highly anxious individuals. Whereas previous research has shown that experiences of acceptance or reminders of experienced acceptance can reduce relationship insecurities among individuals who are identified as insecure (e.g., Lemay & Dudley, 2011), my line of research suggests that simply thinking about positive and accepting relationship thoughts, even if not actually experienced, may do the same.

Even more important, mine is the first known research to suggest that these positive and accepting relationship thoughts are more effective in reducing rejection sensitivity when they follow salient thoughts of rejection compared with the impact that they have on their own. Further investigation into why this might be the case would be important in understanding the processes involved in the rejection-related cognitions and decision-making of highly anxious individuals. Perhaps rejection-salience triggers anxious individuals to become hypersensitive to

rejection cues (Mikulincer & Shaver, 2003, 2007) and therefore all cues in the environment, including acceptance cues, are more closely attended to. Alternatively, perhaps the hypersensitivity to rejection cues brought on by the rejection-salience acts to highlight the contrast between what is expected (rejection) and what is actually found (acceptance), thus making the acceptance cues more impactful. These and other avenues should be explored in future research.

## Chapter 6: General Discussion and Conclusions

The goal of the current line of research was to understand further the relationship between women's attachment anxiety and their condom use intentions and beliefs. To do this, I assessed the moderating role of rejection-salience. Previous research has shown that women who are high in attachment anxiety exhibit risky sexual tendencies, including low levels of reported condom use, more negative attitudes toward condoms, and low resistance to pressures during condom negotiation (Feeney et al., 1999, 2000). The current studies extend this research by exploring how the presence of salient rejection-related cues might exacerbate these risky tendencies as well as how one might provide acceptance cues to counteract the impact of rejection-salience on the decision to use condoms.

In the current studies, rejection-salience was expected to lead highly anxious women to perceive that insisting on protected sex or foregoing unprotected sex might increase the likelihood of being rejected by a sexual partner. Indeed, highly anxious individuals are hypervigilant to signs of rejection (e.g., Mikulincer & Shaver, 2003, 2007), become very distressed by signs of rejection (e.g., Davis et al., 2003; Feeney & Noller, 1992), and thus are expected to take action to avoid such rejection. In the case of a sexual encounter, a highly anxious woman may act to reduce her chances of rejection by having unprotected sex with her male partner.

I manipulated rejection-salience in three studies to assess its interaction with attachment anxiety (and attachment avoidance) on risky sexual tendencies related to condom use. In Study 1, I presented women with a hypothetical scenario in which sexual intercourse was desired by both partners but no condom was available. Within that scenario, I manipulated rejection-salience within the sexual encounter itself. Specifically, I either presented women with a scenario that

made rejection concerns if unprotected sex were refused salient or that did not make such concerns salient. I then asked them to rate their intentions to have unprotected sex if they were in this particular scenario. As expected, I found that among women who were high in attachment anxiety and low in attachment avoidance, those in the rejection-salient condition reported stronger intentions to have unprotected sex than those in the control condition. Furthermore, highly anxious women also reported more open-ended thoughts that promoted having unprotected sex, were less likely to agree that condoms protect against health risks, and endorsed more justifications for having unprotected sex (although this last effect was only marginal).

I also found similar results among women who were low in anxiety and high in avoidance. That is, among these women, those in the rejection-salient condition reported significantly stronger intentions to have unprotected sex and trended toward endorsing more justifications for having unprotected sex compared with those in the control condition. These effects were unexpected but they may reflect findings from other research showing that individuals who are high in avoidance (and potentially low in anxiety) tend to use their avoidance of intimacy and their lack of care for others' approval as a defense mechanism to combat their insecurities and fears of rejection (e.g., Carvallo & Gabriel, 2006; Edelstein & Gillath, 2008; Fraley et al., 1998; Mikulincer et al., 2000). Importantly, however, the results among this group were not replicated in any of my follow-up studies.

In Study 2, I manipulated rejection-salience in general rather than specific to any particular sexual encounter. Specifically, I exposed women to rejection-salient phrases or to non-rejection phrases as part of a word sorting task. Next, participants rated how long they believed it was appropriate to wait before switching from having sex with a condom to having sex without a condom within the time course of a romantic relationship. As predicted, and consistent with the

results of Study 1, among women who were high in attachment anxiety, those in the rejection-salient condition reported fewer weeks before the act of switching from having protected to unprotected sex should occur, compared to those who were not exposed to rejection-salience. Among women who were low in attachment anxiety, there was no difference in the number of weeks reported by rejection condition. Therefore, Study 2 once again demonstrated that exposing highly anxious women to salient rejection cues can lead them to report riskier sexual tendencies. Importantly, Study 2 suggested that these rejection cues need not be specific to a sexual encounter or even to a romantic relationship and can reflect concepts of general rejection instead.

Study 3 was designed to replicate the results of Study 2, employing the same general rejection-salience manipulation and using a similar measurement of risky sexual tendencies. In Study 3, participants were either exposed or not exposed to rejection-salience and then were asked to indicate how many weeks into a romantic relationship they would engage in a series of different behaviours. Among those behaviours listed was having penetrative intercourse without protection. Surprisingly, the results of Study 3 were opposite from what was predicted and from what was found in Study 2. Among women who were high in anxiety and low in avoidance, those in the rejection-salient condition reported that having penetrative intercourse without protection belonged later in a relationship timeline than did those who were not exposed to rejection-salience.

Potential explanations for these puzzling findings were explored in a follow-up study (Study 4). Because participants in Study 3 were asked to indicate how many weeks into a romantic relationship they would engage in a series of different behaviours, they were exposed to several positive relationship behaviours that I reasoned could serve to reassure their heightened sensitivity to rejection (e.g., holding hands, kiss on cheek). This possibility was investigated in

Study 4 using a 2 (rejection-salience vs. non-rejection-salience) by 2 (positive relationship thoughts vs. positive neutral thoughts) design. A measure of rejection sensitivity was used to assess the hypothesis that following rejection-salient cues with positive relationship thoughts would lead highly anxious women to report lower levels of rejection sensitivity compared to highly anxious women who were not exposed to rejection-salient cues before being exposed to positive relationship thoughts. Using regression analysis, the results did not support my predictions for Study 4. However, the sample for this follow-up study was relatively small. After exploring the pattern of mean differences in rejection sensitivity scores, there was some preliminary evidence to support my predictions. That is, among women who were high in anxiety and low in avoidance and who were exposed to positive relationship thoughts, those who were first exposed to rejection-salience had lower rejection sensitivity scores than those who were not first exposed to rejection-salience. The same was true for women who were high in both anxiety and avoidance. Importantly, whereas the results of Study 4 did not fully support my predictions, the pattern of means derived from the data do suggest the benefit of conducting further research into the role of positive relationship thoughts as a potential buffer to offset the relationship between rejection-salience and risky sexual tendencies among highly anxious women.

