

**ATTACHMENT STYLE, WORKING MODELS OF SEXUALITY, AND
THEIR RELATION TO SAFER SEX BEHAVIOUR IN YOUNG ADULTS**

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for the Degree of Doctor of Philosophy
in the Department of Psychology
University of Saskatchewan
Saskatoon**

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Abstract

The purpose of this study was to explicate personality variables that are implicated in sexual health self-care, specifically the practice of safer sex. I asked a university-based sample of young adults ($M = 19.8$ years; $N = 242$) to rate the degree to which they identify with (a) particular “styles” of attachment as measured by Bartholomew’s (Griffin & Bartholomew, 1994a) Relationship Questionnaire (RQ) and Relationship Scales Questionnaire (RSQ); (b) dispositional motives, attitudes, and feelings toward sex (“working models of sexuality”) as measured by Snell and Fisher’s (1993) Multidimensional Sexuality Questionnaire (MSQ) and Hill and Preston’s (1996) Affective and Motivational Orientation Related to Erotic Arousal Questionnaire (AMORE); and (c) safer sex practices as measured by a revised version of Uddin’s (1996) Safer Sex Behaviour (SSB) scale. I expected that patterns of attachment would be related to working models of sexuality and safer sex behaviour, and that working models of sexuality would partially mediate or explain the relation between attachment style and safer sex behaviour. A principal components analysis revealed that respondents’ sexual thoughts, feelings, and motives reflected four main components--negative sexual affect, sexual confidence, sexual power/control, and sexual intimacy/pleasure. A series of regression analyses was used to test the proposed mediation model. Results indicated that (1) preoccupied, fearful, and secure (but not dismissing) styles of attachment were differentially related to negative sexual affect, feelings of sexual confidence, and desire for sexual intimacy/pleasure in ways that fit well with previous findings and theory; (2) feelings of sexual confidence as well as enjoyment of sexual power/control were associated with riskier sexual practices; (3) fear of emotional attachment was related both

indirectly (through sexual confidence) to safer sexual behaviour and directly (when sexual confidence was controlled) to riskier sexual behaviour; and (4) security of attachment was associated both directly with safer sexual behaviour and indirectly (through sexual confidence) with riskier sexual behaviour. In conclusion, (a) individuals who are turned on by sexual dominance/control are more likely to engage in risky sex; (b) fearfully attached individuals are more likely to engage in risky sex while securely attached individuals are more likely to engage in safer sex, tendencies that may be diminished, respectively, by sexual confidence. The counselling implications of the present findings, and future directions for research, are discussed.

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Solvitur ambulando (It is solved by walking)

- St. Augustine

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Literature Review

Introduction

It is commonly known that the overwhelming majority of human immunodeficiency virus (HIV) infections and other sexually transmitted diseases (STDs) are contracted through unprotected (vaginal, anal, or oral) intercourse with an HIV/STD-infected person. It is also commonly accepted that the risk of sexual transmission of HIV/STDs can be substantially reduced by engaging in safer sex practices such as abstinence, mutual monogamy, reduction in the number of sex partners, asking partners for sexual histories, and, most importantly, the consistent use of condoms. Evidence suggests that despite increased and widespread factual knowledge about HIV/STD transmission, safer sexual behaviours generally have not been adopted by the general public (for overviews see Amaro, 1995; Fisher & Fisher, 1992; Kelly & Murphy, 1992).

A segment of the population where sexual risk-taking appears to be substantial is among young adults on university campuses (Lewis, Malow, & Ireland, 1997). As a consequence of their tendency not to practice safer sex, heterosexually active college students have a prevalence rate of HIV infection that is 10 times higher than that of the general heterosexual population (Gayle et al., 1990), while upwards to 14.3% report a history of being infected with a STD (Rickert & Rickert, 1995; Seal & Palmer-Seal, 1996; Simkins, 1995; Wendt & Solomon, 1995).

In the face of the health threat of STDs and the growing number of cases of sexually transmitted HIV infections among the heterosexual population, particularly

among adolescent and young adult females^{*}, there have been calls in the literature for the development and testing of new theoretical models to better predict sexual risk behaviours and guide HIV/STD prevention efforts (Amaro, 1995; Mahoney, 1995).

Some writers have stressed that there is a need for research that takes into greater consideration individual difference or personality influences on risky sexual practices. For example, Pinkerton and Abramson (1995) stated that “although a number of ...[risk] factors have been identified, explication of the internal dispositions and cognitive processes that actuate unsafe behaviours has been limited” (p. 713). Similarly, Kelly and Kalichman (1995) indicated that “a phenomenon, understudied in the prevention field, involves the fact that people seek sex for different reasons and under different relationship circumstances that may be associated, at least in part, with their personality and motivational dispositions” (p. 912). Further, Weinrich et al. (1995) stated that “it is remarkable how little attention has been given to understanding, at the intrapsychic level, why people prefer some sexual activities over others...[there are] a mere handful of papers on personality and safer sex” (pp. 136-137).

Based on a review of the existing literature on personality and HIV sexual risk-taking, Pinkerton and Abramson (1995) concluded that “the literature is somewhat inconsistent and suffers from a number of shortcomings, including the use of outdated and non-specific measurement instruments, and an essentially atheoretical conceptualization of HIV/AIDS-specific risk behaviours” (p. 715). In their opinion, safer

^{*} Teen-aged females have the highest rates of STDs of any age group in Canada. The rate of chlamydia in the 15-to-19 age group is nine times the average among all women (Immen & Freeze, 1998). New HIV infections that occurred in Canada have increased from an estimated 2,500 to 3,000 per year for the period of 1989-94 to an estimated 3,000 to 5,000 in 1996. The majority of this increase in HIV infections appears to be occurring among injection drug users and young gay men. However, available data also suggest increasing HIV infections among non-injection drug-using heterosexuals, particularly women and among aboriginal peoples (“Statistics Show,” *Globe and Mail*, 1997). Consistent with national trends, the rate of HIV infection in Saskatchewan was up 43% in 1997 (Goranson, 1997), and AIDS Saskatoon reported that an increasing number of young, heterosexual women infected with HIV had contacted the agency (Cooper, 1997).

sex interventions can be better targeted and their impact maximized by (a) creating instruments that measure specifically sexual dispositions, (b) explicitly acknowledging individual differences in sexual risk-taking tendencies, and (c) generating “novel schema to better describe the complex mechanisms that underlie sexual behaviour and their relations to personality and cognition” (p. 721).

Feeney and Raphael (1992) suggested that attachment theory, a general personality theory that speaks to individual’s needs for physical and emotional closeness, is a useful perspective to try and understand risk behaviours of a sexual nature. Recent qualitative research suggests that concern about maintaining relationship stability and interpersonal trust, which are basic themes in attachment theory, inhibit the use of condoms and talk about safer sex among college students involved in intimate relationships (Hammer, Fisher, Fitzgerald, & Fisher, 1996; Seal & Palmer-Seal, 1996). Hence, it would appear that an attachment analysis of sexual risk behaviours is relevant to sexual risk reduction programs with young adults.

Rothbard and Shaver (1994) noted that “at the heart of the attachment-theoretical perspective on personality development are internal working models, which can be conceptualized as playing a mediating role between environmental events and subsequent behaviour” (p. 48). That is, adults with different attachment patterns behave differently because they tend to think and feel differently about themselves and their relationships (Collins & Read, 1994). Further, individuals with different attachment styles are assumed to think and feel differently about sexuality (i.e., have different working models of sexuality) which results in different sexual behaviours, including safer sex practices (Feeney & Raphael, 1992; Shaver & Hazan, 1988).

The purpose of my study was to test an attachment-based theoretical model for predicting the occurrence of safer sexual behaviour in university students. Using recently established psychometric instruments, my study examined the attachment correlates of safer sex by clarifying the relations between attachment style, sexual working models, and safer sexual behaviour. Guiding my research was the expectation that attachment orientations affect sexual working models, which in turn influence the adoption of protective sexual behaviours. In other words, working models of sexuality were thought to mediate or “account” for (at least partially) the relationship between attachment style and safer sex precautions. Such a finding would make a substantial contribution to our understanding of how particular attitudes to relationships might be translated into patterns of risky sexual behaviour. Knowledge of the kinds of emotional attachments and psychosexual tendencies implicated in safer sex behaviour would allow healthcare professionals in HIV/STD or university health clinics to better identify, assess, and help counsel young adults most at risk for infection.

The remainder of this chapter reviews psychological literature regarding (a) HIV/STD risk in university students, (b) attachment theory, (c) the concept of adult attachment, (d) measurement of adult attachment, (e) attachment and sexuality, and (f) attachment and sexual working models. A review of research on sexual risk among heterosexual college students summarizes some of the factors that contribute to their relatively high rate of HIV/STDs. A discussion of the seminal thinking of Bowlby and Ainsworth (e.g., Ainsworth & Bowlby, 1991) and the relevance of their ideas for work with adults is presented to provide a conceptual understanding of individual differences in attachment dynamics in close relationships. A discussion of adult attachment shows

that the construct is distinguished from childhood attachment by a focus on reciprocal care-seeking, care-giving, and sexuality. A discussion of the measurement of adult attachment highlights the different formats that are used, and outlines Bartholomew's (Bartholomew, 1990; Bartholomew & Horowitz, 1991) model of adult attachment and the measures pertinent to it. Based on a review of theory and research findings from the adult literature on attachment and sexuality, I extrapolate about possible connections between attachment style and the practice of safer sex. A section on adult attachment and sexual working models postulates about the role that sexual schemas play in determining precautionary sexual behaviour. Finally this review concludes with a brief summary of the conclusions of the above sections as well as the research questions and hypotheses that were examined in my dissertation.

HIV/STD Risk Among College Students

A segment of the population where sexual risk-taking appears to be substantial is among young adults on university campuses. In this section, I review literature on risk factors, prevalence rates, and prevention intervention programs related to HIV/STD infection among sexually active university students. I also identify two significant issues that have been raised in the literature but which have received limited attention in the HIV/STD prevention field: attachment issues and one's emotional responses to sexuality.

In a recent review article, Lewis, Malow, and Ireland (1997) examined 17 empirical studies dealing with the psychosocial correlates of HIV risk among heterosexual college students. According to Lewis et al. (1997), the bulk of research findings suggests that college students as a group tend to be sexual risk-takers in that they use condoms inconsistently or not at all, have unprotected sex involving multiple partners, and use alcohol and other drugs in the context of sexual activity. In Simkins' 1995 study, for example, 132 single sexually active students attending a midwestern university in the United States responded to a survey questionnaire on their sexual behaviour and attitudes. In this sample, 48.1% (n = 63) never used condoms, 31% (n = 40) had been involved with multiple partners and of these 40.7% (n = 16) indicated that they would not inform their partner(s) about other sex partners, and 28.5% (n = 37) always consumed alcohol in association with sex or did so more than 50% of the time. From their review of the research, Lewis et al. (1997) concluded that (a) condoms are rarely used (e.g., studies indicated that while the majority of college samples were

sexually active, only 8-25% always used condoms during every sexual encounter); (b) knowledge of HIV transmission is adequate to high, but this knowledge does not readily translate into adopting condom use or other preventive behaviours; (c) a neutral-to-negative attitude typically exists toward using condoms and other safer sex practices; (d) perceived vulnerability to HIV/AIDS is low and is inconsistently related to HIV risk behaviour; and (e) communication with sex partners about the use of condoms and safer sex is infrequent. In short, young heterosexual adults attending university tend not to practice safer sex, thereby placing themselves at risk for contracting sexually transmitted diseases (STDs).

Indeed, epidemiological studies have reported high rates of STDs among university students. For example, among 16,863 students attending 19 universities throughout the United States, Gayle et al. (1990) found that 0.2% (1 in every 500 students) were HIV positive. This compares to a 0.02% (1 in 5,000) prevalence rate of HIV infection in the general heterosexual population in the United States and a 0.14% (7 in 5,000) rate for United States military personnel in approximately the same age group (Stine, 1995, cited in Simkins, 1995). In other words, university students have a rate that is 10 times higher than the general heterosexual population. At the University of Saskatchewan, with a current undergraduate enrolment of 15,675 (Registrar, personal communication, March 1998), this translates into approximately 31 students who may be HIV-infected. (The actual number may be lower, however, because prevalence rates vary from university to university. For example, of the 19 universities that participated in Gayle et al.'s study, HIV positive blood samples were found at only nine of them.)

The rate for other STDs on campus is likely higher. For example, Gibson et al. (1990) found that approximately 40% of a random sample of 1st and 4th year students in a large public university in the southeastern United States had herpes simplex antibodies. Studies conducted by Keim, Woodard, and Anderson (1992) at Eastern Michigan University and by Frisch, Greene, Harrison, and Lawlor (1990) at Southern Illinois University found prevalence rates for asymptomatic chlamydia in women that were 6% and 14.2%, respectively. More recent studies have reported that between 5.4 and 14.3% of college students in the United States have a history of STD infection (Rickert & Rickert, 1995; Seal & Palmer-Seal, 1996; Simkins, 1995; Wendt & Solomon, 1995). In an article published in the University of Saskatchewan student newspaper, Soucy (1998) reported that approximately two-thirds of all reported cases of STDs in Saskatchewan occur in young people between the ages of 15 and 24. According to Soucy, the two most common STDs seen at the Student Health Centre at the University of Saskatchewan are chlamydia and genital warts. The potential adverse effects of chlamydia include chronic pelvic pain and sterility, while genital warts can lead to cancer of the cervix (Keim et al., 1992; Soucy, 1998).

Given students' relatively high rates of health-threatening STDs, including HIV, and their infrequent use of protective condoms, it is important to identify the reasons why some students practice safer sex while others do not.

Most studies of risky sex among university students have drawn upon a blend of cognitive-attitudinal, social learning, and stages of change theories to try to understand the factors that contribute to unsafe sex (see Lewis et al., 1997). These theories have been useful in identifying psychosocial variables associated with sexual risk behaviours (e.g.,

personal and partner attitudes toward condom use, perceived risk to HIV/STDs, and self-efficacy), and they have been modestly effective in guiding HIV infection-prevention programs targeted at university students. Fisher and Fisher's (1992) review of findings from eight controlled HIV risk-reduction intervention programs (conducted from 1988 to 1990 on campuses mainly in the United States) indicated that programs that provided students with information alone generally resulted in a significant but minor increase in HIV knowledge. Broader HIV prevention interventions that focused on providing information: on increasing motivation (e.g., addressing personal beliefs about the consequences of, and support from significant others for, performing safer sex); and on teaching relevant behavioural skills (e.g., safer sex negotiation skills) appeared to be more effective in increasing students' HIV knowledge and in reducing their HIV risk behaviour.

In the face of the growing number of cases of sexually transmitted HIV infection among the heterosexual population, particularly among women, there have been calls in the literature for the development and testing of new theoretical models to better predict sexual risk behaviours and guide HIV/STD prevention efforts (e.g., Amaro, 1995; Mahoney, 1995).

One of the many potential reasons for the infrequency of condom use and safer sex talk among sexually active university students may be attachment issues. Attachment issues refer to students' concerns about maintaining physical and emotional closeness, trust, acceptance, and commitment with their romantic/sexual partners. Current research suggests that the majority of sexually active university students are involved in romantic relationships. For example, Wendt and Solomon (1995) reported that 73.2% ($n = 145$) of the women and 55.1% ($n = 49$) of the men in their sample were currently in a

monogamous sexual relationship. Misovich, Fisher, and Fisher (1996, cited in Hammer, Fisher, Fitzgerald, & Fisher, 1996), noted that "as many as 85% of sexually active college students consider themselves to be in an intimate relationship" (p. 379). Using a qualitative approach, Hammer et al. (1996) found that while issues of communication, concerns about gender roles, and beliefs about the safety of monogamous relationships significantly influenced student couples' practice of safer sex, "the questions of relationship maintenance and interpersonal trust seemed to be paramount" (p. 391). Their findings suggest that many young intimate-relationship partners find it difficult to communicate about and initiate safer sex practices because they believe that doing so might make their partners feel "suspicious or mistrusted" (p. 389). In other words, bringing up the subject of safer sex may be viewed as implying that one is sexually promiscuous or lacks trust in one's partner, perceptions that may threaten trust and intimacy in the relationship. Thus, worries about offending, distancing, or losing a partner by requesting safer sex appear to be sufficiently threatening to university students to override their concerns about becoming infected and could lead to unsafe sex.

An implication is that students who are less secure in their emotional attachments, that is, those with stronger personal needs for mutual trust, affection, and caring within relationships, may be more easily threatened by relationship dissolution, and especially likely to forego initiating conversations regarding condom use, HIV testing, and history of previous sex partners, and insisting on safer sex practices.