It is important to address the fact that, across all four studies, there were indeed some differences in the patterns of results found. First, in Study 1, rejection-salience led to more risky sexual tendencies for women who were high in anxiety and low in avoidance (i.e., three-way interaction), but in Study 2, this finding was among women who were high in anxiety regardless of their level of avoidance (i.e., two-way interaction). Although the levels of the interactions found were different across both studies, the findings were conceptually consistent with one

another and were in line with the theoretical underpinnings of my hypotheses. I predicted that rejection-salience would lead to more risky sexual tendencies among women who were high in attachment anxiety because they fear rejection and want to avoid rejection. The fact that this finding in Study 1 was true for women who were both high in anxiety and low in avoidance does not conflict with my predictions or from the findings in Study 2. Importantly, women who are high in anxiety and low in avoidance continue to hold all of the same fears of rejection and desires to avoid rejection of an individual who is high in anxiety but they also desire and seek intimacy and closeness with romantic partners, a tendency that may make them even more vulnerable to the potential partner loss that comes from refusing unprotected sex. Second, in studies 3 and 4, rejection-salience led women who were high in anxiety and low in avoidance to report less risky sexual tendencies rather than more risky tendencies. Importantly, the way in which condom use intentions were measured in Study 3 did differ from the way in which they were measured in Studies 1 and 2. In Study 3, intentions to use condoms were asked among intentions to engaged in several other relationship behaviours, many of which were positive. Therefore, the fact that the interaction between rejection-salience and attachment measures acted in opposite ways between studies 1 and 2 versus studies 3 and 4 may simply be caused by additional contextual factors (i.e., positive relationship thoughts) that were present in Studies 3 and 4 but not in Studies 1 and 2, rather than a reflection of spurious or inconsistent findings. Lastly, it is worth noting that although the results across Studies 1-4 were not replicated perfectly, the finding that rejection-salience influenced the condom use intentions and beliefs for women who were high in anxiety is consistent across all studies. The statistical improbability of this happening simply by chance provides strong support that highly anxious women's sexual health tendencies are indeed affected by rejection-salience.

The current program of research provides an important contribution to the literature on attachment anxiety and condom use. As previously noted, this research is the first known attempt to manipulate rejection-salience (both romantic and general) in order to assess the interacting influence of rejection and attachment anxiety on condom use intentions and beliefs. By employing an experimental design, my studies were able to address the causal role of rejection-salience and how this variable interacts with attachment to predict condom use intentions (see Spencer, Zanna, & Fong, 2005) thus extending the understanding of how attachment anxiety predicts sexual risk-taking (Feeney et al., 1999; Feeney et al., 2000). Furthermore, the results of Study 3 suggest that women who are high in anxiety may not always endorse more risky sexual tendencies than women who are low in anxiety – in fact, perhaps they can be led to report less risky sexual tendencies. Study 4 explored the possible role that exposure to positive relationship thoughts may play in reducing these risky tendencies. Together, Studies 3 and 4 are first steps in a new understanding of how attachment anxiety can predict positive rather than negative sexual health decisions.

### **Limitations**

Notable design limitations of Studies 1-3 are that they addressed participants' intentions to engage in unprotected sex and their beliefs about doing so but did not address whether the participants later behaved consistently with those intentions. Although condom use intentions have been shown to highly correlate with condom use behaviours (Albarracín, Johnson, Fishbein, & Muellerleile, 2001; Sheeran, Abraham, & Orbell, 1999), it is not the case that one's intentions will always predict one's behaviours in the realm of sexual decision-making. For this reason, the interaction between attachment anxiety and rejection-salience on actual condom use behaviour should be assessed in future research through daily diary studies. To assess the

influence of rejection on safer sex behaviour, participants could regularly (i.e., once per day) report on their fears of and experiences with rejection (both within a romantic relationship and more generally) and their actual condom use behaviour during instances of sexual intercourse. This methodology might provide a clearer picture of how attachment anxiety and potential partner rejection interact to influence how individuals actually behave during sexual encounters.

A second limitation of the research design of Studies 1-3 is that they rely on self-report data from participants. Due to the sensitive nature of condom use and the social implications associated with engaging in unprotected sexual intercourse, it is possible that participants felt pressured to reply to the questionnaires in such a way that was deemed socially acceptable rather than replying with their true intentions and thoughts related to condom use. However, my research aims to understand differences in condom use intentions and beliefs as a function of rejection-salience and there is no reason to believe that participants who were exposed to rejection-salience would be more inclined provide socially-desirable responses compared to those in the control condition. Therefore, whereas social desirability may have acted to artificially deflate the reporting of intentions to have unprotected sex, the interacting influences of rejection and attachment anxiety are unlikely to be affected by social desirability.

A third limitation of my studies is that all participants were female. Within the area of condom use, I reasoned that the fear of rejection if unprotected sex is refused is a much more common occurrence for women than it is for men. Firstly, men enjoy having unprotected sex more than do women (Randolph et al., 2007). Second, previous research conducted by my colleagues has shown that the idea of a woman pressuring a man into having unprotected sex is viewed as unrealistic and contrary to gender role expectations. Furthermore, the relationship between high levels of attachment anxiety and low levels of reported condom use are

consistently found among women but the evidence for this association is not as strong for men (Feeney et al., 2000). That said, the findings from the current research could have implications for men who have sex with men (MSM). Among MSM populations, the gender roles discussed above would not be relevant and thus I would have no reason to suspect that highly anxious MSM would react any differently from highly anxious heterosexual women with regard to their condom use intentions or beliefs after being exposed to rejection-salience. Furthermore, it is possible that in domains other than condom use, highly anxious heterosexual men who are presented with rejection-salience may give in to the desires of their female partners to their own potential detriment in much the same way as the female participants did in my studies. For example, if a highly anxious man feels pressure to drive his girlfriend home after he has been drinking, he may be more likely to take that risk if rejection threats are salient. Whether attachment anxiety and rejection-salience interact to influence other risk-taking behaviours, for both women and men, is one potential avenue to explore in future research.

Finally, it is important to note that the participants included in my studies were all Queen's University undergraduate students. Level of education is a relevant and important factor to consider when understanding condom use decision-making. Lower socioeconomic status (SES, including lower levels of education) is associated a higher likelihood of teen motherhood (Brown & Eisenberg, 1995; Singh & Darroch, 2001) and expectations that one will go to college are positively associated with consistent condom use (Abraham, Sheeran, & Henderson, 2011). Therefore, the participants in my studies may have reported higher intentions to use condoms and more positive beliefs about condoms than their peers who are not in university would have if they were included as participants. Furthermore, at Queen's University, students receive extensive exposure to sexual health education. For instance, sexual health education and safer

sex promotion efforts are widespread on campus in the form of posters, workshops, and events. If women who are not in university do not have as much exposure to these sexual health campaigns, they may not have as thorough of an understanding of the importance of using condoms and the risks associated with having unprotected sex. Exposure to sex education and accurate safer sex information has indeed been shown to predict higher levels of condom use during intercourse (e.g., Tremblay & Ling, 2005). Whereas these are important factors to consider about my samples of university students, it is likely that higher education and greater exposure to sexual health promotion would act to diminish the influence of anxiety and rejection-salience on reducing condom use intentions and beliefs compared to a non-university population. Therefore, it is possible that the results of my dissertation research may potentially be more pronounced in a non-university sample.

### **Future Directions and Practical Applications**

The understanding that rejection-salience does seem to play a role in the condom use intentions of highly anxious women provides important insight into sexual health decision-making among this population. Whereas this knowledge on its own is indeed interesting, applying this knowledge to promote healthier decisions among highly anxious women is the ultimate goal in this area of research.

The results from my dissertation research can inform possible avenues for practical applications to increase condom use among young women. Providing women with an understanding of how rejection might influence their decision-making may prove effective in increasing condom use among those who are high in attachment anxiety. Whereas it is of course unrealistic to assume that sexual health educators and promoters will have access to attachment information of their audiences, the current program of research provides support for the idea that

the fear of partner rejection should be addressed as a potential influencing factor in sexual decision-making for some people. Educators and health promoters may benefit from providing training that allows all women to recognize that particular comments from partners are rejecting in nature and that these rejecting comments are inappropriate, keeping in mind that this training would likely have the greatest impact among highly anxious audience members. Equipping women with the tools needed to refuse unprotected sex in light of potential partner rejection may ultimately have a positive impact on their decision-making in sexual encounters, particularly among women who are high in attachment anxiety.