Other authors using qualitative assessment techniques have similarly observed that relational issues impact on young adults' safer sex behaviour. In Seal and Palmer-Seal's (1996) study, a frequently cited reason for college dating couples not using

condoms or discussing safer sex was no perceived risk for HIV/STD exposure, and was related to interpersonal factors such as "trust, monogamy, and 'knowing one's partner'" (p. 28). Issues such as trust and commitment are basic themes in adult attachment theory, hence an attachment conceptualization of sexual risk behaviours is relevant to HIV/STD prevention efforts with young adults.

In addition to attachment issues such as desire for emotional intimacy, trust in one's partner, and concern about what a partner would think and fear of rejection if one suggested using condoms, emotions associated with sex are another powerful barrier to condom use and safer sex talk among heterosexual college students in intimate relationships. For example, 60% of the participants in Hammer et al.'s (1996) study stated that they "did not always think clearly about the issue of safer sex" (p. 387) when they were sexually aroused. Likewise, many participants in Seal and Palmer-Seal's (1996) study acknowledged that sexual excitement interferes with condom use ("never came to mind...It was too hot!...Was not thinking of safe sex, just having it"; p. 22). Such comments highlight the fact that sex often occurs spontaneously, in the heat of the moment--when individuals are highly emotionally and physically charged--a situation that can oftentimes override rational deliberation about safer sex (Gerrard, Gibbons, & Bushman, 1996; Hammer et al., 1996; Seal & Palmer-Seal, 1996).

Drawing on research on the psychology of sexual behaviour, a number of authors (e.g., Gerrard et al., 1996; Kelly & Kalichman, 1995; Pinkerton & Abramson, 1995) have indicated that decisions regarding sexual risk-taking are highly vulnerable to one's emotional predisposition to respond to sexuality. Examples of sexually-relevant emotional predispositions cited in the literature are the tendency to have strong needs for

sexual novelty, to have difficulty controlling sexual impulses, and to have negative feelings about sex. Gerrard et al. (1996) indicated that the tendency to have negative feelings about sex (called "erotophobia") is associated with the inconsistent use of effective birth control methods. They proposed that negative emotional responses to sexuality might reasonably be expected to interfere with the consistency of safer sex practices as well. If this is the case, ascertaining empirically the kinds of dispositional sexual feelings (and thoughts) associated with risky sexual practices of young adults would contribute to our understanding of the psychological dynamics that mediate their decisions about sex.

Summary

Sexual risk-taking appears to be substantial, and rates of HIV/STD infection appear to be relatively high, among young adults on university campuses. Using contemporary health-protective behaviour models, research has identified a number of psychosocial variables associated with students' risky sexual behaviour. However, rising HIV infections among young heterosexual adults have led to the call for new conceptualizations that might better predict risky sex and guide efforts at preventing HIV/STDs. Findings suggest that attachment concerns and affective-cognitive processes associated with sexuality are important factors for trying to understand the variability in safer sex practices among university students.

This study contributes to the literature on correlates of safer sex in young adults by examining the links among safer sexual behaviour; dispositional feelings, thoughts, and motives associated with sexuality (what I later will call "sexual working models"); and attachment style, which is conceivably the most important factor underlying precautionary sexual behaviour.

Attachment Theory

The purpose of this section is to (a) outline the basics of attachment theory as described by Bowlby and Ainsworth and their students (Ainsworth & Bowlby, 1991; Bowlby, 1988); (b) describe attachment patterns that have been identified in work with infants and young children; and (c) highlight individual differences in attachment styles as they apply to adults.

Attachment theory as proposed by Bowlby and Ainsworth suggests that human beings are innately predisposed to form emotional attachments with supportive and protective others. Included in the theory is the idea that persons are naturally motivated to seek physical contact with and comfort from significant others, especially when feeling threatened or distressed: upon achieving a sense of security from contact, individuals use significant others as secure bases from which to engage the wider physical and social environment. In their conceptualization, the construct of attachment security is defined as the degree to which one experiences significant others as being responsive to one's needs for comfort and support. Further, they suggested that through attachment experiences with parents, infants and young children accumulate knowledge and develop values, beliefs, and expectations (known as "internal working models") about their own self-worth, the availability and trustworthiness of significant others, and attachment relationships. Working models are said to include affective and defensive (anxiety reducing) as well as descriptive cognitive components (Rothbard & Shaver, 1994). According to attachment theory, these early-developed mental models of self and others

generally persist over time and guide thoughts, feelings, and behaviour in subsequent close relationships. Thus attachment theory contains within itself a theory of motivation and a theory of personality: Attachment theory proposes that an inborn need for felt security, coupled with experience-based, affect-laden working models, forms the basis for relatively long-lasting individual differences in intimate interpersonal functioning, in strategies for coping with negative feelings, and in world view.

Notions on the origins of individual differences in attachment patterns grew out of Ainsworth's empirical study of Bowlby's ideas. To assess attachment, Ainsworth devised a stress-inducing procedure called the strange situation (Ainsworth, Blehar, Waters, & Wall, 1978). Basically, this research paradigm elicits an infant's attachment behaviours through repeated separations from and reunions with his or her mother. On the basis of this procedure, Ainsworth identified three basic patterns of infant-caregiver attachment: secure, anxious/ambivalent, and avoidant. The behaviour of infants classified as secure fit Bowlby's conception of nature's prototype: they were distressed when their mothers left them, sought comfort upon reunion with their mothers, and explored freely while their mothers were present. Home observations of mother-infant interactions indicated that mothers of securely attached infants were sensitive and responsive to their infants' signals for attention. In contrast, mothers of anxious/ambivalent infants were judged to be inconsistently responsive to their infants' signals, being sometimes unavailable or unresponsive, and at other times intrusive or overly affectionate. In the strange situation, the typical anxious/ambivalent infant was clingy before separation, extremely upset when the mother left, sought contact upon the mother's return but was angry and unable to be soothed, and was preoccupied with the mother's presence such that he or she had

difficulty separating to explore. Finally, avoidantly attached infants readily explored the environment, exhibited little overt distress upon separation, and showed avoidance behaviour in terms of turning, looking, or moving away upon reunion. The mothers of avoidant infants were characterized as being physically and emotionally unavailable in terms of consistently rebuffing or deflecting their infants' signals for physical contact and comfort. Ainsworth et al.'s (1978) research showed, then, that variations in infant attachment are linked to types of caregiver responsiveness.

Theoretically, the behaviours associated with the three major attachment styles identified by Ainsworth et al. (1978) are mediated by different internal working models and reflect different strategies for reducing anxiety and promoting feelings of security within close relationships (Collins & Read, 1994; Hazan & Shaver, 1994). Comprehensive reviews of research on continuity of individual differences in attachment styles (Rothbard & Shaver, 1994) and on close adult relationships (Hazan & Shaver, 1994; Shaver & Hazan, 1993) have suggested that there are parallels between the attachment styles and dynamics identified by Ainsworth et al. (1978) in infancy and those identified in adulthood (e.g., Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Main, Kaplan, & Cassidy, 1985). This is not to say that childhood attachment patterns give rise to adult attachment patterns, a conclusion that ultimately depends on longitudinal studies, but rather that attachment relationships continue to be formed in adulthood (Alexander, 1992). Theoretically, the similarities include "seeking and maintaining close physical proximity to one's partner; relying on the partner's continued availability; turning to the partner for comfort when threatened physically or emotionally; and being distressed by separations, threats to the relationship, and losses" (Rothbard &

Shaver, 1994, p. 52).

In reviews of the adult attachment literature, Hazan and Shaver (1994) and Rothbard and Shaver (1994) discussed empirical evidence based on self-reported views of self, others, and relationships; self-reported memories of parents; behavioural observations in the context of anxiety-provoking situations; and reports from peers that suggests that members of different adult attachment categories generally possess different working models and use different strategies to achieve a sense of felt security. For example, secure attachment is believed to result from a history of consistent caring and attention from others. As expected, secure adults generally view others as trustworthy and dependable, the self as lovable and worthy, and relationships as a source of love and support. Having confidence and trust that others will respond to their concerns, secure adults tend to seek comfort and reassurance when distressed. In contrast, anxious/ambivalent attachment is thought to result from a history of inconsistent caring and responsiveness. As expected, anxious/ambivalent adults are drawn to others even though they experience them as generally unpredictable and difficult to understand. They tend to have low self-esteem and look to relationships to make them feel secure. Lacking confidence that others will be available and responsive when needed, anxious/ambivalent adults tend to be chronically absorbed with keeping others close by and engaged, often through intense displays of distress and anger. Finally, avoidant attachment is believed to result from a history of consistent unresponsiveness on the part of caregivers. In line with theoretical expectations, avoidant adults tend to view others as untrustworthy and undependable, have either a negative self-image or (defensively) feel superior to others, and view relationships as threatening, unimportant, or both. Anticipating others to be

physically rejecting or emotionally distant, avoidant adults tend to avoid interpersonal intimacy, especially in stressful situations, to be ultra self-reliant, and they manage anxiety by keeping themselves engaged in nonsocial activities.

Summary

Attachment theory is primarily an individual difference theory that encompasses ideas regarding an assumed inherent predisposition to develop emotional attachments to significant others, hypothesized internal cognitive-affective mechanisms for controlling this predisposition, and discrete patterns of behaviour (such as comfort-seeking) that are shaped by one's cognitive-experiential processes (Rutter, 1995). Differences among attachment "styles," originally observed with regard to mother-infant interactions, have been identified in adulthood. Research has found that adults with different attachment styles--secure, avoidant, anxious-ambivalent--differ markedly in their past relationship experiences, in their attitudes toward close relationships, and in the way they operate in their current relationships, especially in times of distress.

Conceptualization of Adult Attachment

The purpose of this section is to provide and discuss a working definition of adult attachment. The issues of care-seeking, care-giving, and sexuality will be addressed specifically.

Bowlby (1979) contended that attachment is a life-long phenomenon. Drawing on Bowlby's work, Ainsworth (1989) and Weiss (1991) conceptualized adult close relationships in terms of attachment theory. They argued that adults' close relationships show the same attachment features as those that define infant-caregiver attachments. That is, an individual who is emotionally attached to a spouse or lover (a) wants to be with his or her significant other, especially under stress, (b) derives a sense of comfort and security from being with his or her significant other, and (c) experiences anxiety upon threatened or actual separation from his or her significant other. Berman and Sperling's (1994) working definition of "adult attachment" is the following:

Adult attachment is the stable tendency of an individual to make substantial efforts to seek and maintain proximity to and contact with one or a few specific individuals who provide the subjective potential for physical and/or psychological safety and security. This stable tendency is regulated by internal working models of attachment, which are cognitive-affective-motivational schemata built from the individual's experience in his or her interpersonal world (p. 8).

Note that the key theme in the above analysis and definition of adult attachment is a desire to be close to another person who is perceived as having the potential to engender

a sense of comfort and security, a dynamic that Bowlby was convinced is an integral part of human nature.

Berman and Sperling (1994) suggested further that the concept of adult attachment should combine attachment behaviours with care-giving behaviours. They reasoned that in adult close relationships, partners are motivated typically to both seek care from (attachment) and provide protection or comfort to (care-giving) one another.

Hazan and Shaver (1994) pointed out that romantic adult relationships also usually involve a component of sexuality. Hence, they proposed that prototypical adult attachment relationships satisfy partners' needs for comfort and security, caregiving, and sexual gratification. Attachment, caregiving, and sex are likely to vary in importance and intensity over the course of a relationship; for example, sexual attraction and passion tend to be especially important in the initial phases. From an adult attachment perspective, sexual attraction is the primary motivating force that brings two adults together, and sex is what keeps them together long enough for an emotional bond to form. Once an attachment bond is established, the frequency and intensity of the need for sex diminishes somewhat and the degree to which a partner provides comfort and emotional security becomes increasingly important (Hazan & Shaver, 1994; Hazan & Zeifman, 1994). While the intensity of the need for sexual contact eventually diminishes, sex continues to play a meaningful role in that it "strengthens and maintains the emotional and psychological bond--the attachment--between two paired adults" (Hazan & Zeifman, 1994, p. 172).

Of the three behavioural systems--attachment, caregiving, and sexuality--said to compose adult romantic love relationships, the attachment system is seen as primary. As Shaver and Hazan (1988) explained:

The attachment system is the first of the socially relevant behavioural systems to appear in the course of development, and it lays the foundation for the others. The attachment system [including mental models of self and others] is shaped by interactions with primary caretakers, so by the time caregiving and sexuality become relevant, the person has already constructed major parts of his or her social style (p. 486).

Theoretically, then, a person's attachment style is expected to influence his or her caregiving and sexual feelings and behaviours. Feeney and Raphael (1992) speculated that

differences in attachment style have wide-ranging implications in terms of the meaning which partners place on their sexual relationships, the affect they experience, and the behaviours associated with these relationships, including the capacity to negotiate sexual practices (and, as a corollary, 'safe sex') (p. 400).

Summary

Infant and adult attachments are conceptualized as being similar in terms of the security dynamics of these relationships. Despite this basic similarity, adult attachment differs from infant attachment in important ways. Unlike infant-caregiver attachments, prototypical adult romantic attachments are reciprocal, with each partner providing and receiving care on a physical, emotional, and sexual level. The assumption is that a person's care-giving and sexual behaviours develop directly out of his or her attachment history, and thus are influenced by his or her attachment style.

Measurement of Adult Attachment

The purpose of this section is to provide a conceptual and psychometric background against which to place my study. First, I give an overview of the types of design of contemporary measures of adult attachment. An alternative approach to measuring adult attachment is then presented. This is followed by a discussion of Bartholomew's (1990; Bartholomew & Horowitz, 1991) model of attachment and the psychometric data supporting her model. For purposes of interpretational clarity, Bartholomew's four-category model is then compared to Hazan & Shaver's (1987) traditional three-category model. Last is a brief discussion of the stability of the adult attachment construct. A detailed discussion of the evolution of the measurement of the adult attachment construct is found in Feeney and Noller (1996), from which some of the following discussion is taken.

Forced-Choice Format

One popular option for assessing adult attachment is Hazan and Shaver's (1987) categorical measure, which is based on the assumption that the three infant attachment styles identified by Ainsworth et al. (1978)--secure, avoidant, and anxious/ambivalent--correspond to three distinct styles of romantic love in adulthood. As Hazan and Shaver (1994) explained:

We started with Ainsworth et al's (1978) three infant categories, not because we believed that adult differences were direct results of relationship experiences in infancy and not because we thought that adult patterns would necessarily be the

same as those identified in studies of infants, but because we had to start somewhere and because it seemed possible to translate Ainsworth's categories into adult language (p. 73).

Hazan and Shaver's measure consists of a single item that presents simple descriptions of the three adult attachment styles, created by translating descriptions of infant attachment into terms appropriate to adult lovers. The secure description emphasizes trust and comfort with closeness; the avoidant description emphasizes reluctance to trust and a preference for maintaining emotional distance; and the anxious-ambivalent description emphasizes lack of confidence in the availability of the partner and a strong, unsatisfied desire for emotional closeness. In 1993, Shaver and Hazan presented a slightly revised form of the original measure. Subjects are asked to choose the description most applicable to their feelings about close love relationships.

Twelve studies have investigated the stability of Hazan and Shaver's (1987) three-group, forced-choice measure of adult attachment (Feeney & Noller, 1996). With time lags varying from 1 week to 4 years, overall stability rates have ranged from 67.4% to 80.2%, with a mean rate of 73.5%. That is, on average, close to three-quarters of subjects chose the same attachment description on both occasions. Note that in all studies, rates of stability differed depending on attachment type: the average rate was 83.6% for secure subjects, 64.2% for avoidant subjects, and 39.9% for anxious-ambivalent subjects. Feeney and Noller (1996) indicated that such an outcome might be expected given the high, medium, and low base rates for secure, avoidant, and anxious-ambivalent attachment, respectively.

The concurrent validity of this three-style, self-categorization measure is supported by the finding that members of the three attachment groups differ predictably in terms of memories of relations with parents, beliefs about romantic love, patterns of feelings in love relationships, and current vulnerability to loneliness (Hazan & Shaver, 1987). (For example, secure subjects reported that their romantic relationships were happy, friendly, and trusting, and that their early family relationships were relatively warm and caring.) The work of Hazan and Shaver is important because it translates the major childhood attachment styles into terms directly relevant to adult relationships.

However, despite the success of Hazan and Shaver's questionnaire in relating attachment style to relationship experiences, it has limitations as a measure of attachment, as recognised by Hazan and Shaver (1987). In particular, the single-item measure is likely to possess limited reliability, especially given the forced-choice format and number of issues that are included in each description.

Likert-Type Format

A more psychometrically sound approach to assessing adult attachment has been developed using Hazan and Shaver's three descriptions. The descriptions are presented intact, but rather than having to choose between them, respondents rate how much they are like each description using a Likert-type format. This approach turns Hazan and Shaver's categorical measure into scales suitable for correlational research. The advantage of using continuous ratings is that it allows an investigator to more completely describe individual differences as they are reflected in attachment profiles across the three styles. Feeney and Noller (1996) suggested that different attachment profiles may have important implications for relationship quality and individual adjustment. Correlational research

may also be particularly useful for samples that are not sufficiently large for group analysis or in which one or more attachment groups is underrepresented (Bartholomew & Horowitz, 1991).

The stability of Likert ratings of the three attachment prototypes has been assessed over intervals of 2 weeks to 8 months. Across four studies, the average test-retest correlations indicated moderate stability: .50 (secure), .64 (avoidant), and .60 (anxious-ambivalent) (Feeney & Noller, 1996).

Using this revised format, Levy and Davis (1988) found that the three attachment styles were not mutually exclusive in that many subjects reported having elements of all three styles. The correlational data showed that secure attachment was strongly and negatively related to avoidant attachment, and weakly and negatively linked to anxious/ambivalent attachment; on the other hand, anxious and avoidant attachment were virtually unrelated (near zero correlation).

Multiple-Item Format

Another approach to assessing adult attachment has involved breaking down Hazan and Shaver's original three descriptions into individual statements to which subjects can respond using rating scales (e.g., Feeney, Noller, & Callan, 1994). The advantage of this approach is that it allows a more fine-grained analysis of subjects' attachment concerns; subjects' responses can also be factor analyzed, allowing an assessment of the dimensions underlying attachment items, and hence the development of empirically derived scales (Feeney, Noller, & Hanrahan, 1994). The development of multiple-item attachment measures represents a shift away from preconceived notions of attachment types toward conceptualizing "attachment" in terms of personality variables

that can be compared across individuals.

Feeney and Noller (1996) pointed out that due to variations in the particular items used across studies, consensus concerning the major dimensions underlying measures of adult attachment has been slow to emerge. However, there is growing support for the idea that two major dimensions underlie the Hazan and Shaver descriptions of attachment types: comfort with closeness and anxiety over relationships (Feeney, Noller, & Callan, 1994; Griffin & Bartholomew, 1994a; Shaver & Hazan, 1993). The comfort with closeness dimension essentially contrasts features of secure and avoidant attachment (e.g., "I find it relatively easy to get close to others," versus "I am somewhat uncomfortable being close to others"). Anxiety over relationships corresponds closely to anxious/ambivalent attachment (e.g., "I find that others are reluctant to get as close as I would like"; "I often worry that my partner doesn't really love me") (Feeney & Noller, 1996).

More broadly based multiple-item attachment measures such as those developed by Brennan and Shaver (1995) and Feeney, Noller, and Hanrahan (1994) also suggest the importance of these two dimensions (called insecurity and preoccupation with relationships by the former, and discomfort with closeness and anxiety over relationships by the latter). While both of these assessment instruments have undergone extensive psychometric development, Feeney, Noller, and Hanrahan's measure appears especially promising in that it is not dependent on being in an intimate relationship and its scales are relatively unaffected by subjects' desire to portray themselves in a favourable light.

Using a large sample of 470 university students and a 40-item measure based on key themes of infant and adult attachment theory, Feeney, Noller, and Hanrahan (1994)

derived five factors or dimensions of adult attachment--confidence (in self and others), discomfort with closeness, need for approval, preoccupation with relationships, and relationships as secondary (to achievement). The scales of their attachment measure have high levels of reliability in terms of internal consistency, as indicated by the following coefficient alphas: .80 (confidence [in self and others]), .84 (discomfort with closeness), .79 (need for approval), .76 (preoccupation with relationships), and .76 (relationships as secondary [to achievement]). The scales also have acceptable temporal stability over a period of 10 weeks, as indicated by the following test-retest reliability coefficients: .74 (both confidence and discomfort with closeness), .78 (need for approval), .72 (preoccupation with relationships), and .67 (relationships as secondary).

Convergent validity data for Feeney, Noller, and Hanrahan's measure were collected by correlating the five attachment scales with the Likert ratings derived from Hazan and Shaver's (1987) forced-choice measure of attachment. The Likert rating of secure attachment correlated positively with confidence (.34) and negatively with the four scales measuring aspects of insecurity (coefficients ranged from -.17 to -.50). The Likert rating of avoidant attachment correlated moderately with discomfort with closeness (.46) and modestly with relationships as secondary (.27). The Likert rating of anxious/ambivalent attachment correlated strongly with preoccupation with relationships (.60) and moderately with need for approval (.40). These correlations support the validity of the scales in assessing constructs proposed by Hazan and Shaver (1987).

An Alternative Approach to Measuring Adult Attachment

It is important to note that there is a frequently used paradigm for measuring adult attachment that differs from those described above. In contrast to self-report

questionnaires that measure adult attachment styles in terms of general orientations toward romantic relationships (Hazan & Shaver, 1987), the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) is designed to assess subjects' memories of their childhood relationships with parents, together with their current evaluations of these early experiences and their influence on current functioning.

On the basis of the overall psycholinguistic quality of the discourse which subjects use during the AAI interview, they are classified into one of four attachment categories: secure-autonomous (marked by presentations that are coherent and consistent, with responses that are clear, relevant, and reasonably succinct); dismissing (marked by difficulty in recalling childhood attachment experiences, contradictions, and minimization of the importance of attachment relationships); preoccupied (marked by confused, angry, or passive preoccupation with attachment figures, and incoherent, sometimes irrelevant answers to questions); and unresolved-disorganized (marked by mental disorganization and disorientation occurring specifically during discussions of potentially traumatic events involving loss of important persons, or physical or sexual abuse) (Main, 1994; 1996). Thus, the four AAI adult attachment classifications represent four distinct forms of discourse, each reflecting different "states of mind," or "mental representations," related to attachment experiences.

In terms of its psychometric properties, the AAI has shown high levels of interrater and test-retest reliability: interrater reliabilities have ranged from 75% to 100% agreement for the four classifications; test-retest reliability of 77% (i.e., 77% of subjects were categorized in the same group across testing occasions) has been demonstrated for all four of the classifications over 12 months (see Stein, Jacobs, Ferguson, Allan, &

Fonagy, 1998, for overview).

The predictive validity of the AAI is supported by (a) the correspondence between parents' mental representations of attachment, assessed three months prior to the birth of their children, and the security of their children's attachment, assessed 15 months later using the strange situation (Benoit & Parker, 1994, cited in Main, 1994); (b) the association between parents' attachment representations and the quality of their children's attachment assessed years earlier in the strange situation; and (c) the links between parents' state of mind with respect to attachment and the quality of their interaction with their children (see van IJzendoorn, 1995, for overview). In short, research using the AAI indicates that parents' organization of their thoughts and feelings about *their* parents is highly predictive of their parenting characteristics and their children's attachment to them. In this way, parental attachment styles are thought to play a role in the intergenerational transmission of attachment patterns.

A limitation of the AAI is that administration and scoring are complex, time-consuming, and require expensive in-depth training (van IJzendoorn, 1995). The AAI is also limited by its sole focus on parent-child interactions. That is, while the AAI classification system has proved useful in predicting parenting characteristics and children's attachment behaviour from parents' descriptions of their own childhood experiences, its relevance to current adult-adult relationships has received limited attention to date (Bartholomew, 1990; Shaver & Hazan, 1993).

Given the above limitations, and this study's focus on sexual correlates of adult attachment styles, it seems apt to use measures that define adult attachment in terms of mental representations of intimate adult relationships rather than models of childhood

experiences.

Bartholomew's Four-Group Model of Attachment

In contrast to data-based or bottom-up approaches to the measurement of adult attachment (e.g., Feeney, Noller, & Hanrahan, 1994), Bartholomew (1990; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994b) has taken a "theory-based or top-down" look at the measurement of adult attachment. Guided by Bowlby's theory that attachment patterns reflect internal "working models" or cognitive schemas of the self and the attachment figure, Bartholomew has argued that four (rather than Hazan and Shaver's original three) attachment styles might characterize adults. The four styles are defined in terms of differing combinations of two underlying dimensions--working models of self (positive or negative) and others (positive or negative) (see Figure 1, p. 30). Each of the attachment categories is conceptualized as a theoretical ideal or prototype with which individuals may correspond to varying degrees. Most individuals are assumed to exhibit elements of more than one attachment pattern. Following from childhood attachment theory, "the self and other models represent general expectations about the worthiness of the self and the availability of others; in contrast, the four attachment patterns are conceptualized as prototypic strategies for regulating felt security in close relationships" (Griffin & Bartholomew, 1994b, p. 431). According to Bartholomew's four-category model (see pp. 32-34 for previous research that has tested Bartholomew's model of adult attachment), adults who view themselves as worthy of love and attention and others as trustworthy, caring, and available tend to be securely attached. Secure individuals are self-accepting and seek out closeness in relationships and are comfortable with both intimacy and autonomy. This style corresponds conceptually to Hazan and Shaver's

		MODEL OF SELF (Dependence)	
		Positive (Low)	Negative (High)
MODEL OF OTHER (Avoidance)	Positive (Low)	SECURE Comfortable with intimacy and autonomy	PREOCCUPIED Preoccupied with Relationships
	Negative (High)	DISMISSING Dismissing of intimacy Counterdependent	FEARFUL Fearful of intimacy Socially avoidant

Figure 1. Bartholomew's (1990; Bartholomew & Horowitz, 1991) model of prototypical adult attachment styles.

(1987) and Main et al.'s (1985) secure group. Adults who view themselves as unlovable yet hold positive perceptions of others tend to be preoccupied with attachment. These individuals depend strongly on others' acceptance to maintain a personal sense of well-being; reaching out to others in an attempt to fulfill dependency needs leaves them vulnerable to distress when their intimacy needs are not met. Preoccupied individuals achieve intimacy and feelings of self-worth at the expense of autonomy. This pattern corresponds conceptually to Hazan and Shaver's anxious/ambivalent category and to Main's preoccupied-enmeshed attachment pattern. Adults who have a negative view of themselves and perceive others as rejecting, uncaring, and distant tend to be fearfully attached. Fearful adults desire close involvements and approval from others, yet they distrust others and fear rejection; for this reason, they tend to actively avoid close contact with others to minimize the pain of potential loss or rejection. The result is that fearful avoidants have difficulties with both intimacy and autonomy. This style is similar to Hazan and Shaver's avoidant category. Finally, adults who view themselves positively but have negative expectations of others tend to dismiss attachment. Individuals with this style passively avoid close relationships and place little importance upon others' acceptance; instead, they stress the value of achievement, independence, and self-reliance. In this way, they attain autonomy and feelings of self-worth at the expense of intimacy. This style corresponds to Main's detached or dismissing group.

In the context of the four-category model, Bartholomew has developed two semi-structured interviews. The Family Attachment Interview addresses experiences in the family of origin. The Peer Attachment Interview addresses overall experiences with close friendships and past and present romantic relationships. Bartholomew has also developed

two self-report questionnaires that pertain to close peer relations in general. The Relationship Questionnaire consists of prototypical descriptions of the four attachment styles, similar in form to the three attachment descriptions used by Hazan and Shaver (1987). The Relationship Scales Questionnaire consists of 30 individual attachment items that correspond to the phrases in Hazan and Shaver's (1987) attachment measure, in Bartholomew and Horowitz's (1991) Relationship Questionnaire, as well as three items developed by Collins and Read (1990). (See the Methodology section for reliability and validity data on the Relationship Questionnaire and the Relationship Scales Questionnaire.) These four instruments yield continuous ratings on each of the attachment style prototypes (see Bartholomew & Horowitz, 1991, and Griffin & Bartholomew, 1994a, for more information about these measures).

The construct validity of Bartholomew's four-group model is supported by the finding that subjects' responses on measures of self-concept, sociability, and interpersonal problems differed as expected as a function of attachment style (Bartholomew & Horowitz, 1991). As defined by peer attachment interview ratings, secure and dismissing subjects (hypothesized to have positive models of self) scored significantly higher than fearful and preoccupied subjects (hypothesized to have negative models of self) on measures of self-esteem and self-acceptance, and significantly lower on measures of personal distress (anxiety, depression, unhappiness). In contrast, secure and preoccupied subjects (hypothesized to have positive models of others) scored significantly higher than fearful and dismissing subjects (hypothesized to have negative models of others) on measures of sociability.

Each attachment style (as defined by peer attachment interviews) was also associated with a distinct profile of interpersonal problems. The secure group reported relatively minor social difficulties. In contrast, dismissing subjects (negative image of others) were more likely to report problems with being excessively cold (e.g., "I keep people at a distance too much"); preoccupied subjects (negative image of self) were more likely to report problems related to being overly expressive (e.g., "I want to be noticed too much"); and fearful subjects (negative image of self and of others) were more likely to report problems reflecting a lack of assertiveness and social inhibition (e.g., "I feel embarrassed in front of other people too much").

Further, intercorrelations among the four attachment styles as measured using family and peer attachment interview ratings, subjects' self-rating (on the Relationship Questionnaire), and friends' rating of subjects (on the friend version of the Relationship Questionnaire) supported a two-dimensional structure of attachment. Significant negative correlations were reported, for example, between attachment ratings in opposing positions of the model (i.e., r s between fearful and secure attachment styles ranged from $-.39$ [peer attachment interview] to $-.69$ [friend-report]; r s between dismissing and preoccupied attachment styles ranged from $-.37$ [self-report] to $-.54$ [family attachment interview]). (Feeney, Noller, and Hanrahan [1994] noted that the wording of the prototypes almost ensures such a result since prototypes in opposing positions contain, by definition, contrary themes.) Data also showed a significant and moderate correlation between corresponding family and peer attachment interview ratings (for the secure ratings, $r = .39$; for the fearful ratings, $r = .29$; for the preoccupied ratings, $r = .66$; for the dismissing ratings, $r = .41$). Factor analyses indicated a moderate degree of convergence across

ratings from peer attachment interviews, self-reports on the Relationship Questionnaire, and friends' reports on the Relationship Questionnaire.

Furthermore, through a cluster analysis that used the scores on the five scales of the self-report Attachment Style Questionnaire (i.e., confidence, discomfort with closeness, need for approval, preoccupation with relationships, relationships as secondary) as the clustering variables, Feeney, Noller, and Hanrahan (1994) identified four distinct attachment groups, which were generally similar to those proposed by Bartholomew. A discriminant-function analysis also gave support to the two underlying dimensions hypothesized by Bartholomew (i.e., self-related dependency and other-related avoidance).

Finally, Griffin and Bartholomew (1994b) used multitrait-multimethod matrices and confirmatory factor analysis to demonstrate the convergent and discriminant validity of the hypothesized self- and other-model attachment dimensions underlying Bartholomew's four-category model of adult attachment. Structural equation modeling also showed that the key dimensions of anxiety-over-relationships and comfort-with-closeness that appear to underlie established self-report measures of adult attachment are associated, respectively, with the self-model and other-model dimensions hypothesized by Bartholomew.

Comparison of Hazan and Shaver's and Bartholomew's Models of Adult Attachment

Hazan and Shaver's (1987) three-category model of adult attachment has stimulated considerable research, and clear differences have been found among the three groups operationalized by their measure (Feeney, Noller, & Hanrahan, 1994). Yet Bartholomew's (1990; Bartholomew & Horowitz, 1991) four-category conceptualization

is seen as perhaps more relevant to adult interpersonal experiences than is Hazan and Shaver's three-category scheme (Rothbard & Shaver, 1994). Bartholomew's contribution is her identification of two subtypes of avoidant adults--those who are counterdependent (called dismissing) and those who fear closeness (called fearful). For purposes of generating hypotheses regarding the correlates of individual differences in attachment, it is instructive to compare measures of Hazan and Shaver's traditional three-category model and Bartholomew's new four-category model. Brennan, Shaver, and Tobey (1991) cross-tabulated Hazan and Shaver's self-report categorical measure with that developed by Bartholomew and found, as expected, that subjects who identified themselves as secure on one measure were also likely to identify themselves as secure on the other, and subjects who endorsed Hazan and Shaver's anxious/ambivalent category were likely to endorse Bartholomew's preoccupied category. Many of Hazan and Shaver's avoidants reported being fearfully avoidant in terms of Bartholomew's measure, while some of the Hazan and Shaver avoidants and secures fell into Bartholomew's dismissing avoidant category. This pattern was replicated in a factor analysis of subjects' self-report ratings on each of the seven type descriptions (i.e., Hazan and Shaver's secure, anxious/ambivalent, and avoidant styles, and Bartholomew's secure, preoccupied, fearful, and dismissing styles). Two clear factors emerged: On the first factor, Bartholomew's and Hazan's secure ratings loaded positively (.78 and .79) and Bartholomew's fearful and Hazan's avoidant ratings loaded negatively (-.68 and -.77); on the second factor, Bartholomew's preoccupied and Hazan's anxious/ambivalent ratings loaded positively (.77 and .84) and Bartholomew's dismissing ratings loaded negatively (-.52). These results, in addition to those discussed in the paragraphs above, support the utility of Bartholomew's four-group

model and have lead to its increased adoption by researchers using a priori attachment descriptions (whether in forced-choice or rating scale format) (Feeney & Noller, 1996).