Whereas recognizing the signs of rejection is a first step in reducing sexual risk-taking among highly anxious women, further exploration into how highly anxious women can buffer their fears of rejection when engaged in condom negotiation is an important avenue for future research and for condom use promotion. Studies 3 and 4 offer some insight into how this buffering might occur. Although the findings from Study 3 were the opposite from the expected results, they were also encouraging because they showed that highly anxious women who are exposed to rejection-salience do not always report lower condom use intentions and can in fact exhibit safer sexual tendencies than those not exposed to rejection! Study 4 explored the role of positive relationship thoughts as a potential moderator of the way in which rejection-salience influences condom use beliefs of highly anxious women. Keeping in mind that the small sample limited this study's ability to draw conclusions about the role of positive relationship thoughts, there was some preliminary evidence to suggest that exposure to positive relationship thoughts after exposure to rejection-salience may override the negative influence of rejection-salience on condom use decision-making.

In addition to expanding the size of my sample for Study 4, other study designs can help to determine whether positive relationship thoughts can help to override the impact of rejection-salience. For instance, Study 3 can be altered such that after being exposed to the rejection-salience manipulation, participants view and rate the time associated with each of the relationship behaviours sequentially. The order in which these behaviours are presented to participants can be manipulated. If positive relationship thoughts do indeed override the impact of rejection and lead to less risky sexual tendencies, this will only be the case when the “penetrative intercourse without protection” label is presented after the participant has already read several positive relationship behaviours but not when the “penetrative intercourse without protection” label is viewed and reported on first.

If future research does find additional evidence for the moderating role of positive relationship thoughts in the relationship between rejection-salience and risky sexual tendencies among highly anxious women, this would suggest that focusing on positive relationship thoughts during social encounters that are potentially threatening for rejection may help women who are high in attachment anxiety to reduce their rejection fears and thus reduce potentially negative consequences of those fears. Therefore, when condom use negotiation takes place, a highly anxious woman may benefit from training that teaches her to focus on the positive and accepting cues in the environment rather than the potentially rejecting ones, thus leading her to be less likely to have unprotected sex as a way to avoid rejection.

Whereas the presence of positive relationship thoughts may be one factor that could reduce the impact of rejection-salience on condom use decision-making for highly anxious women, it is by no means the only possible avenue to pursue. Another factor to consider is one’s optimism about finding a new partner. Previous research has shown that making highly anxious

women feel optimistic about finding a new romantic partner will lead them to be more likely to report being able to let go of their ex partners compared to highly anxious women who are made to feel pessimistic about finding a new romantic partner (Spielmann, MacDonald, & Wilson 2009). It is possible that a similar outcome could occur in the domain of condom use. During a sexual encounter in which no condom is available, a male partner who sends signals of potential rejection if unprotected sex is refused may be perceived in two ways, depending on a woman's beliefs about finding alternative partners. If the woman is pessimistic about finding a new partner, she might give in to engaging in unprotected sex because rejection from her current partner would be costly (i.e., there are few other partner options). Alternatively, if the woman is optimistic about finding other partners, she may not give in to unprotected sex because she knows that she has other partner options if she is rejected by her current sexual partner (i.e., 'there are plenty of fish in the sea'). Indeed, within the widely used Investment Model framework of intimate relationships, an individual's perceived access to acceptable alternative partners is one factor that can reduce commitment to a current partner (Rusbult, Martz, & Agnew, 1998). I am currently conducting research to assess the idea that optimism may help highly anxious women overcome their rejection anxieties during sexual encounters.

Other research that I am conducting suggests that future studies may benefit from considering how matching the level of rejection-salience (i.e., specific to the sexual encounter vs. rejection in general) to the type of condom use decision-making (i.e., specific to one sexual encounter vs. more broad ideals) may influence the way in which rejection and attachment anxiety interact to influence condom use. In Study 1, rejection-salience that was specific to a hypothetical sexual encounter was manipulated and participants reported their intentions to engage in unprotected sex in that specific encounter. In Studies 2 and 3, rejection-salience in

general was manipulated and participants reported their more broad beliefs about the appropriate timing of condom use within a romantic relationship. Would the same effects be found if there was a mismatch between the specificity of the rejection and the condom use scenario? That is, I could have manipulated rejection-salience specific to a sexual encounter and then measured more broad beliefs about condom use intentions, or I could have manipulated rejection-salience in general and measured intentions to have unprotected sex in a specific scenario. Early evidence from my research suggests that matching the level of rejection to the level of condom use intentions may be a critical factor to consider when assessing how rejection influences risky sexual tendencies among highly anxious women. This notion falls in line with Construal Level Theory (see Trope & Liberman, 2010), which proposes that the same event, situation, or object may be understood in multiple ways depending on the construal level that is dominant in the mind of the individual. A construal level can be low-level (i.e., specific and concrete) or high-level (i.e., abstract and broad). In the case of rejection and condom use, the type of rejection-salience that is manipulated may have a greater influence on condom use intentions if they both exhibit similar levels of construal. Other research shows that this idea of matching is an important factor to consider when understanding one's attitudes. For example, within the persuasion literature, a message has been shown to be more persuasive if it matches the level or type of information on which one's attitude is based (e.g., Edwards, 1990; Paik, MacDougall, Fabrigar, Peach, & Jellous, 2009; Snyder & DeBono, 1985). Therefore, the persuasive power of rejection may have a greater influence on condom intentions or beliefs if the level of rejection (i.e., specific to a situation or general) matches the level of condom use measurement (i.e., within a specific sexual encounter or more broadly). Understanding the importance of matching the specificity of rejection to the specificity of condom use should be explored in future research.

Beyond the scope of condom use specifically, the interacting influence of attachment anxiety and rejection-salience may also apply to many other domains in which individuals feel pressured to engage in particular behaviours by people whose acceptance they value. For example, a highly anxious woman who is being offered drugs by her friends may be more inclined to give in to those pressures if her fears of rejection are made salient. However, it may also be possible that if she is trained to think of times when she has experienced acceptance by these friends or possibly even acceptance in general, she may be able to buffer those rejection fears and resist the pressures to do drugs. Similarly, a highly anxious young boy whose peers are encouraging him to shoplift may be more likely to steal if he focuses on signs of rejection in his environment rather than on signs of acceptance. Extending my dissertation's findings beyond condom use to other contexts in which social pressures are present may provide greater insight into how attachment anxiety and rejection-salience more broadly influence unhealthy or risky behaviours within social situations.

Because there is relatively little research assessing potential moderating factors in the negative association between attachment anxiety and condom use, the opportunities for future research in this area and for informing applied sexual health promotion are widespread. My dissertation provides a first step in this area of study by assessing the role of rejection-salience. Overall, my findings point to the importance of considering both individual and situational factors in understanding sexual health decision-making. The choice to have protected versus unprotected sex involves a complex interplay between personal, relational, contextual, and social factors. By uncovering an interacting influence of attachment anxiety and rejection-salience on condom use, my research supports the idea that relationship dynamics and emotional factors are important components of sexual health and so should be addressed alongside more conventional

sexual health topics (e.g., STIs, pregnancy, anatomy) when planning tools for safer sex promotion and education.