Stability of Adult Attachment

The stability of adult attachment patterns has been assessed using various forms of measures: forced-choice (both Hazan and Shaver's three group and Bartholomew's four group), Likert ratings of attachment prototypes, and multiple-item scales. Based on a review of the literature, Feeney and Noller (1996) reported that when stability was assessed using either three-group or four-group forced-choice measures, approximately one in four subjects showed a change in attachment style across assessments. Apparently, this figure varied little with the time interval between assessments; greater stability was reported, however, for attachment categories that are endorsed with high frequency (e.g., secure attachment).

Regarding the stability of Likert ratings of the three attachment prototypes, test-retest correlations over intervals of 2 weeks to 8 months generally indicated moderate stability (range from .37 to .73; mean .58) (Feeney & Noller, 1996).

Likert ratings of the four attachment prototypes, as defined by attachment interview, showed moderate to high stability over an 8 month period (range from .58 to .82; mean .70), while stability for self-reports (range from .39 to .58; mean .51) and partner-reports (range from .37 to .71; mean .51) were somewhat lower (Scharfe & Bartholomew, 1994). In contrast to findings from forced-choice measures, all attachment styles showed comparable stability.

The results of structural equation modeling indicated that the stability of interview ratings of the two attachment dimensions hypothesized to underlie the four-group model

of attachment--models of self and models of others--was high over an 8 month time period. For females, the stability coefficients for the self- and other-model dimensions were .84 and .72, respectively. For males, the stability coefficients were .81 and .85, respectively (Scharfe & Bartholomew, 1994).

Finally, multiple-item attachment scales showed moderate stability over an interval of 8 months. For example, the average test-retest correlations of Collins and Read's (1990) three attachment scales (closeness, dependence, and anxiety) derived from the Relationship Scales Questionnaire were .60 for women and .66 for men. When the unreliability of the scales was statistically controlled for through correction for attenuation, these scales showed substantial stability (on average, .78 for women and .86 for men) (Scharfe & Bartholomew, 1994). As discussed previously, Feeney, Noller, and Hanrahan's (1994) five attachment scales (confidence, discomfort with closeness, need for approval, preoccupation with relationships, and relationships as secondary) also appeared quite stable (the average test-retest correlation was .73 across a period of 10 weeks).

In summary, Feeney and Noller (1996) indicated that there is considerable evidence for the stability of adult attachment. They pointed out that any variability in adult attachment is usually explained in terms of unreliability of measurement; significant life events (e.g., relationship formation or breakups) that destabilize attachment patterns and associated mental models over time; and contextual factors that elicit different attachment orientations at a given point in time.

Summary

It is apparent that over the years, Hazan and Shaver's (1987) original self-report

categorical measure of adult romantic attachment styles has been modified, expanded, and tested with the goal of clarifying the construct of adult attachment and finding ways to assess it reliably. Methodological developments have included (a) the introduction of Likert scales for rating the applicability of each of the three original attachment descriptions (e.g., Levy & Davis, 1988); (b) the deconstruction of the three descriptions into numerous statements that participants can rate using scales, a format that allows for the creation of factor-based dimensional measures (e.g., Feeney, Noller, & Callan, 1994); and (c) the development of more broadly based multiple-item measures that cover features described in both Hazan and Shaver's three-group and Bartholomew's four-group models of adult attachment, together with the basic themes of infant attachment theory (e.g., Feeney, Noller, & Hanrahan, 1994).

In concert with the methodological developments mentioned above, conceptual issues have emerged concerning the number of styles needed to capture critical individual differences in adult attachment. Bartholomew expanded Hazan and Shaver's three-style model to four styles that are defined by the intersection of two underlying dimensions: mental models of the self (positive or negative) and mental models of others (positive or negative). Bartholomew's approach to measuring adult attachment patterns is one of the most advanced in that it incorporates continuous ratings of four moderately stable prototypic patterns based theoretically on the underlying dimensions of dependence (related to mental models of the self) and avoidance (related to mental models of others). Bartholomew's four-category, two-dimensional model is supported by findings from both confirmatory (e.g., confirmatory factor analysis and structural equation modeling; Griffin & Bartholomew, 1994b) and empirical (e.g., exploratory factor, cluster, and discriminant-

function analysis; Feeney, Noller, & Hanrahan, 1994) methods of deriving the dimensions underlying individual differences in adult attachment. Notwithstanding this evidence, however, Bartholomew (Griffin & Bartholomew, 1994b) advised that

at this point in time...it is too early to pick a 'winner' among the different approaches to measuring adult attachment. The area of research is very young, and it is best served by a variety of approaches, each with its own particular advantages and costs (p. 46).

In this study, I tested further the external validity of Bartholomew's model by examining the relevance of her classification system for sexual cognitive schemas and safer sexual behaviour in young adults.

Attachment and Sexuality

Feeney and Raphael (1992) suggested that attachment theory provides a useful perspective on human sexuality, and that attachment style differences have implications for understanding risk behaviours for HIV/STD infection. To date, no study has examined attachment styles that may underlie safer sexual behaviour. However, there is both theoretical and empirical support for an association between attachment style and patterns of sexual relationships. What follows is a discussion of this support. After presenting this support, I will put forth an argument supporting a connection between attachment style and the practice of safer sex.

Attachment Style and Sexual Relations

Drawing on Bowlby's writings, Shaver and Hazan (1988) outlined how adult romantic attachment style might be expected to affect sexual behaviour. They indicated that avoidant (fearful, dismissing) attachment is considered to result from a history of consistent rejection on the part of a primary caregiver. As a way of coping emotionally with rejection, individuals may learn over time to deny and suppress negative feelings, to distrust others, to be excessively self-reliant, and to avoid interpersonal closeness. Thus, Shaver and Hazan proposed that avoidant attachment should be associated with a style of sexual behaviour characterized by emotional detachment and promiscuity.

Questionnaire studies of adult attachment have provided support for this proposition. Specifically, avoidant lovers report fear of intimacy and a tendency to maintain emotional distance with their partners (Hazan & Shaver, 1987); are more likely

than secure individuals to fantasize about sex with someone else other than their partner and to engage in relatively brief sexual encounters and affairs (Brennan & Shaver, 1995); are more accepting of casual (uncommitted) sex than other attachment groups (Feeney, Noller, & Patty, 1993); and tend to report activities indicative of low emotional intimacy (one-night stands, extra-relationship sex, sex without affection), as well as less enjoyment of physical contact (Hazan, Zeifman, & Middleton, 1994, cited in Feeney & Noller, 1996).

As noted by Shaver and Hazan (1988), anxious/ambivalent (preoccupied) attachment is believed to reflect a history of inconsistent caregiving. Not trusting others to care for them sufficiently, anxiously attached individuals may learn to be hypervigilant about their partner's interest in them and often be needy, angry, and demanding of their attention. With regard to the relationship between attachment style and sexuality, Shaver and Hazan (1988) proposed that anxiously attached individuals may attempt to satisfy unmet needs for security and love through sexual activity.

In line with this thinking, Hazan and Shaver (1987) reported that anxious/ambivalent lovers tend to be obsessively preoccupied with their partners' responsiveness and experience intense sexual passion and jealousy in regard to their partners, and Brennan and Shaver (1995) reported that they tend to become jealous, clingy, and overly dependent on partners. Anxious-ambivalent females reported more involvement in exhibitionism, voyeurism, and domination-bondage than their male counterparts; for both sexes, anxious/ambivalent attachment was related to enjoyment of holding and caressing but not of more overt sexual behaviours (Hazan et al., 1994, cited in Feeney & Noller, 1996).

As noted by Shaver and Hazan (1988), secure attachment is believed to develop in the context of generally sensitive and responsive caregiving. Having their needs for care consistently met leads the securely attached to trust in the availability and warm intentions of significant others. Shaver and Hazan (1988) thus proposed that secure attachment should be associated with a style of sexuality that strives for mutual intimacy and physical pleasure.

Consistent with this proposal, secure individuals described their most important love experience as especially happy, friendly, and trusting (Hazan & Shaver, 1987); were more likely than avoidant individuals to be involved in longer-term, committed sexual relationships (Brennan & Shaver, 1995); were less likely than other attachment groups to get involved in one-night stands and in having sex outside the primary relationship; and were more likely to be involved in mutually initiated sex and to enjoy both sexual and nonsexual physical contact (Hazan et al., 1994, cited in Feeney & Noller, 1996).

There were gender differences in some studies of the link between attachment style and sexuality. For example, Brennan and Shaver (1995) found that gender associated significantly with scores on a measure of sociosexual orientation (items tap behaviours such as number of sex partners, number of one-night stands, frequency of sexual fantasies, and attitudes to uncommitted sex), with males scoring significantly higher than females. Hazan et al. (1994, cited in Feeney & Noller, 1996), found that anxious-ambivalent females were less inhibited sexually than anxious-ambivalent males. In Feeney et al.'s (1993) study, avoidant females and anxious/ambivalent males were the least likely to report engaging in sexual intercourse during the course of the study. This last finding suggests that attachment style and gender have interactive effects on the

expression of sexuality; also, female avoidants' reported low level of sexual activity contrasted with male and female avoidant subjects' greater acceptance of casual sex, which highlights the need to assess the association between attachment style and both sexual attitudes and sexual behaviours (Feeney & Noller, 1996).

Summary. Research on adult attachment and sexuality suggests that relatively distinct patterns of sexual behaviour can be identified, consistent with the three traditional adult attachment styles; that attachment style and gender can have interactive effects on sexual behaviour; and that attachment style can affect both sexual attitudes (i.e., working models, see p. 48) and sexual behaviours.

Attachment Style and Safer Sexual Behaviour

As discussed above, Hazan and Shaver (1988) proposed that attachment style influences sexual feelings and behaviour. Findings from previous research have confirmed an association between attachment style and sexuality in terms of the type of sexual activities (e.g., affairs versus exclusive relationship) and the degree of emotional commitment (e.g., detached-casual versus longer-term committed; Brennan & Shaver, 1995; Feeney et al., 1993; Hazan & Shaver, 1987; Hazan et al., 1994, cited in Feeney & Noller, 1996).

By extension, because the practice of safer sex is one aspect of sexual relations, I assumed that attachment style would also be related to safer sexual behaviour. In as much as precautionary sexual behaviour involves sensitive sexual negotiations with another person, it might be expected that issues of trust, approval, commitment, and emotional intimacy (the basic themes of adult attachment theory) would come into play. Depending on how salient these interpersonal issues are for individuals (i.e., their attachment

orientation), differences in the practice of safer sexual behaviour are expected. Below, I present the ways that each of the four prototypical attachment styles hypothesized by Bartholomew's model (Bartholomew, 1990; Bartholomew & Horowitz, 1991) were expected to be related to safer sexual behaviour.

Dismissing attachment pattern. Theoretically, a dismissive attitude toward intimate relationships reflects a lack of trust in others, little need for others' acceptance, and an emphasis on self-reliance. Accordingly, it was expected that the more dismissing one is in terms of attachment, the more compelled one will be to protect oneself sexually, and the less concerned one will be about insulting, distancing, or losing a sexual partner by broaching the topic of safer sex and/or insisting on condom use. As well, some individuals with a dismissing attachment style may be inclined to engage in brief sexual encounters and affairs (Brennan & Shaver, 1995; Hazan et al., 1994, cited in Feeney & Noller, 1996), a context wherein condoms tend to be used (Hammer et al., 1996; Kelly & Kalichman, 1995). These factors should lead to the consistent practice of safer sex.

Preoccupied attachment pattern. Theoretically, being preoccupied with attachment reflects low self-esteem, low self-confidence, and high dependence on others' approval and acceptance to maintain a personal sense of well-being. Thus, it was expected that the more preoccupied ("needy") one is with close relationships, the more reluctant one will be to initiate talk about safer sex or use condoms for fear of damaging emotional intimacy with a sex partner. Accordingly, high preoccupation with attachment was expected to be associated with low level involvement in safer sexual practices.

Fearful attachment pattern. Theoretically, being fearfully attached implies a distrustful, dependent, avoidant pattern of relating to others. Due to feelings of insecurity

within themselves and around other people, fearfully attached individuals tend to be hypersensitive to possible rejection (feel threatened) and consequently avoid close involvement with others. Worry about being hurt emotionally if one gets too close to others is a prototypic feature of this attachment style.

The fearful attachment style of wanting closeness but feeling uneasy about it (needy-but-fearful) conceivably could lead to alternative outcomes in terms of safer sexual practices. On the one hand, the more fearfully attached one is, the more one will protectively abstain from or shun sexual intimacy; if sex is engaged in, it will likely involve relatively brief sexual encounters with low emotional intimacy (Brennan & Shaver, 1995), circumstances wherein condoms will most likely be used (Hammer et al., 1996; Kelly & Kalichman, 1995). On the other hand, high need for social approval, lack of social self-confidence (Feeney, Noller, & Hanrahan, 1994), and a tendency to assume an overly passive role in close relationships (Bartholomew & Horowitz, 1991) will compel the fearfully attached to "go along with" the norm of not initiating discussions about protective sex or insisting on condom use with a partner. Due to these potentially conflicting motives and outcomes, fearful attachment was not expected to be reliably related to safer sexual behaviour.

Secure attachment pattern. Conceptually, secure attachment reflects a positive view of self and others. Self-acceptance, comfort with interpersonal closeness, and trust in the warm intentions of others are prototypic characteristics of secure attachment. Empirical findings have supported this conceptualization of secure attachment (Bartholomew & Horowitz, 1991; Feeney et al., 1994). With these characteristics, secure attachment might also lead to alternative outcomes concerning safer sexual behaviour.

Given their positive self- and other-models, secure individuals should be relatively open to addressing the subject of safer sex (i.e., little concern about being abandoned or having others not accept them). Their capacity to openly express their concerns, willingly seek sexual partners' cooperation, and expect that their cooperation will be forthcoming, increases the probability that safer sexual behaviour will be engaged in.

However, the more securely attached one is, the more trusting one should be of sex partners and, thus, the less vulnerable one should feel about contracting HIV/STDs. Perception of low perceived risk for exposure to HIV/STDs increases the probability that safer sexual behaviour will be ignored (Seal & Palmer-Seal, 1996; Wendt & Solomon, 1995). Findings have indicated that secure individuals tend to be more monogamous in their sexual relations than other attachment groups (Hazan et al., 1994, cited in Feeney & Noller, 1996), a situation that is associated with decreased safer sex talk and condom use (Kelly & Kalichman, 1995; Morrill et al., 1996). According to friends' reports, more securely attached people tend to be more exploitable (e.g., let other people take advantage of them too much) and more nurturant (e.g., put other people's needs before their own too much) (Bartholomew & Horowitz, 1991), interpersonal characteristics that also may lead to high risk sexual behaviour (Hill & Preston, 1996).

Thus, although more secure attachment ought to be associated with greater readiness to be open about safer sex needs, it is also associated with more HIV/STD risk factors such as trust, faithfulness, nurturance, and exploitability in sexual relationships; hence, secure attachment was not expected to be reliably related to safer sexual behaviour.

Summary. Among Bartholomew's four hypothesized prototypic attachment styles, I expected the dismissing and the preoccupied, but not the fearful and the secure, attachment patterns to be associated with precautionary sexual practices.

Attachment and Sexual Working Models

Feeney and Raphael (1992) proposed that differences in attachment style have important implications for adults' cognitive, affective, and behavioural responses to sexuality, including the practice of safer sex. To date, no study has examined attachment styles that may contribute to safer sexual behaviour, nor the mechanisms through which this might occur. In the preceding section, I discussed possible links between different attachment styles and risky sexual behaviour. I propose that links between particular attachment styles and safer sexual behaviour may be mediated, at least partially, by "sexual working models." What are sexual working models? How can they be operationalized? What is their relationship to attachment style and safer sex? In this section, I offer some preliminary answers to these questions. In doing so, I begin by discussing the construct of "internal working models" of attachment.

Contemporary attachment theory (Bowlby, 1988) suggests that individual differences in adult attachment style are indicative of underlying differences in relatively stable internal mental representations or "working models" of self and others (Collins & Read, 1994). Collins and Read proposed that internal working models of attachment include four, affect-laden, interrelated components: "(1) memories of attachment-related experience, (2) beliefs, attitudes, and expectations about self and others in relation to attachment, (3) attachment-related goals and needs, and (4) strategies and plans associated with achieving attachment goals" (p. 61). According to their conceptualization, working models of attachment are dynamic cognitive-affective-motivational brain

processes that influence attachment behaviour, and are core features of personality. That is, adults with different attachment "styles" behave differently because they are predisposed to think and feel differently about themselves and their relationships.