## References

- Abraham, C., Sheeran, P., & Henderson, M. (2011). Extending social cognition models of health behavior. *Health Education Research* 26, 624-637.  
doi: 10.1093/her/cyr018
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E. & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Oxford, England: Lawrence Erlbaum.
- Albarracín, D., Johnson, B. T., Fishbein, M. & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, 127, 142-161. doi:10.1037/0033-2909.127.1.142
- Baldwin, M. W. & Fehr, B. (1995). On the instability of attachment style ratings. *Personal Relationships* 2, 247-261. doi: 10.1111/j.1475-6811.1995.tb00090.x
- Baldwin, M. W., & Kay, A. C. (2003). Adult attachment and the inhibition of rejection. *Journal of Social and Clinical Psychology*, 22, 275-293.  
doi:10.1521/jscp.22.3.275.22890
- Baldwin, M. W., Keelan, J. P. R., Fehr, B., Enns, V., Koh-Rangarajoo, E. (1996). Social-cognitive conceptualization of attachment working models: Availability and accessibility effects. *Journal of Personality and Social Psychology* 71, 94-109.  
doi: 10.1037/0022-3514.71.1.94

- Birnbaum, G. E., Svitelman, N., Bar-Shalom, A., & Porat, O. (2008). The thin line between reality and imagination: Attachment orientations and the effects of relationship threats on sexual fantasies. *Personality and Social Psychology Bulletin*, *34*, 1185-1199. doi:10.1177/0146167208319692
- Bowlby, J. (1958). The nature of a child's tie to his mother. *International Journal of Psycho-Analysis*, *39*, 350-373.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measures of adult romantic attachment: An integrative overview. In J. A. Simpson & W. S. Rhodes (Eds.), *Attachment theory and close relationships* (pp. 44-76). New York: Guilford.
- Brennan, K. A., & Morris, K. A. (1997). Attachment styles, self-esteem, and patterns of seeking feedback from romantic partners. *Personality and Social Psychology Bulletin* *23*, 23-31. doi: 10.1177/0146167297231003
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Society for Personality and Social Psychology*, *21*, 267-283. doi:10.1177/0146167295213008
- Brown, S. S., & Eisenberg, L. (1995). *The best intentions: Unintended pregnancy and the well-being of children and families*. Washington, DC: National Academy Press.
- Bylsma, W. H., Cozzarelli, C., & Sumer, N. (1977). Relation between adult attachment styles and global self-esteem. *Basic and Applied Social Psychology* *19*,1-16. doi: 10.1207/s15324834basp1901\_1
- Campbell, L., Simpson, J. A., Boldry, J., & Kashy, D. A. (2005). Perceptions of conflict and support in romantic relationships: The role of attachment anxiety. *Journal of Personality and Social Psychology* *88*, 510-531. doi: 10.1037/0022-3514.88.3.510

- Carvallo, M., & Gabriel, S. (2006). No man is an island: The need to belong and dismissing avoidant attachment style. *Personality and Social Psychology Bulletin*, 32, 697-709. doi: 10.1177/0146167205285451.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58, 644–663. doi:10.1037/0022-3514.58.4.644
- Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, 74, 1380-1397. doi:10.1037/0022-3514.74.5.1380
- Creasey, G., Kershaw, K. & Boston, A. (1999). Conflict management with friends and romantic partners: The role of attachment and negative mood regulation expectancies. *Journal of Youth and Adolescence* 28, 523-543. doi: 10.1023/A:1021650525419
- Davis, D., Shaver, P. R., & Vernon, M. L. (2003). Physical, emotional and behavioral reactions to breaking up: The roles of gender, age and attachment style. *Personality and Social Psychology Bulletin*, 29, 871-884. doi: 10.1177/0146167203029007006
- Davis, D., Shaver, P. R., & Vernon, M. L. (2004). Attachment style and subjective motivations for sex. *Personality and Social Psychology Bulletin*, 8, 1076-1090. doi:10.1177/0146167204264794
- Dehne, K.L., & Riedner, G. (2005). Sexually transmitted infections among adolescents: The need for adequate health services. Retrieved April 13, 2012, from <http://whqlibdoc.who.int/publications/2005/9241562889.pdf>.

- Dewall, C. N., Lambert, N. M., Slotter, E. B., Pond, Jr., R. S., Deckman, T., Finkel, E. J., Luchies, L. B., & Fincham, F. D. (2011). So far away from one's partner, yet so close to romantic alternatives: Avoidant attachment, interests in alternatives, and infidelity. *Journal of Personality and Social Psychology*, *101*, 1302-1316.  
doi: 10.1037/a0025497
- Douglas K. A., Collins J. L., Warren C., et al. (1997). Results from the 1995 national college risk behavior survey. *Journal of American College Health*, *46*:55-66.  
doi: 10.1080/07448489709595589
- Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology* *70*, 1327-1343.  
doi: 10.1037/0022-3514.70.6.1327
- Downey, G., Freitas, A. L., Michaelis, B., & Khouri, H. (1998). The self-fulfilling prophecy in close relationships: Rejection sensitivity and rejection by romantic partners. *Journal of Personality and Social Psychology*, *75*, 545-560. doi:10.1037/0022-3514.75.2.545
- Edelstein, R. S., & Gillath, O. (2008). Avoiding interference: Adult attachment and emotional processing biases. *Personality and Social Psychology Bulletin*. *34*, 171-181.  
doi:10.1177/0146167207310024
- Edwards, K. (1990). The interplay of affect and cognition in attitude formation and change. *Journal of Personality and Social Psychology*, *59*, 202-216.  
doi: 10.1037/0022-3514.59.2.202
- Feeney, J. A. (1995). Adult attachment and emotional control. *Personal Relationships* *2*, 143-159. doi: 10.1111/j.1475-6811.1995.tb00082.x

- Feeney, J. A. (1999). Adult attachment, emotional control, and marital satisfaction. *Personal Relationships, 6*, 169-185. doi: 10.1111/j.1475-6811.1999.tb00185.x
- Feeney, J. A. (2004). Hurt feelings in couple relationships: Toward integrative models of the negative effects of hurtful events. *Journal of Social and Personal Relationships, 21*, 487-508. doi: 10.1177/0265407504044844
- Feeney, J. A. (2005). Hurt feelings in couple relationships: Exploring the role of attachment and perceptions of personal injury. *Personal Relationships, 12*, 253-271. doi: 10.1111/j.1350-4126.2005.00114.x
- Feeney, J. A., Kelly, L., Gallois, C., Peterson, C., & Terry, D. J. (1999). Attachment style, assertive communication, and safer-sex behavior. *Journal of Applied Social Psychology, 29*, 1964-1983. doi:10.1111/j.1559-1816.1999.tb00159.x
- Feeney, J. A., & Noller, P. (1991). Attachment style and verbal descriptions of romantic partners. *Journal of Social and Personal Relationships, 8*, 187-215. doi: 10.1177/0265407591082003
- Feeney, J. A., & Noller, P. (1992). Attachment style and romantic love: Relationship dissolution. *Australian Journal of Psychology, 44*, 69-74. doi:10.1080/00049539208260145
- Feeney, J. A., Peterson, C., Gallois, C., & Terry, D. J. (2000). Attachment style as a predictor of sexual attitudes and behaviour in late adolescence. *Psychology and Health, 14*, 1105-1122. doi:10.1080/08870440008407370
- Fraley, R. C., Davis, K. E., & Shaver, P. R. (1998). Dismissing-avoidance and the defensive organization of emotion, cognition, and behavior. In W. S. Rholes & J. A. Simpson (Eds.), *Attachment theory and close relationships* (pp. 249-279). New York: Guilford.

- Fraley, R. C., & Shaver, P. R. (1998). Airport separations: A naturalistic study of adult attachment dynamics in separating couples. *Journal of Personality and Social Psychology, 75*, 1198-1212. doi:10.1037/0022-3514.75.5.1198
- Fraley, R. C., Vicary, A. M., Brumbaugh, C. C., Roisman, G. I. (2011). Patterns of stability in adult attachment: An empirical test of two models of continuity and change. *Journal of Personality and Social Psychology, 101*, 974-992.  
doi: 10.1037/a0024150
- Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A tests of the typological model. In W. S. Rholes & J. A. Simpson (Eds.), *Attachment theory and close relationships* (pp. 77-114). New York: Guilford.
- Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*, 350-365. doi: 10.1037/0022-3514.78.2.350
- Gentzler, A. L., & Kerns, K. A. (2004). Associations between insecure attachment and sexual experiences. *Personal Relationships, 11*, 249-265.  
doi:10.1111/j.1475-6811.2004.00081.x
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524.  
doi: 10.1037/0022-3514.52.3.511
- Hazan, C., Zeifman, D., & Middleton, K. (1994, July). *Adult romantic attachment, affection, and sex*. Paper presented at the 7th International Conference on Personal Relationships, Groningen, The Netherlands.

- Holland, J., Ramazanoglu, C., Sharpe, S., & Thomson, R. (2000). Deconstructing virginity—Young people's accounts of first sex. *Sexual and Relationship Therapy, Special Issue: Young people, sexuality and relationships, 15*, 221-232. doi:10.1080/14681990050109827
- Impett, E. A. & Peplau, L. A. (2002). Why some women consent to unwanted sex with a dating partner: Insights from attachment theory. *Psychology of Women Quarterly, 26*, 360-370. doi:10.1111/1471-6402.t01-1-00075
- Jacobs, L., Berscheid, E., & Walster, E. (1971). Self-esteem and attraction. *Journal of Personality and Social Psychology 17*, 84-91. doi: 10.1037/h0030473
- Keelan, J. P. R., Dion, K. K., & Dion, K. L. (1998). Attachment style and relationship satisfaction: Test of a self-disclosure explanation. *Canadian Journal of Behavioural Science 30*, 24-35. doi: 10.1037/h0087055
- Kirkpatrick, L. E., & Davis, K. E. (1994). Attachment style, gender, and relationship stability: A longitudinal analysis. *Journal of Personality and Social Psychology, 66*, 502-512. doi: 10.1037/0022-3514.66.3.502
- Kobak, R. R., & Hazan, C. (1991). Attachment in marriage: Effects of security and accuracy of working models. *Journal of Personality and Social Psychology, 60*, 861-869. doi: 10.1037/0022-3514.60.6.861
- Lemay, E. P., & Dudley, K. L. (2011). Caution: Fragile! Regulating the interpersonal security of chronically insecure partners. *Journal of Personality and Social Psychology 100*, 681-702. doi: 10.1037/a0021655
- Leonardo, M., & Zimmer, J. (Writers). (November, 2008). The Tyra Banks show. In B. Medina (Producer). New York: Bankable Productions.

- Levy, M. B., & Davis, K. E. (1988). Lovestyles and attachment styles compared: Their relations to each other and to various relationship characteristics. *Journal of Social and Personal Relationships* 5, 439-471. doi: 10.1177/0265407588054004
- MacDonald, T. K., Fong, G. T., Zanna, M. P., & Martineau, A. M. (2000). Alcohol myopia and condom use: Can alcohol intoxication be associated with more prudent behavior? *Journal of Personality and Social Psychology*, 78, 605-619. doi:10.1037/0022-3514.78.4.605.
- Marigold, D. C., Holmes, J. G., & Ross, M. (2007). More than words: Reframing compliments from romantic partners fosters security in low self-esteem individuals. *Journal of Personality and Social Psychology* 92, 232-248. doi: 10.1037/0022-3514.92.2.232
- Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: Exploring the normative and intraindividual components of attachment theory. *Journal of Personality and Social Psychology*. 78, 509-523. doi:10.1037/0022-3514.78.3.509
- Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought suppression: Ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology*, 87, 940-956. doi:10.1037/0022-3514.87.6.940
- Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology*, 83, 881-895. doi:10.1037/0022-3514.83.4.881

- Mikulincer, M., & Nachshon, O. (1991). Attachment styles and patterns of self-disclosure. *Journal of Personality and Social Psychology*, *61*, 321-331.  
doi: 10.1037/0022-3514.61.2.321
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 53-152). New York: Academic Press.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford.
- Paik, J. S., MacDougall, B. L., Fabrigar, L. R., Peach, J. M., & Jellous, K. (2009). Altering category-level beliefs: The impact of level of representation at belief formation and belief disconfirmation. *Personality and Social Psychology Bulletin* *35*, 1112-1125. doi: 10.1177/0146167209336609
- Pistole, M. C. (1989). Attachment in adult romantic relationships: Style of conflict resolution and relationship satisfaction. *Journal of Social and Personal Relationships*, *6*, 505-510. doi: 10.1177/0265407589064008
- Public Health Agency of Canada (2002). STI - Epi Update: Condoms, Sexually transmitted infections, Safer Sex and You. Retrieved April 13, 2012 from <http://www.phac-aspc.gc.ca/publicat/epiu-aepi/std-mts/condom-eng.php>.
- Randolph, M. E., Pinkerton, S. D., Bogart, L. M., Cecil, H., & Abramson, P. R. (2007). Sexual pleasure and condom use. *Archives of Sexual Behavior* *36*, 844-848.  
doi: 10.1007/s10508-007-9213-0

- Rotermann M. (2005). Sex, condoms and STDs among young people. *Health Reports* (Statistics Canada, Catalogue 82-003), 16(3): 39-45.
- Rotermann, M. (2012). Sexual behaviour and condom use of 15- to 24-year olds in 2003 and 2009/2010. *Health Reports* (Statistics Canada, 82-003), 23(1): 41-46.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships* 5, 357-391. doi: 10.1111/j.1475-6811.1998.tb00177.x
- Santelli, J. S., Duberstein Lindberg, L., Abma, J., et al. (2000). Adolescent sexual behavior: Estimates and trends from four nationally representative surveys. *Family Planning Perspectives*, 32, 156-65.
- Schachner, D. A., & Shaver, P. R. (2004). Attachment dimensions and sexual motives. *Personal Relationships*, 11, 179-195. doi:10.1111/j.1475-6811.2004.00077.x
- Shaver, P. R., & Mikulincer, M. (2006). Attachment theory, individual psychodynamics, and relationship functioning. In A. Vangelisti, & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 251-271). New York: Cambridge University Press.
- Sheeran, P., Abraham, C., & Orbell, S. (1999). Psychosocial correlates of heterosexual condom use; A meta-analysis. *Psychological Bulletin*, 125, 90-132. doi:10.1037/0033-2909.125.1.90
- Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology*, 59, 971-980. doi: 10.1037/0022-3514.59.5.971

- Simpson, J. A., & Gangestad, S. W. (1991). Individual differences in sociosexuality: Evidence for convergent and discriminant validity. *Journal of Personality and Social Psychology* 60, 870-883. doi: 10.1037/0022-3514.60.6.870
- Simpson, J. A., Rholes, W. S., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology* 71, 899-914. doi: 10.1037/0022-3514.71.5.899
- Singh S., & Darroch J. (2000). Adolescent pregnancy and childbearing: Levels and trends in developing countries. *Family Planning Perspectives*, 32, 14–23.
- Snyder, M., & DeBono, K. G. (1985). Appeals to images and claims about quality: understanding the psychology of advertising. *Journal of Personality and Social Psychology*, 49, 586-597. doi: 10.1037/0022-3514.49.3.586
- Sommer, K. L., & Baumeister, R.F. (2002). Self-evaluation, persistence, and performance following implicit rejection: The role of trait self-esteem. *Personality and Social Psychology Bulletin*, 28, 926-938. doi: 10.1177/014616720202800706
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89, 845-851. doi:10.1037/0022-3514.89.6.845.
- Spielmann, S. S., MacDonald, G., & Wilson, A. E. (2009). On the rebound: Focusing on someone new helps anxiously attached individuals let go of ex partners. *Personality and Social Psychology Bulletin*, 35, 1382-1394. doi: 10.1177/0146167209341580