As discussed previously, Shaver and Hazan (1988) have argued that attachment style in adults influences the expression of sexuality, since the attachment system appears first in the course of the individual's development. From their perspective, sexual feelings and behaviour are direct outgrowths of the attachment system, and are inextricably tied to attachment style in adult close relationships. It follows from this conceptualization that adult attachment style, and corresponding working models of attachment, should be associated with sexual behaviour, and corresponding working models of sexuality.

Consistent with the conceptualization of attachment working models, I define sexual working models as relatively stable, unique sets of internal cognitive-affective-motivational processes or schemata that predispose one to respond in certain ways in sexual relationships. I propose, based on Collins and Read's (1994) and Shaver and Hazan's (1988) theorizing, that individuals with different attachment styles should have different thoughts, feelings, and motives (i.e., working models) associated with sexuality which influence different safer sexual behaviour.

To date, aspects of sexual working models have received limited attention in the attachment literature. I know of only three published empirical works that have investigated connections between attachment style and individual differences in sexual working models (Brennan, Clark, & Shaver, 1998; Brennan & Shaver, 1995; Feeney, Noller, & Patty, 1993). Brennan et al. (1998) examined the relationship between attachment style and emotions typically experienced after sex. Brennan and Shaver

(1995) and Feeney et al. (1993) examined the relationship between attachment style and attitudes towards casual and uncommitted sex (called "sociosexual orientation"; Simpson & Gangestad, 1991).

My study extends previous research investigating the relation between attachment style and working models of sexuality by using measures that tap a broader range of individual differences in thoughts, feelings, and motives associated with sex (Hill & Preston, 1996; Snell, Fisher, & Walters, 1993). Snell et al.'s (1993) multidimensional questionnaire (see Appendix D, p. 174) measures 12 "individual psychological tendencies associated with sexual relations" (p. 29). Examples include a stable tendency to feel tension and anxiety about the sexual aspects of one's life, and a stable tendency to become absorbed in and obsessed with thoughts about one's sexual life. Hill and Preston's (1996) questionnaire (see Appendix E, p. 179) measures eight "dispositional sexual motives," defined as "stable interests in particular aspects of sexual behaviour" (p. 28). Examples include an enduring desire to have sex as a way of feeling emotionally valued by one's partner, and an enduring desire to have sex as a means of nurturing one's partner. I suggest that these stable or enduring psychological orientations toward sex function as sexual working models in that they serve as internal mediating cognitive-affective-motivational variables that impact on persons' sexual practices. In view of Collins and Read's (1994) multicomponent conceptualization of working models, alternative indices of working models of sexuality might readily be advanced; nevertheless, the sexual working model variables assessed by Hill and Preston's and Snell et al.'s measures broaden the scope of the individual difference approach to the study of sexuality and, thus, were the ones considered in this study.

What is the nature of the hypothesized relationship between different attachment styles and sexual working models? I proposed that each of the four prototypical attachment styles hypothesized by Bartholomew's model (Bartholomew, 1990; Bartholomew & Horowitz, 1991) should be associated with particular sexual working model variables as operationalized above. I discuss each of the predicted patterns below.

Dismissing Attachment Pattern

Attachment theory characterizes the dismissing prototype as having a positive view of self and as being independent, self-reliant, and achievement-oriented. Further, empirical findings have indicated a positive correlation between a dismissing style of attachment and self-confidence and control in relationships (Bartholomew & Horowitz, 1991), and that dismissing individuals place high emphasis on achievement (Feeney, Noller, & Hanrahan, 1994). Thus, the dismissing style of attachment was expected to be linked with tendencies to feel good about one's sexuality, to be sexually assertive, and to enjoy having sex as a means of enhancing one's feelings of power. Attachment theory also characterizes the dismissing prototype as wanting to avoid intimacy. Further, empirical findings have indicated a negative correlation between dismissing prototype ratings and level of involvement in close relationships (Bartholomew & Horowitz, 1991), and that dismissing individuals are relatively uncomfortable with being close to others (Feeney, Noller, & Hanrahan, 1994). Therefore, I also expected the dismissing prototype to be associated with little desire to express emotional value for one's partner or to provide one's partner with nurturance through sex. Previous research has indicated that undergraduates who are less interested in sex for these purposes, tend to use more condoms in their sexual relations (Hill & Preston, 1996). Thus, the aforementioned sexual

working model variables were expected to increase the likelihood of engaging in safer sex.

Preoccupied Attachment Pattern

Attachment theory characterizes the preoccupied prototype as having low self-confidence, a strong desire to gain others' approval, vulnerability to distress when intimacy needs are not met, and a tendency to try and satisfy unmet needs for affection and love through sexual activity. Further, previous research findings have indicated a negative correlation between the preoccupied attachment style and social self-confidence (Bartholomew & Horowitz, 1991), and that preoccupied individuals worry a lot about their relationships and whether others approve of them (Feeney, Noller, & Hanrahan, 1994). Feeney, Noller, and Hanrahan (1994) found that while subjects in the preoccupied group emphasized the importance of relationships (i.e., desired intimacy), they were somewhat uncomfortable with closeness (i.e., found it hard to trust others; felt uneasy about getting close). These contradictory sentiments toward relationships imply that individuals who are preoccupied with attachment may compromise themselves sexually (e.g., forego the use of condoms) for the sake of having a relationship, but doing so engenders anxiety for them. Therefore, preoccupation with attachment was expected to be associated with tendencies to be sexually preoccupied, anxious, and depressed; to be concerned about the impression one's sexuality makes on others; and to engage in sex as a way of obtaining relief from stress, and of feeling emotionally valued by one's partner. These particular sexual working model variables were expected to decrease the likelihood of engaging in safer sex.

Fearful Attachment Pattern

According to attachment theory, individuals who are fearfully attached worry about being hurt emotionally if they get too close to others. In previous research, fearful attachment was associated with low social self-confidence, problems with being overly introverted and subassertive, lack of closeness in relationships (Bartholomew & Horowitz, 1991), and worry about relationships (Feeney, Noller, & Hanrahan, 1994). Thus, the fearful style of attachment was expected to be associated with tendencies to have low sexual self-esteem, and to be unassertive, dissatisfied, anxious, depressed, fearful, and unmotivated when it comes to sex. This constellation of sexual working model variables was expected to influence safer sexual behaviour, however, the nature of the relationship was unclear.

Secure Attachment Pattern

Relatively high self-esteem and comfort with interpersonal intimacy are prototypic characteristics of secure attachment. Empirical findings have supported this conceptualization of secure attachment (Bartholomew & Horowitz, 1991; Feeney et al., 1994). Thus, I expected security to be associated with tendencies to feel good about one's sexuality; to be sexually self-aware, assertive, and satisfied; and to be sexually motivated by a desire to experience pleasure, feel emotionally cared for by one's partner, express emotional closeness for one's partner, and provide one's partner with nurturance. Complementarily, I did not expect individuals with a secure attachment orientation to be preoccupied, anxious, depressed, or fearful about sex; or to be sexually motivated by a desire to obtain relief from stress, enhance their personal feelings of power, or experience the power of their partner. These indices of sexual working models were expected to

affect safer sexual practices, but the nature of the relationship was unclear.

Summary

In this section I discussed the conceptual relationship between internal working models of attachment and working models of sexuality. Working models of sexuality, I suggested, can be usefully operationalized in terms of individual differences in sexual motives, thoughts, and feelings, as measured by Hill and Preston (1996) and Snell et al. (1993). Furthermore, I proposed ways that different attachment styles may be related to sex-specific working models. I also suggested and presented some preliminary evidence indicating that sexual working model variables may play a role in determining HIV/STD-relevant sexual behaviour. In short, I argued that the above attachment styles are associated with particular sexual working model variables, which in turn influence safer sexual behaviour. As such, sexual working models were conceptualized as mediating variables between attachment style and safer sexual behaviour.

Research Questions and Hypotheses

Collectively, heterosexually active university students tend to be sexual risk-takers (Lewis et al., 1997) and have high rates of STDs/HIV relative to the general population (Gayle et al., 1990; Rickert & Rickert, 1995; Seal & Palmer-Seal, 1996; Simkins, 1995; Wendt & Solomon, 1995). Thus, they represent an important group for studying and understanding factors that influence safer sexual practices.

In order to better understand sexual risk-taking behaviour and to improve STD/HIV prevention efforts, some writers (e.g., Feeney & Raphael, 1992) have stressed that research needs to pay more attention to the influence of individual differences in emotional attachments on the practice of safer sex. Concerns about maintaining intimacy and interpersonal trust tend to inhibit university-aged romantic/sexual partners from adopting safer sexual practices (Hammer et al., 1996). Attitudes toward trust and commitment are key themes underlying measures of adult attachment, hence an attachment conceptualization of sexual risk behaviours is relevant to understanding why some university students practice safer sex while others do not.

Theoretically, individual differences in attachment style influence different sexual cognitions, feelings, and behaviour (Feeney & Raphael, 1992; Shaver & Hazan, 1988). Research findings have indicated that attachment style differences correspond to particular sexual attitudes and patterns of sexual relations (Brennan & Shaver, 1995; Feeney, Noller, & Patty, 1993; Hazan & Shaver, 1987; Hazan et al., 1994, cited in Feeney & Noller, 1996). Because safer sexual practices are an aspect of sexual relations, different

attachment styles and corresponding sexual thoughts and feelings might be expected to be related to different safer sex practices.

This study was designed to extend previous research into the sexual correlates of attachment style by clarifying the relations among attachment style, working models of sexuality, and safer sexual behaviour in young adults in university. On the basis of attachment theory and previous research into links between attachment style and sexuality, I assumed that attachment style influences the practice of safer sex and that dispositional feelings, attitudes, and motives concerning sexuality ("sexual working models") partially mediate or "account" for this effect (see Figure 2, p. 57).

Two obvious research questions arise: (a) Does attachment style relate to safer sexual activity? and (b) If so, is the relationship mediated by sexual working models? The following hypotheses guided this study:

1. The more dismissing one is of attachment, the more likely one will engage in safer sex.
2. In contrast, the more preoccupied one is of attachment, the less likely one will practice safer sex.
3. The respective relations between dismissing and preoccupied attachment styles and safer sexual behaviour will be mediated in part by components of sexual working models. In other words, dismissing and preoccupied attachment styles will be associated with aspects of sexual working models, which in turn will be associated with safer sexual behaviours (see Figure 3, p. 58).
4. Fearful and secure attachment styles are expected to be associated indirectly with the practice of safer sex through components of sexual working models. In other

words, fearful and secure attachment styles will be associated with sexual working models, which in turn will be associated with precautionary sexual behaviour (see Figure 4, p. 58).

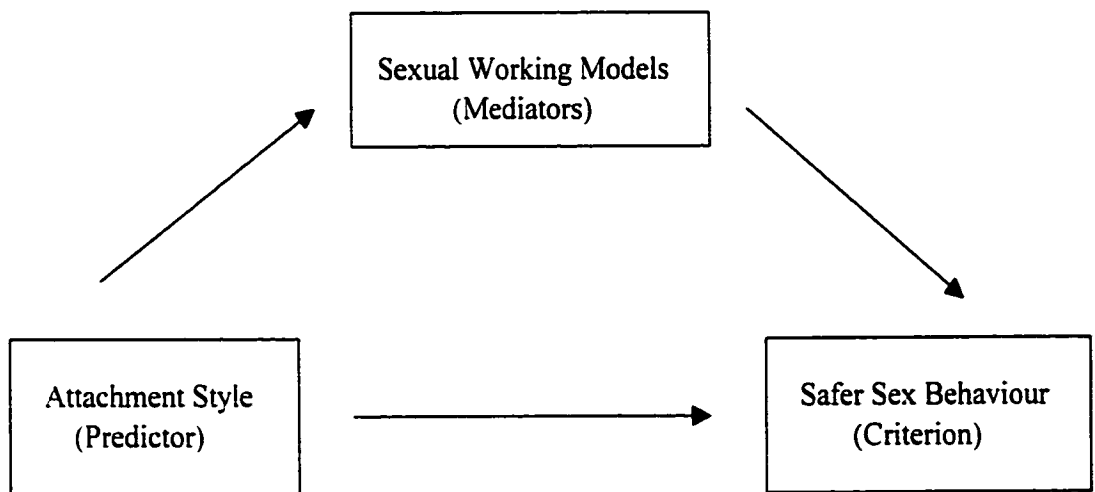


Figure 2. General model of relations between styles of adult attachment, working models of sexuality, and safer sex.

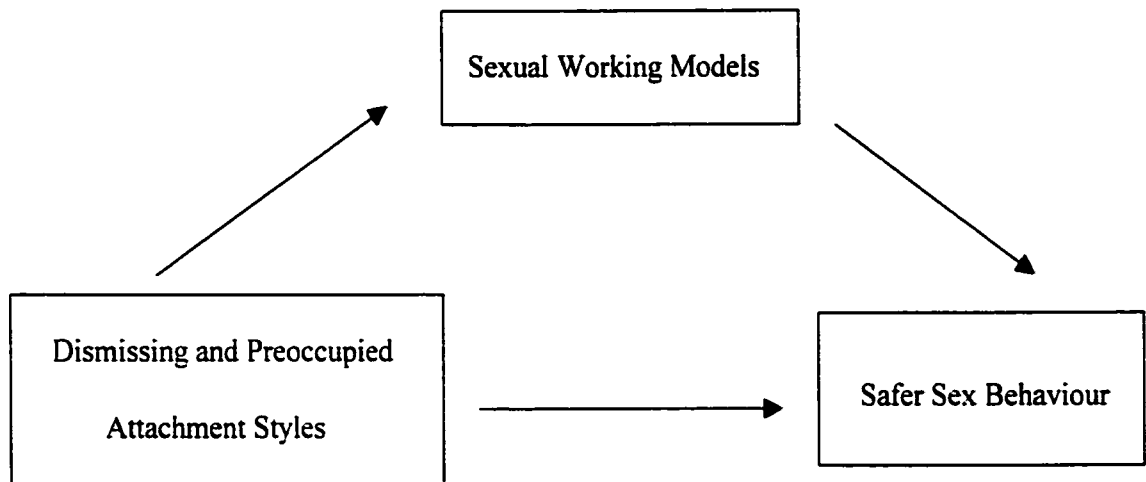


Figure 3. Hypothesized relations between Dismissing and Preoccupied styles of attachment, working models of sexuality, and safer sex.

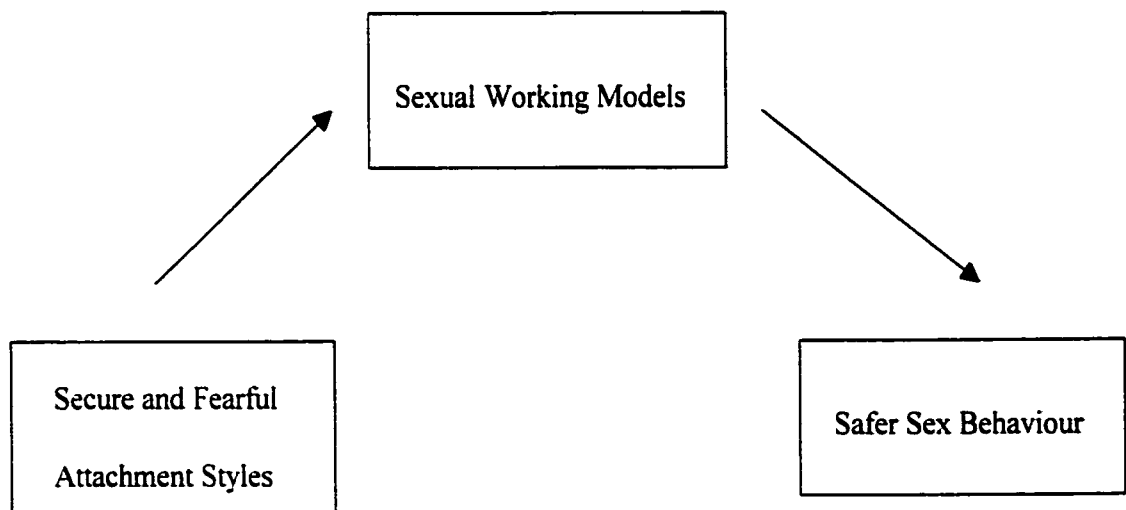


Figure 4. Hypothesized relations between Secure and Fearful styles of attachment, working models of sexuality, and safer sex.