- Tracy, J. L., Shaver, P. R., Albino, A. W., & Cooper, M. L. (2003). Attachment styles and adolescent sexuality. In P. Florsheim (Ed.), *Adolescent romantic relations and sexual behaviors: Theory, research, and practical implications* (pp.137-159). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Tremblay, C. H., & Ling, D.C. (2005). AIDS education, condom demand, and the sexual activity of American youth. *Health Economics 14*, 851-867.  
doi: 10.1002/hec.989
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review 117*, 440-463. doi: 10.1037/a0018963
- Umphrey, L., & Sherblom, J. (2007). Relational commitment and threats to relationship maintenance goals: Influences on condom use. *Journal of American College Health 56*, 61-67. doi: 10.3200/JACH.56.1.61-68
- Walster, E. (1965). The effect of self-esteem on romantic liking. *Journal of Experimental Social Psychology 1*, 184-197. doi: 10.1016/0022-1031(65)90045-4
- Weiss, R. S. (1982). Attachment in adult life. In C. M. Parkes & J. Stevenson-Hinde (Eds.), *The place of attachment in human behavior* (pp. 171-184). New York: Basic Books.
- Weiss, R. S. (1986). Continuities and transformations in social relationships from childhood to adulthood. In W. W. Hartup & Z. Rubin (Eds.), *Relationships and development* (pp. 95-110). Hillsdale, NJ: Erlbaum.
- Weiss, R. S. (1991). The attachment bond in childhood and adulthood. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 66-76). London: Tavistock/Routledge.

Zayas, V., Shoda, Y., Mischel, W., Osterhout, L., & Takahashi, M. (2009). Neural responses to partner rejection cues. *Psychological Science*, *20*, 813-821.

doi:10.1111/j.1467-9280.2009.02373.x

## Appendix A

### Study 1 Vignettes

#### Rejection Vignette

Imagine that you are just ending off your fifth date with the guy whose photo you have chosen. You have just gone out for dinner and coffee. You had a great time with him tonight, just like all of the other dates. You two laughed and shared stories. You feel yourself becoming close to him and find yourself developing strong feelings for him. He makes you laugh, he's really smart, and he seems just like your type. You find him really attractive and he's a great kisser.

He walks you home from the coffee shop and walks you to the door. You both say that you had a great night and would love to go out again sometime soon. But you don't want the date to end. He kisses you goodnight and begins to turn to leave, but you decide to invite him inside.

Nobody else is home at your place. He takes off his coat and sits down on the couch while you put on some music. You sit down next to him and the mutual attraction between you two is unmistakable. He kisses you and the two of you start to make out on the couch. Things really begin to heat up as you two are caught up in the passion of the moment. He keeps telling you that you are beautiful and that you are making him so hot. His lips are so soft and his hands feel so good on your body.

He asks if you want to move to the bedroom so that you two can be more comfortable. You really want to, as your sexual attraction to him keeps growing and growing. You really like this guy and can see yourself with him, as his girlfriend.

You get off the couch and walk him upstairs to your bedroom. The two of you continue to make out on your bed and are both really enjoying being close to one another. You want to have sex with him but you don't have a condom and you know that there are none in the house so you ask your date if he has one. He responds, "No, I'm not the type of guy who just carries condoms around. Man, that was dumb of me. Is there a drug store nearby?" You tell him that the all of the drugstores nearby are closed and you let him know that you are on the birth control pill.

You continue kissing him as he is telling you how beautiful you are. You really like this guy and he seems like someone you can trust. You can tell he really wants to sleep with you.

Although you are not entirely comfortable with having unprotected sex, you are really sexually attracted to him right now. You also don't want to disappoint him and are worried that he might end the relationship with you if you don't sleep with him. You want him to feel close to you.

### **Non-Rejection Vignette**

Imagine that you are just ending off your fifth date with the guy whose photo you have chosen. You have just gone out for dinner and coffee. You had a great time with him tonight, just like all of the other dates. You two laughed and shared stories. You feel yourself becoming close to him and find yourself developing strong feelings for him. He makes you laugh, he's really smart, and he seems just like your type. You find him really attractive and he's a great kisser.

He walks you home from the coffee shop and walks you to the door. You both say that you had a great night and would love to go out again sometime soon. But you don't want the date to end. He kisses you goodnight and begins to turn to leave, but you decide to invite him inside.

Nobody else is home at your place. He takes off his coat and sits down on the couch while you put on some music. You sit down next to him and the mutual attraction between you two is unmistakable. He kisses you and the two of you start to make out on the couch. Things really begin to heat up as you two are caught up in the passion of the moment. He keeps telling you that you are beautiful and that you are making him so hot. His lips are so soft and his hands feel so good on your body.

He asks if you want to move to the bedroom so that you two can be more comfortable. You really want to, as your sexual attraction to him keeps growing and growing. You really like this guy and can see yourself with him, as his girlfriend.

You get off the couch and walk him upstairs to your bedroom. The two of you continue to make out on your bed and are both really enjoying being close to one another. You want to have sex with him but you don't have a condom and you know that there are none in the house so you ask your date if he has one. He responds, "No, I'm not the type of guy who just carries condoms around. Man, that was dumb of me. Is there a drug store nearby?" You tell him that the all of the drugstores nearby are closed and you let him know that you are on the birth control pill.

You continue kissing him as he is telling you how beautiful you are. You really like this guy and he seems like someone you can trust. You can tell he really wants to sleep with you.

Although you are not entirely comfortable with having unprotected sex, you are really sexually attracted to him right now. You know that he really wants to sleep with you, but he's not pressuring you - the decision is ultimately up to you.

**Appendix B**  
**Study 1 Questionnaires**

**Please answer the following question. Please try to be as open and honest as possible, and answer spontaneously: what would you do if you were in this situation?**

- 1.** If I were in this situation, I would engage in sexual intercourse.

1	2	3	4	5	6	7	8	9
<i>Very Unlikely</i>								<i>Very Likely</i>

**Please tell us why you circled the number that you did in Question 1. That is, what thoughts or factors went through your mind when you decided whether or not to have sexual intercourse if you were in the situation you just read. These factors could be thoughts you had, feelings that you experienced, or anything else that you considered. Please list as many factors as you can. You may list them in point form.**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.









Thank you for completing the questionnaire.

Please respond to the following questions about your personal experiences with relationships.

- 1) Have you ever had sexual intercourse with a member of the opposite sex? (Please circle one option)

Yes

No

- 2) If your answer to #1 was **yes**, how often do you use condoms when having sexual intercourse (Please circle one number):

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>Never</b>		<b>Seldom</b>		<b>Sometimes</b>		<b>Usually</b>		<b>Always</b>

- 3) What is your current relationship status? (Please check off one option):

\_\_\_ not dating

\_\_\_ dating more than one person

\_\_\_ dating primarily one person

\_\_\_ in a steady relationship with one person

\_\_\_ engaged

\_\_\_ married

## Appendix C General Rejection-Saliency Manipulation

### Rejection-Saliency Condition

#### Sentence Unscramble

Task: Form meaningful 3-word phrases from the clusters below by crossing out the “filler” word.

Try to complete this task as quickly as possible.

**Example:**     cake could ate she

**Solution:**     cake ~~could~~ ate she

asleep she work fell

the under party leave

group the leave a

door hide the close

dishes before washed the

felt she top rejected

it crawl they found

office call under the

from isolated on others

them went hates he

friend avoid the if

strangers are over they

her ignore has they

the slide truck tow

test build the took

his walked book dog

book high the color

she have him distrusts

away on she walked

alone her the left

she turn them showed

## Control (i.e., Non-Rejection) Condition

### Sentence Unscramble

Task: Form meaningful 3-word phrases from the clusters below by crossing out the “filler” word.