Method

Participants

Participants were students at the University of Saskatchewan. Participants were recruited from various sources: two large introductory psychology classes, a research sign-up board intended for introductory psychology students, and three different 200-level psychology classes. Participants from the introductory psychology sample participated to fulfill part of an introductory psychology course requirement. From all those who participated, we included in our analyses only those students who were between 17 and 25 years of age and who indicated that they had been involved in a sexual relationship.

The major characteristics of the sample are presented in Table 1 (see p. 60). Table 1 shows that the majority of the respondents were female, white, single, and heterosexual. There was approximately an even split between those in the sample who reported that they currently were not seeing/dating anyone, those who reported that they were seeing/dating someone, and those who reported that they were involved in a committed relationship. On average, participants had been involved in a relationship for a little over a year. Participants reported having on average two and three sex partners in the past year and in the past 2 years, respectively. Approximately the same number of participants who reported that they were seeing/dating someone or that they were involved in a serious relationship reported that they were sexually active. Two thirds of the total sample indicated that they felt comfortable and secure with their level of sexual involvement. The prevalence rate of STDs in the present sample was comparable to

TABLE 1
SAMPLE CHARACTERISTICS (N = 242)

Characteristic	Range		Mean	Median	SD
Age (years)	17-25		19.8	19.0	1.8
Months in current relationship	0-71		15.6	9.0	18.2
Number of sex partners in past year*	0-20		1.7	1.0	1.8
Number of sex partners in past 2 years*	1-25		2.6	1.0	2.9
	N	%		N	%
Gender					
Female	143	59.1	Current Sexual Involvement*		
Male	99	40.9	Not involved in a sexual relationship	77	31.8
Racial Background			Involved in nonexclusive sexual relationship	21	8.7
White	222	91.7	Involved in exclusive sexual relationship	142	58.7
Interracial	6	2.5	Comfortable/Secure with Current Sexual Involvement?*		
Asian	5	2.1	Yes	163	67.4
Aboriginal	5	2.1	Somewhat	57	23.6
Other	4	1.7	No	15	6.2
Sexual Orientation*			History of STDs*		
Heterosexual	231	95.5	Have never had STDs	226	93.4
Bisexual	6	2.5	Have had STDs	15	6.2
Lesbian	2	.8	Type of STDs contracted*		
Other	1	.4	More than one type	5	2.1
Marital Status*			Genital warts	5	2.1
Single	201	83.1	Chlamydia	3	1.2
Common Law	19	7.9	Other	2	.8
Engaged	8	3.3	Do you currently have STDs?*		
Married	7	2.9	No	236	97.5
Separated/Divorced	2	.8	Yes	3	1.2
Other	1	.4	Type of STDs that you currently have*		
Current Romantic Involvement			Genital herpes	1	.4
Not seeing/dating anyone	75	31.0	Other	1	.4
Seeing/dating someone	73	30.2			
Involved in serious (committed) relationship	93	38.4			
Involved in more than one type of relationship	1	.4			

*Ns in some cases do not add up to 242, as there are missing cases. Percentages given reflect percentage including missing cases.

rates reported in previous studies. Approximately 8% of the women ($n=11$) and 4% of the men ($n=4$) indicated a history of STDs. One male participant reported being HIV-positive. Among the 15 participants who reported a history of STDs, seven indicated on the RQ categorical measure that they felt secure in their attachment relationships, five indicated that they were fearfully attached, two indicated that they were dismissive of attachment, and one indicated being preoccupied with attachment. Thus, 80% of participants with a history of STDs were either securely or fearfully attached. (In comparison, 71.2% of participants with no history of STDs were either securely or fearfully attached.) Of the above demographic variables, gender and length of time in relationship were included as control variables in the analyses of the present study.

Procedure

Participants who were recruited from the two large introductory psychology classes completed a questionnaire packet during “mass testing” at a scheduled class time. The questionnaire packet contained a cover letter (see Appendix A, p. 167) that briefly informed participants about the aim and the voluntary and confidential nature of the study, a pencil and a computer scoring sheet, and the six measures described below. Participants who were recruited from the research sign-up board completed the questionnaire packet in small groups at prearranged times. Participants who were recruited from the 200-level psychology classes were given the packet in class and were asked to return the packet the next day.

Instructions on the questionnaires that addressed sexuality asked students who had never had a sexual relationship to answer items in terms of what they thought their responses would most likely be. This procedure was designed to ensure that all students

took approximately the same amount of time to complete the questionnaires, thus eliminating the possibility that students would be identified on the basis of who was and was not sexually active. Participants were instructed to put their completed questionnaires in envelopes provided, further ensuring confidentiality. As participants handed in their questionnaires, they were given a debriefing form (see Appendix H, p. 189) and provided with resource materials regarding STDs/HIV, safer sex behaviour, and effective sexual decision-making.

Measures

Adult Attachment Style

Adult attachment style was assessed using two self-report measures, the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) and the Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994a, 1994b). I describe each of these measures below.

The RQ. The RQ consists of four short paragraphs describing theoretically ideal or prototypic adult attachment styles as they apply to close peer relationships (see Appendix B, p. 169). Recall that each of the four attachment patterns is conceptualized in terms of a combination of two underlying psychological dimensions--a person's self-image (a general sense of being worthy of love and support or not) and a person's image of others (other people are generally seen as available and supportive or rejecting and uncaring). Basic perceptions of one's self-worth and lovability are presumed to be associated with the degree of anxiety and dependency experienced in close relationships, while core expectations regarding the trustworthiness and dependability of others are presumed to be associated with the tendency to seek out or avoid closeness in

relationships (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994b).

The prototypic "secure" attachment pattern is theoretically expected to have positive internal representations or "working models" of the self and others. This combination of characteristics would lead the person to feel comfortable with intimacy and autonomy. The "fearful" pattern is presumed to have negative models of self and others. This combination of characteristics would lead the person to avoid closeness in relationships in an attempt to minimize the pain of anticipated rejection by others. The "preoccupied" attachment pattern is theoretically expected to reflect negative models of self and positive models of others. This combination of characteristics would lead the person to seek out closeness in relationships in an attempt to gain the acceptance of valued others and thus validate their precarious self-worth. The "dismissing" pattern is theoretically described as having a positive self-image and a negative image of others. This combination of characteristics would lead the person to deny the importance of close relationships and to stress the importance of independence. Respondents are asked to rate how well they resemble each of the four attachment patterns on a 7-point Likert scale ranging from "not at all like me" (1) to "very much like me" (7).

The RSQ. Unlike the four-category RQ, the RSQ consists of 30 items corresponding to phrases taken from Hazan and Shaver's (1987) paragraph descriptions, Bartholomew and Horowitz's (1991) RQ, and Collins and Read's (1990) Adult Attachment Scale (see Appendix C, p. 171). Using a 5-point scale ranging from "not at all like me" (1) to "very like me" (5), participants rate how well each item fits their typical style in close relationships. Of the 30 items presented to participants, 17 (drawn from the

paragraph descriptions of the RQ) are used to define the four attachment prototypes. RSQ scores for the four attachment prototypes are derived by computing the mean of four or five items representing each prototype.

Bartholomew and her colleagues have provided evidence relevant to the reliability and validity of RQ and RSQ prototype ratings and of RQ- and RSQ-derived ratings of the self-model and other-model dimensions hypothesized to underlie adult attachment. This evidence is presented below.

Reliability of the RQ and the RSQ. A limitation of the single-item RQ measure is that internal consistency cannot be evaluated. According to Griffin and Bartholomew (1994a), the internal consistencies of the RSQ prototype scores are "variable and at times quite low" (p. 27). In one sample, alpha coefficients ranged from .41 for the secure pattern to .70 for the dismissing pattern. As a caveat, Griffin and Bartholomew noted that the internal consistencies of the RSQ scales can be low because each subscale contains some items that tap the self-model dimension and some items that tap the other-model dimension. Bartholomew (1989, cited in Scharfe & Bartholomew, 1994) reported moderate test-retest reliability for the RQ prototypic attachment patterns over a 2-month period. The stability for the secure rating was .71, fearful was .64, preoccupied was .59, and dismissing was .49 (average stability coefficient was .61).

In a later study, Scharfe and Bartholomew (1994) found that RQ attachment ratings were somewhat less stable over 8 months. For females ($n = 72$), the test-retest correlation for the secure rating was .53, fearful was .58, preoccupied was .56, and dismissing was .45 (average stability coefficient was .53). For males ($n = 72$), the test-retest correlation for the secure rating was .39, fearful was .58, preoccupied was .49, and

dismissing was .51 (average stability coefficient was .49). The average test-retest correlation for the RQ self-report ratings (.51) was the same as that for subjects' RQ ratings based on reports from their partners (.51), and was comparable to that for ratings on Collins and Read's (1990) multi-item self-report attachment scales derived from the RSQ (.63) and to Bartholomew's (1989) reported stability for RQ ratings over 2 months (.61). However, the test-retest reliability of RQ self-report ratings was lower than the reliability of interview ratings of the attachment prototypes (average stability coefficient was .70).

To my knowledge there are no published data pertaining to test-retest correlations for the four attachment styles as measured with the RSQ. (Stein et al. [1998] reported RSQ test-retest correlations. But my reading of the literature suggests that these correlations pertain to the RQ, not the RSQ.)

Validity of the RQ and the RSQ. Convergent validity of the self-report prototype ratings of the RQ and the RSQ has been demonstrated through significant, albeit low correlations with interview prototype ratings of the semi-structured Peer Attachment Interview (Bartholomew & Horowitz, 1991). Bartholomew and Horowitz (1991) reported that the average correlation between corresponding attachment ratings across RQ self-reports and interview was .34, which was higher than the average correlation across RQ friend-reports and interview (.25; $N = 77$). More recently, Griffin and Bartholomew (1994a) reported low to low- moderate correlations between corresponding RQ self-report ratings and interview ratings. The correlation for the secure rating was .22, fearful was .50, preoccupied was .33, and dismissing was .40 (average correlation was .36; $N = 153$). Similar correlations between corresponding RSQ self-report ratings and interview

ratings were reported. The correlation for the secure pattern was .25, fearful was .32, preoccupied was .34, and dismissing was .47 (average correlation was .35; $N = 153$).

Griffin and Bartholomew noted that the modest magnitude of the convergent correlations indicates that the self-report and interview methods of measuring adult attachment patterns are "far from identical" (p. 29).

Griffin and Bartholomew (1994a) also examined convergent correlations ($n = 153$) at the dimensional level. For the RQ and RSQ self-report scales and the peer attachment interview ratings, self-model dimension scores were obtained by summing the ratings of the two attachment patterns hypothesized to represent positive self models (secure and dismissing) and subtracting the ratings of the two patterns hypothesized to represent negative self models (preoccupied and fearful). Similarly, other-model dimension scores were derived by summing the ratings of the two attachment patterns hypothesized to represent positive other models (secure and preoccupied) and subtracting the ratings of the two patterns hypothesized to represent negative other models (dismissing and fearful).

Relative to the convergent correlations at the prototype level, those at the dimensional level of analysis were somewhat higher. The RQ and the RSQ self-model dimension scores correlated .41 and .37, respectively, with the interview self-model, and the RQ and the RSQ other-model dimension scores correlated .46 and .48, respectively, with the interview other-model.

Two studies by Griffin and Bartholomew (1994b) provided evidence for both the convergent and discriminant validity of the RQ self-report measure of the self- and other-model attachment dimensions. In study 1 ($N = 69$), convergent validity was demonstrated

by the low to low-moderate correlations between the RQ measure of the self-model dimension and two semi-structured interview measures of the self-model, the Family Attachment Interview (Bartholomew & Horowitz, 1991; $r = .34$) and the Peer Attachment Interview (Bartholomew & Horowitz, 1991; $r = .39$); similarly, the RQ measure of the other-model dimension correlated .39 with the family interview other-model and .50 with the peer interview other-model. Discriminant validity was indicated by the very small correlation (.03) between the self-model and other-model dimensions as measured by the RQ.

In study 2 ($N = 77$), convergent validity was demonstrated by modest correlations between the RQ self-report measure of the self-model dimension and the peer interview self-model (.41) and the self-model as measured by friend-reports on the RQ (.34); similarly, the RQ measure of the other-model dimension correlated .48 with the peer interview other-model and .42 with the friend-report other-model. Discriminant validity was indicated by the minimal correlation (.12) between the self- and other-model dimensions as rated by the RQ.

Additional evidence of the convergent validity of the RQ self-report dimensional measure comes from its relationship with the RSQ. Griffin and Bartholomew (1994a) reported that the RQ and RSQ dimensional measures showed moderate convergent validity (convergent correlations were .58 for the self-model dimension and .57 for the other model-dimension; $N = 470$).

Griffin and Bartholomew (1994b) used structural equation modeling ($N = 77$) to demonstrate the construct validity of RQ self-reports of the self- and other-model attachment dimensions. The self-model dimension, which theoretically represents an

individual's sense of self-worth, highly predicted self-reports of subjects' self-concept (structural coefficient = .64), whereas the other-model dimension, which theoretically represents an individual's desire to seek or avoid closeness, highly predicted self- and friend-reports of subjects' interpersonal orientation (.69). The construct validity of the RQ self-report ratings was comparable with that of peer attachment interview ratings for both the self-model (.65) and other-model (.67) dimensions and with friend-reports on the RQ for the other-model dimension (.67).

The RQ self-report measure of the attachment dimensions also demonstrated construct validity through predictable and significant relationships with scales measuring dependency on others (Interpersonal Dependency Inventory; Hirschfeld et al., 1977). Griffin and Bartholomew (1994a) reported that the subscale measuring emotional reliance on others, which taps both a negative self-concept and a sense of trust, related negatively to the attachment self-model dimension of the RQ ($r = -.50$) and positively to the attachment other-model dimension of the RQ ($r = .23$). The subscale measuring assertion of autonomy, which taps a rejection of the need for others, related positively to the self-model dimension ($r = .33$) and negatively to the other-model dimension ($r = -.33$). The subscale measuring lack of social self-confidence, which taps feelings of uncertainty and insecurity in social relations, related negatively to the self-model dimension ($r = -.26$), although it was unrelated to the other-model dimension ($r = .04$).

Finally, evidence for the predictive validity of RQ self-report ratings for the self-model dimension was demonstrated through significant correlations with a measure of self-esteem, the Rosenberg Self-Esteem Inventory (Rosenberg, 1965). Griffin and Bartholomew (1994b) reported that for both men ($n = 72$) and women ($n = 74$), the RQ

self-report measure of the self-model dimension significantly predicted self-esteem 8 months later ($r_s = .31$ and $.32$, respectively). The RQ self-report ratings predicted later self-esteem at least as strongly as did men and women's peer attachment interview ratings ($r_s = .38$ and $.36$, respectively) and women's partner-reports on the RQ ($r = .30$).

Summary. There is substantially more published information on the RQ than the RSQ. Where psychometric comparisons can be made, results indicate that the two instruments are generally similar.

In terms of reliability, the RQ ratings of the four attachment prototypes generally show low-moderate test-retest stability. On average, RQ self-report ratings are as consistent as RQ ratings provided by subjects' partners, but are less consistent than interview ratings. No information is available concerning the temporal stability of RSQ ratings. However, the RSQ scales show (what appears to be) low-moderate internal consistency.

In terms of validity, the self-report prototype ratings of both the RQ and the RSQ converge with peer attachment interview ratings, although the correlations between corresponding ratings tend to be low. Convergent correlations are somewhat higher, however, when self- and other-model dimension scores are examined. The RQ and the RSQ self-report dimensional measures are themselves moderately correlated, further evidence pertinent to convergent validity. The RQ self-report dimensional measure shows discriminant validity in that the correlation between self-model and other-model dimension scores are relatively small. The self- and other-model dimensions of the RQ self-report are highly predictive of "self-concept" and "interpersonal orientation," respectively, evidence relevant to construct validity. Dimension scores derived from self-

reports on the RQ predict self-concept and interpersonal orientation as well as interview ratings and friend-reports on the RQ. RQ self-report attachment dimensions also correlate significantly (in the low to low-moderate range) with measures of dependency, further evidence relevant to construct validity. As well, the self-model dimension of the RQ self-report measure modestly predicts self-esteem measured 8 months later, evidence relevant to predictive validity. RQ self-report ratings are as strongly predictive of later self-esteem as are interview ratings and partner-reports on the RQ.

In this study, I explored the implications of the direct self-report prototype ratings of the four-pattern RQ for sexual working model variables and safer sexual behaviour. Also, in accord with Bartholomew's call for a variety of approaches to measuring adult attachment, and with an eye to investigating the convergence of self-report attachment measures, I used data from the indirect self-report prototype ratings of the multi-item RSQ in post-hoc analyses.

Sexual Working Models

Sexual working models were assessed using the Multidimensional Sexuality Questionnaire (MSQ; Snell, Fisher, & Walters, 1993) and the Affective and Motivational Orientation Related to Erotic Arousal Questionnaire (AMORE; Hill & Preston, 1996). Below, I discuss each of these questionnaires.