Try to complete this task as quickly as possible.

**Example:**     cake could ate she

**Solution:**    cake ~~could~~ ate she

asleep she the fell

disgust table with respond

above crash hurt in

she turn them showed

book high the color

nauseates food package her

away plant ran dog

test build the took

office call under the

his walked book dog

tongue great her burnt

student poor dorm was

door hide the close

the slide truck tow

watch cannot lost the

it crawl they found

movie peanut sad the

made delight upset her

him surprise cry made

dishes before washed the

**Appendix D**  
**Study 2 - List of Relationship Behaviours**

1. Below is a list of different relationship events.
2. Please indicate the number of weeks into a relationship you think each event belongs. For example, the time you first meet would be considered as 'week 1.'
3. Please note that the weeks you assign to the events do not need to follow the same order in which the events are listed below.

(Please ask the experimenter if you have any questions).

<b>RELATIONSHIP EVENT</b>	<b># WEEKS INTO THE RELATIONSHIP</b>
'Seeing Each Other'	
Holding Hands	
Hug	
Kiss on Cheek	
Kiss	
Kiss with Tongue	
Meet Friends	
'Going Out'	
Talk About Sex	
Get Tested for STIs	
Touch Genitals Outside Clothing	
Touch Genitals Inside Clothing	
Be Naked Together	
Buy Protection	
Oral Sex	
Penetrative Intercourse with Protection	
Penetrative Intercourse without Protection	

### Appendix E Study 3 Results for “Seeing Each Other” Label

I conducted a multiple regression analysis on the number of weeks into a relationship participants reported that the relationship label of “seeing each other” belonged in a relationship timeline. Attachment anxiety, attachment avoidance, and rejection-salience condition were the predictors. Following the recommendations made by Aiken and West (1991), the control condition was coded as 0 and rejection-salience condition was coded as 1. Next, both anxiety and avoidance scores were mean centered so as to reduce multicollinearity. I then computed all possible two- and three-way interaction terms using the mean centred anxiety and avoidance scores and the general rejection-salience variable.

The table below presents the unstandardized regression coefficients ( $b$ 's) associated with each predictor entered into the regression analysis.

I found a significant two-way interaction between attachment anxiety and attachment avoidance on the placement of the number of weeks reported for the “seeing each other” label,  $B = -.49$ ,  $t(75) = -2.38$ ,  $p = .020$ . I followed-up this interaction using simple slopes analysis (Aiken & West, 1991). At high levels of anxiety, attachment avoidance did not predict the number of weeks reported,  $B = -.46$ ,  $p = .22$ . At low levels of attachment anxiety, attachment avoidance was marginally positively related to the number of weeks reported,  $B = .50$ ,  $p = .055$ . Therefore, among women with low levels of attachment anxiety, higher levels of attachment avoidance were associated with reporting that “seeing each other” belonged later in a relationship timeline.

*Study 3: Unstandardized regression coefficients in predicting the number of weeks into a relationship “seeing each other” belongs, using attachment anxiety, avoidance, and rejection salience condition.*

	<i>Number of Weeks</i>
$R^2$	
<i>Predictor</i>	
Rejection Condition	-.53 <sup>†</sup>
Anxiety	.03
Avoidance	.02
Rejection Condition X Anxiety	.15
Rejection Condition X Avoidance	.06
Anxiety X Avoidance	-.49*
Rejection Condition X Anxiety X Avoidance	.43

\* $p \leq .05$ , \*\* $p < .01$ , <sup>†</sup> $p < .10$

## Appendix F Positive Thoughts Condition Manipulation

### Positive Relationship Thoughts Condition

#### Sentence Unscramble

Task: Form meaningful 3-word phrases from the clusters below by crossing out the “filler” word.

Try to complete this task as quickly as possible.

**Example:**     cake could ate she

**Solution:**     cake ~~could~~ ate she

on scratch my leg

when surprised he me

out his friends meet

on the crossed street

hands we soft hold

chair move more the

the breakfast ate say

an receives invitation where

she stood none up

out said me asked

no around turned he

present with gave a

with here it was

me made brought flowers

called he me none

have bath a it

walked home or together

a movie net saw

coffee she is made

me in about thinks

## Positive Non-Relationship Thoughts Condition

### Sentence Unscramble

Task: Form meaningful 3-word phrases from the clusters below by crossing out the “filler” word. Try to complete this task as quickly as possible.

**Example:** cake could ate she

**Solution:** cake ~~could~~ ate she

on scratch my leg

out sun the shines

with play in puppies

on the crossed street

win lottery the is

chair move more the

the breakfast ate say

chocolate the drink hot

she stood none up

was he up laughing

no around turned he

cat the purred in

with here it was

the outside flowers bloomed

was she smiling more

have bath a it

helped it them she

passed right the test

coffee she is made

achieves the he success

## Appendix G Adapted Rejection Sensitivity Questionnaire

Each of the items below describes things university 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?
- 2) How do you think the other person would be likely to respond?

### 1. You ask a friend to do you a big favor.

- a) How concerned or anxious would you be over whether or not your friend would do this favor?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

- b) I would expect that he/she would willingly do this favor for me.

1	2	3	4	5	6
Very Unlikely					Very Likely

### 2. You call your boyfriend/girlfriend after a bitter argument and tell him/her you want to

**see him/her.** (*NOTE: If you do not have a boyfriend/girlfriend, imagine how you would react in this scenario if you did.*)

- a) How concerned or anxious would you be over whether or not your boyfriend/girlfriend would want to see you?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

- b) I would expect that he/she would want to see me.

1	2	3	4	5	6
Very Unlikely					Very Likely

**3. You approach a close friend to talk after doing or saying something that seriously upset him/her.**

a) How concerned or anxious would you be over whether or not your friend would want to talk with you?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

b) I would expect that he/she would want to talk with me

1	2	3	4	5	6
Very Unlikely					Very Likely

**4. You ask your boyfriend/girlfriend if he/she really loves you. (NOTE: If you do not have a boyfriend/girlfriend, imagine how you would react in this scenario if you did.)**

a) How concerned or anxious would you be over whether or not your boyfriend/girlfriend would say yes?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

b) I would expect that he/she would answer yes sincerely.

1	2	3	4	5	6
Very Unlikely					Very Likely

**5. You go to a party and notice someone on the other side of the room and then you ask**

**them to dance. (NOTE: If you are already in a romantic relationship, imagine how you would react in this situation if you were single.)**

a) How concerned or anxious would you be over whether or not the person would want to dance with you?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

b) I would expect that he/she would want to dance with me.

1	2	3	4	5	6
Very Unlikely					Very Likely

**6. You ask someone you don't know well out on a date.** (*NOTE: If you are already in a romantic relationship, imagine how you would react in this situation if you were single.*)

a) How concerned or anxious would you be over whether or not the person would want to go out with you?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

b) I would expect that the person would want to go out with me.

1	2	3	4	5	6
Very Unlikely					Very Likely

**7. 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.** (*NOTE: If you do not have a boyfriend/girlfriend, imagine how you would react in this scenario if you did.*)

a) How concerned or anxious would you be over whether or not your boyfriend/girlfriend would decide to stay in?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

b) I would expect that the person would willingly choose to stay in.

1	2	3	4	5	6
Very Unlikely					Very Likely

**8. You ask someone in one of your classes to coffee.**

a) How concerned or anxious would you be over whether or not the person would want to go?

1	2	3	4	5	6
Very Unconcerned					Very Concerned

b) I would expect that the person would want to go with me.

1	2	3	4	5	6
Very Unlikely					Very Likely

**Appendix H**  
**Study 4 ANOVA Results Using Tertiary Splits**

*F statistics in predicting rejection sensitivity scores using attachment anxiety (high, moderate, low), attachment avoidance (high, moderate, low), rejection-salience, and positive thoughts conditions.*

<i>Predictor</i>	<i>Rejection Sensitivity</i>
Rejection Condition	.95
Positive Thoughts Condition	.03
Anxiety	23.63**
Avoidance	1.22
Rejection X Positive Thoughts	6.63*
Rejection X Anxiety	7.42**
Rejection X Avoidance	.06
Positive Thoughts X Anxiety	.11
Positive Thoughts X Avoidance	.26
Anxiety X Avoidance	7.39**
Rejection X Positive Thoughts X Anxiety	.06
Rejection X Positive Thoughts X Avoidance	3.60 <sup>†</sup>
Rejection X Anxiety X Avoidance	.01
Positive Thoughts X Anxiety X Avoidance	2.10
Rejection X Positive Thoughts X Anxiety X Avoidance	4.43*

\* $p \leq .05$ , \*\* $p < .01$ , <sup>†</sup> $p < .10$

*Pairwise comparisons by rejection-salience condition for rejection sensitivity scores as a function of anxiety, avoidance, and positive thoughts conditions.*

	<i>Rejection Sensitivity Scores</i>		
	<i>Rejection-Salience Condition Mean</i>	<i>Non-Rejection-Salience Condition Mean</i>	<i>Mean Difference</i>
<b>Positive Neutral Thoughts</b>			
Low Anxiety, Low Avoidance	11.66	10.75	.91
Low Anxiety, Moderate Avoidance	N/A	6.50	N/A
Low Anxiety, High Avoidance	12.33	6.08	6.25*
Moderate Anxiety, Low Avoidance	9.56	12.85	-3.29
Moderate Anxiety, Moderate Avoidance	12.50	13.54	-1.04
Moderate Anxiety, High Avoidance	12.81	12.13	.69
High Anxiety, Low Avoidance	12.63	9.50	3.13
High Anxiety, Moderate Avoidance	12.00	13.53	-1.53
High Anxiety, High Avoidance	16.29	20.08	-3.80
<b>Positive Relationship Thoughts</b>			
Low Anxiety, Low Avoidance	9.25	7.92	1.33
Low Anxiety, Moderate Avoidance	9.46	9.38	.08
Low Anxiety, High Avoidance	6.45	N/A	N/A
Moderate Anxiety, Low Avoidance	16.38	11.38	5.00
Moderate Anxiety, Moderate Avoidance	11.48	13.63	-2.15
Moderate Anxiety, High Avoidance	11.63	13.98	-2.35
High Anxiety, Low Avoidance	9.00	14.31	-5.31
High Anxiety, Moderate Avoidance	12.16	17.00	-4.84*
High Anxiety, High Avoidance	14.13	16.63	-2.5

\* $p \leq .05$ , \*\* $p < .01$ , † $p < .10$

## Appendix I

## Queen's Research Ethics Board approval – Study 1



November 04, 2011

Miss Leigh Turner  
 Ph.D. Student  
 Department of Psychology  
 Queen's University  
 Kingston, ON K7L 3N6

**GREB Romeo #: 6003730**  
**Title: "GPSYC-379-07 - Attachment Styles and Rejection: The Influence on Condom Use"**

Dear Miss Turner:

The General Research Ethics Board (GREB) has reviewed and approved your request for renewal of ethics clearance for the above-named study. This renewal is valid for one year from Renewal August 29, 2011. Prior to the next renewal date you will be sent a reminder memo and the link to ROMEO to renew for another year.

You are reminded of your obligation to advise the GREB of any adverse event(s) that occur during this one year period. An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours. Report to GREB through either ROMEO Event Report or Adverse Event Report Form at <http://www.queensu.ca/ors/researchethic/GeneralREB/forms.html>.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes in study procedures or implementations of new aspects into the study procedures. Your request for protocol changes will be forwarded to the appropriate GREB reviewers and/or the GREB Chair. Please report changes to GREB through either ROMEO Event Reports or the Ethics Change Form at <http://www.queensu.ca/ors/researchethic/GeneralREB/forms.html>.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

A handwritten signature in black ink that reads "Joan Stevenson".

Joan Stevenson, Ph.D.  
 Professor and Chair  
 General Research Ethics Board

c.c.: Dr. Tara MacDonald, Faculty Supervisor  
 Dr. Leandre Fabrigar, Chair, Unit REB  
 Marie Tooley, Dept. Admin.

## Appendix J

## Queen's Research Ethics Board approval – Studies 2 and 3



September 09, 2011

Miss Leigh Turner  
 Ph.D. Candidate  
 Department of Psychology  
 Queen's University  
 Kingston, ON K7L 3N6

**GREB ROMEO #: 6005452**

**Title: "GPSYC-496-10 What Step is Sex? A Study on Attachment Anxiety and Rejection"**

Dear Miss Turner,

The General Research Ethics Board (GREB) has reviewed and approved your request for renewal of ethics clearance for the above-named study. This renewal is valid for one year from September 28, 2011. Prior to the next renewal date you will be sent a reminder memo and the link to ROMEO to renew for another year.

You are reminded of your obligation to advise the GREB of any adverse event(s) that occur during this one year period. An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours. Report to GREB through either ROMEO Event Report or Adverse Event Report Form at <http://www.queensu.ca/ors/researchethics/GeneralREB/forms.html>.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes in study procedures or implementations of new aspects into the study procedures. Your request for protocol changes will be forwarded to the appropriate GREB reviewers and / or the GREB Chair. Please report changes to GREB through either ROMEO Event Reports or the Ethics Change Form at <http://www.queensu.ca/ors/researchethics/GeneralREB/forms.html>.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

A handwritten signature in black ink that reads "Joan Stevenson".

Joan Stevenson, Ph.D.  
 Professor and Chair  
 General Research Ethics Board

c.c.: Dr. Tara MacDonald, Supervisor  
 Dr. Leandre Fabrigar, Chair, Unit REB  
 Marie Tooley, Dept. Admin.

## Appendix K

## Queen's Research Ethics Board approval – Study 4



October 19, 2011

Miss Leigh Turner  
 Graduate Student  
 Department of Psychology  
 Queen's University  
 62 Arch St  
 Kingston, ON K7L 3N6

**GREB Ref #: GPSYC-546-11; Romeo # 6006336**  
**Title: "GPSYC-546-11 Bouncing Back From Rejection: Attachment Anxiety and the Effects of Positive Relationship Thoughts"**

Dear Miss Turner:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled "GPSYC-546-11 Bouncing Back From Rejection: Attachment Anxiety and the Effects of Positive Relationship Thoughts" for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen's ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB, with a copy to your unit REB, of any adverse event(s) that occur during this one year period (access this form at [https://eservices.queensu.ca/romeo\\_researcher/](https://eservices.queensu.ca/romeo_researcher/) and click Events - GREB Adverse Event Report). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes to the level of risk, applicant characteristics, and implementation of new procedures. To make an amendment, access the application at [https://eservices.queensu.ca/romeo\\_researcher/](https://eservices.queensu.ca/romeo_researcher/) and click Events - GREB Amendment to Approved Study Form. These changes will automatically be sent to the Ethics Coordinator, Gail Irving, at the Office of Research Services or [irvingg@queensu.ca](mailto:irvingg@queensu.ca) for further review and clearance by the GREB or GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

A handwritten signature in black ink that reads "Joan Stevenson".

Joan Stevenson, Ph.D.  
 Professor and Chair  
 General Research Ethics Board

cc: Dr. Tara MacDonald, Faculty Supervisor  
 Dr. Leandre Fabrigar, Chair, Unit REB  
 Marie Tooley, Dept. Admin.