Multidimensional Sexuality Questionnaire (MSQ). The MSQ is a 60-item self-report measure of individual differences in psychological responses to sexual relations. The items of the MSQ are equally divided among 12 subscales: (a) Sexual-Esteem (e.g., "I am confident about myself as a sexual partner"); (b) Sexual-Preoccupation (e.g., "I think about sex all the time"); (c) Internal-Sexual-Control (e.g., "My sexuality is

something that I am largely responsible for"); (d) Sexual-Consciousness (e.g., "I am very aware of my sexual feelings"); (e) Sexual-Motivation (e.g., "I am very motivated to be sexually active"); (f) Sexual-Anxiety (e.g., "I feel anxious when I think about the sexual aspects of my life"); (g) Sexual-Assertiveness (e.g., "I am very assertive about the sexual aspects of my life"); (h) Sexual-Depression (e.g., "I am depressed about the sexual aspects of my life"); (i) External-Sexual-Control (e.g., "The sexual aspects of my life are determined mostly by chance happenings"); (j) Sexual-Monitoring (e.g., "I sometimes wonder what others think of the sexual aspects of my life"); (k) Fear-of-Sexual-Relationships (e.g., "I am somewhat afraid of becoming sexually involved with another person"); and (l) Sexual-Satisfaction (e.g., "I am very satisfied with the way my sexual needs are currently being met") (see Appendix D, p. 174). Subjects respond to each item on the questionnaire using a 5-point Likert scale ranging from *not at all characteristic of me* (0) to *very characteristic of me* (4). Subscale scores are obtained by summing responses across the items on each subscale (subscale range = 0 to 20). Higher scores correspond to greater amounts of each of the respective psychosexual tendencies.

Snell et al. (1993) provided preliminary evidence for the internal consistency, test-retest stability, and factorial, concurrent, convergent, and discriminant validity of the subscales of the MSQ. Data on the psychometric properties of the MSQ subscales were based on responses from three separate samples of undergraduates (total n for males = 234; total n for females = 423). The average age across participants was 21.8, with a range of 17 to 60. Responses from participants who had had a sexual relationship and those who had not were included in the data analyses. The results of Snell et al.'s psychometric study are presented below.

Reliability of the MSQ. As a measure of internal consistency, Cronbach alpha coefficients ranged from a low of .71 for the sexual-consciousness scale to a high of .94 for the sexual-preoccupation scale (average alpha = .85; N = 371); such values indicate a high degree of consistency among the items assigned to each scale.

Test-retest reliability over a 3-week period ranged from a low of .63 for internal-sexual-control to a high of .85 for sexual-esteem (average correlation = .72; N = 125).

See Table 2 (p. 73) for reliability results for the MSQ scales.

Validity of the MSQ. To confirm the 12 psychological dimensions assumed to underlie the MSQ, the 60 items of the MSQ were subjected to a confirmatory factor analysis. The factor analysis showed that eight of the 12 factors had eigenvalues greater than 1 and/or explained 5% or more of the variance (the usual criterion for identifying factor structure). Also, the items on some subscales, while loading substantially on their own appropriate factor, cross-loaded on other factors, though to a lesser degree. In short, there was some preliminary factorial-validity evidence for the 12 psychological tendencies purported to be assessed by the MSQ.

Concurrent validity of the MSQ subscales was demonstrated through correlations with self-report measures of attitudes, approaches, and behaviours that are related to sexuality. To begin, the MSQ was significantly associated with Hendrick and Hendrick's (1987) measure of sex attitudes (N = 369-376). Specifically, persons with more "permissive" attitudes toward sex reported a higher degree of sexual-preoccupation, sexual-motivation, and external-sexual-control ($r_s = .47, .42, \text{ and } .30.$, respectively). Those believing in "responsible and nonjudgmental" sex reported higher levels of sexual-consciousness, internal-sexual-control, and sexual-motivation ($r_s = .24, .21, \text{ and } .20$,

Table 2
Internal Consistencies and Test-Retest Reliabilities for the
Multidimensional Sexuality Questionnaire (MSQ) Scales*

MSQ Scales	Cronbach Alpha Coefficients	Test-Retest Reliabilities
1. Sexual-esteem	.87	.85
2. Sexual-preoccupation	.94	.73
3. Internal-sexual-control	.80	.63
4. Sexual-consciousness	.71	.75
5. Sexual-motivation	.91	.83
6. Sexual-anxiety	.83	.64
7. Sexual-assertiveness	.77	.65
8. Sexual-depression	.92	.70
9. External-sexual-control	.86	.68
10. Sexual-monitoring	.90	.69
11. Fear-of-sex	.82	.67
12. Sexual-satisfaction	.90	.76

*Snell, Fisher, and Walters (1993).

respectively). Those with more "idealized/communal" sex attitudes had higher sexual-consciousness and sexual-motivation scores ($r_s = .24$ and $.23$, respectively). Finally, individuals with more "manipulative/instrumental" views toward sex reported greater sexual-preoccupation, external-sexual-control, sexual-motivation, and sexual-anxiety ($r_s = .31$, $.27$, $.24$, and $.21$, respectively).

In addition, the MSQ was significantly associated with Hughes and Snell's (1990) measure of communal (i.e., mutual caring and concern) and exchange (i.e., quid pro quo) approaches toward sex ($N = 364$ -370). Specifically, an exchange approach toward sexual relations was positively associated with sexual-preoccupation, external-sexual-control, sexual-anxiety, sexual-depression, sexual-monitoring, and sexual-motivation (r_s ranged from $.11$ to $.32$); and negatively associated with sexual-satisfaction, internal-sexual-control, sexual-esteem, and sexual-consciousness (r_s ranged from $-.11$ to $-.18$). In contrast, individuals with a stronger communal approach toward their sexual relationships reported higher levels of sexual-consciousness, sexual-esteem, internal-sexual-control, sexual-motivation, sexual-assertiveness, sexual-satisfaction, and sexual-preoccupation (r_s ranged from $.10$ to $.42$).

Scores on the MSQ subscales also showed significant correlations with self-reports of sexual behaviours, as measured by both the Cowart-Steckler Scale of Sexual Experience (Cowart-Steckler & Pollack, 1988) and the Zuckerman Human Sexuality Questionnaire (Zuckerman, 1988) (heterosexual males, $n = 60$; heterosexual females, $n = 90$). The Scale of Sexual Experience consists of two gender-specific 30-item checklists of a variety of heterosexual sexual activities, ranging from reading "skin" magazines to observing a nude sex partner to having anal intercourse. The Human Sexuality

Questionnaire is a 14-item scale that measures cumulative heterosexual sexual experiences, ranging from kissing to sexual intercourse in various positions. Subjects who reported having a more extensive history of sexual experiences as measured by the above measures had greater sexual-esteem, sexual-motivation, and sexual-satisfaction (subscale rs with the Scale of Sexual Experience were .40, .59, and .29, respectively, among males, and .58, .50, and .41, respectively, among females; subscale rs with the Human Sexuality Questionnaire were .46, .56, and .37, respectively, among males, and .51, .37, and .42, respectively, among females), and less sexual-anxiety, sexual-depression, and external-sexual-control (subscale rs with the Scale of Sexual Experience were -.28, -.33, and -.23, respectively, among males, and -.24, -.33, and -.32, respectively, among females; subscale rs with the Human Sexuality Questionnaire were -.37, -.44, and -.33, respectively, among males, and -.27, -.40, and -.35, respectively, among females).

Dupras (1994) provided additional evidence concerning the concurrent validity of the MSQ. He reported that scores on seven of the MSQ subscales correlated significantly with those on a self-report measure of internalized homophobia, the Nungesser Homosexual Attitudes Inventory (Nungesser, 1983) (n for HIV-negative men = 173; n for HIV-positive men = 88). Results indicated that homosexual men who were less accepting of their homosexuality rated themselves higher on sexual-anxiety, sexual-depression, fear-of-sex, and sexual-monitoring (among HIV-negative men, r_s = .33, .24, .22, and .33, respectively; among HIV-positive men, r_s = .43, .38, .32, and .39, respectively) and lower on internal-sexual-control, sexual-esteem, and sexual-satisfaction (among HIV-negative men, r_s = -.29, -.26, and -.25, respectively; among HIV-positive men, r_s = -.25, -.35, and -.27, respectively).

In addition to being related to concurrent measures of sexual attitudes, approaches, and behaviour, the MSQ has been shown to distinguish groups known to differ in terms of sexual functioning. Dupras and Morisset (1993) evaluated the discriminative validity of the MSQ by examining whether psychosexual characteristics could distinguish HIV-positive homosexuals with sexual dysfunction ($n = 25$) from those who were functional ($n = 38$), as measured by the Sexual Function and Dysfunction Scale (Gellman, 1985). ANOVAS revealed that the sexually dysfunctional men had significantly higher scores than the functional men on the fear-of-sex subscale ($M_s = 2.35$ vs. 1.52 , respectively) and the sexual-depression subscale ($M_s = 1.59$ vs. 0.85 , respectively), and lower scores on the sexual-esteem subscale ($M_s = 2.48$ vs. 3.03 , respectively) and the sexual-assertiveness subscale (2.10 vs. 2.66 , respectively), $F_s \geq 2.93$, $p < .05$.

Convergent validity was demonstrated through correlations between MSQ subscales and subscales on the Sexuality Scale (Snell & Papini, 1989) and on the Sexual Awareness Questionnaire (Snell, Fisher, & Miller, 1991), two earlier developed instruments designed to assess dispositional tendencies associated with human sexuality. Six of the MSQ subscales were derived from these measures. Snell et al. (1993) reported that, as expected, the sexual-esteem, sexual-depression, and sexual-preoccupation subscales from the MSQ and the Sexuality Scale were positively and substantially correlated ($r_s = .72$, $.76$, and $.70$, respectively; $N = 372$ -376). Also, the sexual-consciousness, sexual-monitoring, and sexual-assertiveness subscales from the MSQ and the Sexual Awareness Questionnaire were strongly associated ($r_s = .73$, $.43$, and $.83$, respectively; $N = 373$ -376), suggesting that the respective scales are conceptually similar.

Discriminant validity of the MSQ subscales was established through the lack of correlations with social desirability, as measured by the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1961) (n for men = 57; n for women = 68). Snell et al. (1993) reported that when the 12 subscales on the MSQ were correlated with social desirability, only a few correlation coefficients were significant: Social desirability was negatively associated with sexual-motivation (among men, $r = -.33$; among women, $r = -.26$; among men and women, $r = -.29$). Additionally, social desirability was negatively correlated with sexual- depression and sexual-monitoring among women ($r_s = -.31$ and $-.26$, respectively). However, these correlations reportedly explained less than 11% of the possible variance, suggesting that the subscales of the MSQ are largely independent of social desirability.

Summary. There is relatively strong evidence for the discriminant validity of the MSQ: Only a few of the correlations between the MSQ subscales and a measure of sociability were significant, and these were low in magnitude. There is moderately strong evidence for internal and test-retest reliability and convergent validity: The majority of the reliability coefficients were consistently moderate in magnitude, as were the correlations between the MSQ subscales and other subscales conceptually similar to the MSQ. There is modest evidence for concurrent validity: The majority of the correlations between the subscales of the MSQ and concurrent measures of sexual attitudes, orientation, and behaviour were relatively low in magnitude. Together, the available evidence suggests adequate reliability and validity to make the MSQ useful in this study.

Affective and Motivational Orientation Related to Erotic Arousal Questionnaire (AMORE). The AMORE is a 62-item self-report measure of individual differences in

sexual motivation. The items of the AMORE are divided among eight subscales, each representing a different reason for interest in sex: (a) Experiencing the Power of One's Partner (10 items, e.g., "I often find it a real turn-on when my partner takes charge and becomes authoritative during sexual activity or fantasy"); (b) Emotional Value for One's Partner (8 items, e.g., "Sharing affection and love during sexual intercourse is one of the most intense and rewarding ways of expressing my concern for my partner"); (c) Relief from Stress (10 items, e.g., "Many times when I am feeling unhappy or depressed, thinking about sex or engaging in sexual activity will make me feel better"); (d) Procreation (6 items, e.g., "One of the main reasons I am interested in sex is for the purpose of having children"); (e) Enhancement of Power (10 items, e.g., "I really enjoy having sex as a way of exerting dominance and control over my partner"); (f) Emotionally Valued by One's Partner (7 items, e.g., "Often when I need to feel loved, I have the desire to relate to my partner sexually because sexual intimacy really makes me feel warm and cared for"); (g) Nurturance (6 items, e.g., "Often the most pleasurable sex I have is when it helps my partner forget about his or her problems and enjoy life a little more"); and (h) Pleasure (5 items, e.g., "The sensations of physical pleasure and release are major reasons that sexual activity and fantasy are so important to me") (see Appendix E, p. 179).

Subjects respond to each item on the questionnaire using a 5-point Likert scale ranging from *not at all true* (1) to *completely true* (5). Respondents are instructed to indicate how true or descriptive each statement is of them. Subscale scores are obtained by adding the raw scores for all items assigned to a given subscale. Higher scores represent greater interest in, greater arousability in response to, and greater satisfaction with a type of incentive associated with a proposed sexual motive.

Hill and Preston (1996) provided descriptive statistics and preliminary evidence for the internal consistency, test-retest stability, and factorial, concurrent, convergent, and discriminant validity of the subscales of the AMORE. The psychometric data for the AMORE subscales were based on responses from three separate samples of undergraduates (total n for men = 550; total n for women = 1034). The average age across participants was 23.2, with an average of 37.1% being older than 21. The results of Hill and Preston's psychometric study are presented below.

Reliability of the AMORE. Internal consistency coefficients (Cronbach alphas) ranged from .76 for the Procreation subscale to .93 for the Relief from Stress and Power of Partner subscales, with the average alpha being .87 (N = 586); such values indicate a high degree of consistency among the items assigned to each scale.

Preliminary data based on 21 respondents suggest adequate stability of scores across a 2- to 4-week period. Test-retest correlations were greater than .82 for all subscales except the Procreation subscale, for which the stability coefficient was .73.

Validity of the AMORE. The results of three different principal components factor analyses strongly supported the original assignment of items to particular sexual motives and, more importantly, the eight dimensions hypothesized to represent dispositional sexual motives.

The AMORE subscales were significantly correlated with six personality measures assessing constructs hypothesized to be generally related to sexual motivation, evidence relevant to convergent validity. To begin, the AMORE subscales (the exception was the Value for Partner subscale) were predictably correlated with the Sexual Opinion Survey (Fisher, Byrne, White, & Kelley, 1988; n = 401), a measure of negative versus

positive feelings toward sex; with the Sociosexual Orientation Inventory (Simpson & Gangestad, 1991; $n = 401$), a measure of restricted versus unrestricted attitudes toward engaging in uncommitted sex; and with the Disinhibition subscale of the Sensation Seeking Scale (Zuckerman, 1979; $n = 185$), a measure of preference for arousing stimuli. Correlations between the AMORE subscales and the above self-report measures of general openness to sexual or sensual experience were generally modest, ranging from .12 to .42 (average $r = .24$). As anticipated, the Procreation scale was negatively correlated with the above measures ($r_s = -.19, -.12$, and $-.24$, respectively).

Scores on the Stress Relief, Power, and Partner Power subscales were also positively correlated with the Boredom Susceptibility subscale of the Sensation Seeking Scale (Zuckerman, 1979; $r_s = .28, .31$, and $.29$, respectively; $n = 185$).

In addition, all AMORE subscales, with the exception of the Procreation subscale, correlated significantly with need for attention, as measured by the Attention subscale of the Interpersonal Orientation Scale (Hill, 1987). Ranging from .15 to .36 ($n = 401$), the correlations suggest that individuals with greater attention needs may have an enhanced interest in sexual interaction.

As predicted, only the Value for Partner and Nurturance subscales were significantly positively correlated with a measure of interpersonal sensitivity and caring toward others, the Expressivity subscale of the Personal Attributes Questionnaire (Spence, Helmreich, & Stapp, 1974). The correlations were low (.14 and .10, respectively; $n = 401$), however.

Consistent with expectations, the Power and Partner Power subscales were correlated most strongly with aggression tendencies, as measured by the Hostility ($r_s =$

.35 and .27, respectively) and Physical Aggression subscales ($r_s = .22$ and $.24$, respectively) of the Aggression Questionnaire (Buss & Perry, 1992; $n = 185$).

Overall, the AMORE Power, Partner Power, and Relief from Stress subscales were most consistently correlated with the six established personality measures theoretically related to sexual motives. In contrast, the Procreation subscale correlated with relatively few of the related measures.

Additional convergent validity evidence was also provided for the AMORE subscales in that each of the subscales, with the exception of the Procreation subscale ($r = -.14$), was positively correlated with a measure of general sexual desire, the Sexual Desire Scale. The Sexual Desire Scale was constructed by Hill and Preston (1996) to provide information about the typical frequency and intensity of sexual desire (Cronbach alpha = .84; $N = 482$). Correlations with the sexual desire ratings were moderate, ranging from .24 to .50, with most of the correlations being greater than .30.

Finally, positive correlations between sexual motive subscales and self-ratings of the likelihood of engaging in motive-relevant sexual behaviour likewise provided support for the convergent validity of the AMORE. The likelihood ratings were made on a 5-point Likert rating scale constructed by Hill and Preston (1996). Data were analyzed using regression models that employed the AMORE subscales, the Sexual Desire Scale, and various personal characteristics (e.g., gender, relationship status) as predictors of sexual behaviour. Consistent with expectations, the Value for Partner (beta coefficient = .23) subscale was positively associated with ratings of the likelihood of engaging in sensual, romantic lovemaking with one's partner; the Pleasure (beta coefficient = .29) subscale was most highly related to ratings of the likelihood of engaging in wild, abandoned,

pleasure-oriented sexual activity with one's partner; and the Power and Partner Power (beta coefficients = .39 and .38, respectively) subscales were most highly predictive of ratings of the likelihood of engaging in forceful, aggressive sexual behaviour with one's partner. These relationships provide support for the different focus of each sexual motive type, evidence also relevant to construct validity.

Evidence was provided for the discriminant validity of the AMORE subscales through their overall nonsignificant correlations with self-report measures assessing aspects of personality theoretically unrelated to the construct of sexual motivation. The unrelated measures included (a) a measure of interpersonal skill or social competence, the Interpersonal Skill subscale of the Interpersonal Orientation Scale (Hill, 1987; $n = 401$); (b) a scale assessing assertiveness and self-reliance, the Instrumentality subscale of the Personal Attributes Questionnaire (Spence et al., 1974; $n = 401$); (c) two measures of achievement motivation, the Mastery and Competitiveness subscales of the Work and Family Orientation Scale (Spence & Helmreich, 1978; $n = 185$); and (d) a measure of social desirability, the revised form of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964), the 13-item Form C (Reynolds, 1982; $n = 185$).

Concerning the Social Desirability Scale, unexpected significant negative correlations occurred with three AMORE scales involving gratification largely focused on oneself--the desire to feel emotionally valued by one's partner, the desire to experience relief from stress for oneself, and the desire to enhance one's feelings of power--although the correlations were relatively low ($-.21$, $-.17$, and $-.18$, respectively; $n = 185$). Thus, there is relatively little social desirability influence on the responses to the AMORE.

Concurrent validity of the AMORE sexual motive subscales was demonstrated through significant correlations with self-reports of sexual behaviour and self-reports of contraception/protection use. Information about these behaviour variables was obtained using a questionnaire developed by Hill and Preston (1996). The data were analyzed using regression analyses that employed the AMORE subscales, the Sexual Desire Scale, and various personal characteristics as predictors of sexual and contraceptive/protective behaviour. With respect to sexual behaviour ($N = 482$), the Value for Partner (beta coefficient = .10), Nurturance (beta coefficient = .14), and Pleasure (beta coefficient = .10) subscales were all significantly positively associated with an increased likelihood of having ever engaged in penile-vaginal, oral-genital, or penile-anal intercourse. The Value for Partner and Nurturance subscales were positively associated with greater likelihood of having engaged in oral-genital intercourse in the last year (beta coefficients = .58 and .64, respectively). The Partner Power subscale was positively associated with greater likelihood of having engaged in penile-anal intercourse in the last year (beta coefficient = .12). The Power subscale was positively associated with an increased likelihood of having engaged in penile-vaginal intercourse in the last year (beta coefficient = .10). While a number of AMORE subscales were related to the prevalence of sexual behaviour (i.e., whether participants had ever experienced any of the three types of sexual intercourse), only the Relief from Stress subscale (beta coefficient = .18; $N = 190$) was related to the frequency of sexual behaviour—specifically, the frequency of masturbation in the last year.

Concerning the relationship of sexual motives to contraceptive/protective behaviour (an issue that is relevant to my study), the Value for Partner and Nurturance

subscales were negatively associated with the frequency of condom use in general (beta coefficients = $-.11$ and $-.09$, respectively; $N = 457$). The Value for Partner scale was also negatively associated with the use of the pill or IUD's in general (beta coefficient = $-.40$; $N = 457$). The frequency of using the rhythm method or withdrawal in the last year was associated with higher scores on the Pleasure and Procreation subscales (beta coefficients = $.25$ and $.82$, respectively; $N = 136$). Frequency of using nothing for protection in general was negatively associated with the Pleasure subscale (beta coefficient = $-.49$; $N = 457$). The use of nothing for protection in the last year was positively associated with the Nurturance subscale (beta coefficient = $.23$; $N = 136$). Thus, the Value for Partner, Nurturance, Pleasure, and Procreation subscales were associated with substantially risky sexual behaviours--lower frequency of using condoms, the pill, or IUDs, as well as greater frequency of using the rhythm method, withdrawal, or no protection at all.

Summary. The evidence supporting the psychometric adequacy of the AMORE subscales is good but varies somewhat in strength across different types of reliability and validity. There is moderately strong evidence for internal and test-retest reliability: Alpha coefficients were consistently moderate in magnitude as were the test-retest coefficients. There is relatively strong evidence for discriminant validity: Only a few of the correlations between the AMORE subscales and five measures of theoretically unrelated constructs, including social desirability, were significant, and these were low in magnitude. There is relatively modest evidence for convergent and concurrent validity: The correlations between the AMORE subscales and other measures of constructs theoretically related to the AMORE sexual motive subscales were significant but generally low in magnitude; likewise, the regression coefficients for the subscales of the

AMORE as predictors of sexual behaviour and contraception/protection use were significant but generally of low magnitude.

Perhaps most important with respect to this study is that, on the whole, the psychometric data for the AMORE subscales provide support for a relationship between sexual motives and attachment-relevant issues (e.g., affection between people, need for attention, feeling valued, a sense of well-being, interpersonal power), and between sexual motives and safer sexual behaviour (e.g., use of condoms). Thus, the AMORE seems like a useful tool for investigating whether sexual working models (including dispositional sexual motives) play a role in mediating the proposed relationship between attachment style and protective sexual behaviour.

Safer Sexual Behaviour

Safer sexual behaviour was measured using a revised version of the Safer Sex Behaviour (SSB) scale developed by Uddin (1996: see Appendix F, p. 186). The original SSB scale is a 6-item self-report measure of protective sexual behaviours. Subjects respond to each item on the scale using a 7-point Likert scale ranging from *strongly agree* (1) to *strongly disagree* (7). A not-applicable category also is included. Respondents are instructed to report the degree to which they have engaged in the various safer sex practices during the past year. A mean score for the scale is computed from a summation of raw scores for the six items. Lower scores represent more consistency in practising safer sex.

Uddin (1996) provided descriptive statistics for the SSB scale and data relevant to its reliability and validity. The findings are based on responses from a sample of 238 predominantly white, unmarried, heterosexual, undergraduate women. Information

relating to the psychometric properties of the SSB scale is presented below.

A reliability coefficient of .54 for the SSB scale was reported. Presumably, this is an estimate of the internal consistency (Cronbach alpha) of the scale, given that the scale was administered only once. The value of the internal reliability coefficient indicates a relatively low degree of intercorrelation among the items of the scale.

Scores on the SSB scale reliably distinguished women with high perceived self-efficacy (i.e., confidence in one's ability) to engage in safer sexual behaviour from those with low perceived self-efficacy, evidence relevant to discriminative validity. As hypothesized, women ($n = 102$) with high levels of perceived self-efficacy had significantly lower scores on the SSB scale (i.e., practiced safer sex more consistently) than those ($n = 109$) with low levels of perceived self-efficacy ($M_s = 3.00$ vs. 3.37 , respectively, $t = 2.17$, $p < .05$).

Interestingly, the original finding of a significant difference between high and low perceived self-efficacy groups in terms of safer sex behaviour washed out when participants' relationship status was taken into account. The lack of significant differences between any of the groups (i.e., high perceived self-efficacy and not involved in a committed relationship [$n = 43$]; high perceived self-efficacy and involved in a committed relationship [$n = 58$]; low perceived self-efficacy and not involved in a committed relationship [$n = 55$]; low perceived self-efficacy and involved in a committed relationship [$n = 54$]) hints that relational factors may play a role in influencing people to practice safer sex. In Uddin's (1996) words, "Although an individual may judge her ability to practice safer sex to be quite good, the fact that she is in a committed relationship may give her a [false] sense of security and protection from the possibility of

sexually contracting HIV" (p. 259). Likewise, a study by Morrill, Ickovics, Golubchikov, Beren, and Rodin (1996) found that women who were in more involved relationships were significantly more likely to engage in unprotected intercourse. The above findings indicate, then, that "women accommodate their safer sex behaviour depending on the nature of their relationship" (Morrill et al., 1996, p. 826) with a partner. This notion suggests that relationship status needs to be controlled for when addressing how attachment style (dispositional feelings of trust and security within close relationships) relates to safer sexual behaviour.

For use in this study, I revised the SSB scale by changing the response format, by clarifying the meaning of some words, and by increasing the number of items relevant to safer sex behaviour (i.e., content validity). First, I changed the response format so that it had a behavioural focus rather than an attitudinal focus. Specifically, I changed the format of the 7-point Likert scale from "strongly agree....strongly disagree" to "always...never." I felt that the revised format (i.e., always [1], almost always [2], very often [3], somewhat frequently [4], occasionally [5], rarely [6], and never [7]) would be more relevant to the extent to which one practices safer sex than the previous format. I also included a not-applicable category. I coded not-applicable responses as zeros (0). I reasoned that not-applicable responses imply safer sex behaviour in that participants had not had sex within the past year, were involved in exclusive sexual relationships during the past year, or had not engaged in specific sexual activities (e.g., oral or anal intercourse).

In order to accent the importance of being proactive in terms of sexual health, I changed the second item to read as follows: "Prior to engaging in sex, I have intentionally questioned my partner(s) about their sexual history."

In order to clarify the meaning of "safer sex" and to accommodate both male and female respondents, I modified the third item on the SSB scale as follows: "I have delayed sex until I knew my partner(s) well enough to practice safer sex (e.g., use condoms) with them."

In order to clarify that anal and oral intercourse also place persons at risk for contracting HIV/STDs and to provide an additional example of a less risky sexual activity, I modified the fourth item on the SSB scale as follows: "I have limited my sexual activity to practices that are known to be less risky than vaginal, anal, and oral intercourse (e.g., heavy petting, mutual masturbation)."

In order to improve the content validity of the SSB scale, I introduced six items pertaining to safer sex practices that have been identified in the HIV/STD literature. Two of the items expanded upon the second item on the SSB scale: "Prior to engaging in sex, I have intentionally questioned my partner(s) about whether they are infected with HIV" and "Prior to engaging in sex, I have intentionally questioned my partner(s) about their history of being infected with other sexually transmitted diseases (STDs)." The third item pertains to HIV/STD testing as a safer sex practice: "Prior to engaging in sex, I have requested my partner(s) to have an HIV/STD test." The fourth item concerns abstaining from sex as a safer sex practice: "I have abstained from sex as a way of reducing the risk of contracting HIV/STDs." The fifth item pertains to limiting alcohol and drug use with sexual activity as a safer-sex technique: "I have limited my use of alcohol and drugs before engaging in sexual activities." The sixth item pertains to condom use when involved in anal sex: "I have used condoms when engaging in anal sex."

Summary. In summary, although internal reliability (.54) and discriminative validity have been demonstrated, I altered the SSB scale for use in this study (i.e., changed the response format, introduced minor word changes to three items, and added six new items) with the intention of improving the content validity and increasing the internal consistency of the scale.

Pilot study. I piloted the revised SSB scale prior to using it in the actual study. Participants twice completed the scale, with a 2-week interval between administrations. On the first administration of the scale, internal consistency reliability as measured by coefficient alpha was .75 ($N = 22$). On the second administration of the scale, coefficient alpha was .81 ($n = 16$). Thus, the internal reliability of the revised SSB scale was higher than that of the original SSB scale (.54) and appears to be a fairly good measure of the degree to which young adults practice safer sex.

The revised SSB scale showed moderate test-retest reliability ($r = .55$; $n = 13$). Given the internal consistency reliabilities of the scale at Time 1 and Time 2 (.75 and .81, respectively), the test-retest correlation one would expect psychometrically is .61—thus, .55 is quite respectable given the internal consistencies.

The revised SSB scale correlated negatively and modestly with a measure of social desirability ($-.36$; $N = 22$), suggesting relatively little social desirability influence on the responses to the SSB scale.

Data Analysis

Two fundamental questions guided my research: (a) Does attachment style relate to safer sexual activity? (b) If so, do attitudes, feelings, and motives regarding sexuality (i.e., “working models” of sexuality) explain or “mediate” the relationship? If, as

hypothesized, sexual working models do mediate a relation between attachment style and safer sex behaviour, then (a) attachment style must be significantly associated with sexual working models, (b) attachment style must be significantly associated with safer sex behaviour, (c) working models of sexuality must be significantly related to safer sex behaviour, and (d) the association between attachment style and the practice of safer sex is less after controlling for sexual working models (see Baron & Kenny, 1986, and Holmbeck, 1997, for a discussion of conceptual and statistical issues relevant to "mediator" variables).

The first set of analyses reported in this study is a principal components analysis (PCA) that was performed on the 20 sexual working model variables drawn from the subscales of the MSQ and the AMORE. The PCA was conducted in an attempt to reduce the 20 variables into a smaller set of sexual working model "components," the hypothesized mediators.

Presented next are sets of three standard multiple regression analyses that were performed on each component of sexual working models (see Eckenrode, Rowe, Laird, & Brathwaite, 1995, and Keelan, Dion, & Dion, 1998, for examples of this data-analytic strategy). This strategy, used to test the four conditions above, is similar to that used when conducting a path analysis (Cohen & Cohen, 1983). Each set of analyses was repeated whereby each attachment style (dismissing, preoccupied, fearful, secure) served as a predictor variable. In the first regression equation, attachment style was used as a predictor of sexual working models, the hypothesized mediators (the significance of the relationship was a test of Condition 1 above). In the second regression equation, attachment style was used as a predictor of safer sex behaviour, the criterion (the

significance of the relationship was a test of Condition 2 above). In the third equation, attachment style and working models of sexuality were used simultaneously as predictors of safer sex behaviour (the significance of the relation between sexual working models and safer sex behaviour in the third equation [when attachment style was controlled] was a test of Condition 3). The strength of the association between attachment style and safer sex behaviour in the third equation (when sexual working models were controlled) relative to that in the second equation (when sexual working models were not controlled) was a test of Condition 4. Specifically, attachment style should be less strongly associated with the practice of safer sex in the third equation compared to that in the second equation.

For all regression analyses, gender and length of time in relationship were included as predictors to control for sex differences and degree of relationship commitment, respectively, in sexual working models and safer sexual activity.

To compare the various regression analyses and to assess the models shown in Figures 3 and 4 (see p. 58) the results of the analyses were used to develop path diagrams of the relations involved in predicting safer sexual behavior (see Fenney & Ryan, 1995, for an example that includes figures as well as an explanation of this procedure).

The above analyses were performed on data derived from the single-item RQ. For purposes of convergent validity, exploratory post-hoc analyses were conducted on data derived from the multi-item RSQ.

Results

Screening Data

Prior to analysis, 27 variables (styles of attachment, psychological sexual tendencies, dispositional sexual motives, safer sex behavior, gender, and length of time in relationship) were examined through various SPSS 8.0 programs for accuracy of data input, missing data, univariate and multivariate outliers, non-normality, and non-linearity.

The minimum and maximum values for each of the variables were within range, and the means and standard deviations likewise were reasonable.

There were 202 (82%) cases with complete data and 43 (18%) cases with incomplete data. In total, 60 data points were missing--.1% of the entire data set. In an attempt to preserve individual differences among respondents, missing scores on a particular scale were replaced with the mean of the remaining scale items (versus the group mean).

Standardized scores were calculated for each variable. Cases with standardized scores less than or greater than 3.29 were considered potential univariate outliers (Tabachnick & Fidell, 1996, p. 67). Standardized scores revealed six outliers in four different variables (one in MSQ External-Sexual-Control, one in MSQ Sexual-Monitoring, one in AMORE Procreation, and three in length of time in relationship). As a way of reducing the influence of these outliers, scores on the variables were changed by assigning outlying cases raw scores that were one unit larger than the next most extreme

score in the distribution. In pulling in the univariate outliers, the normality of the variables, as assessed by skewness and kurtosis, generally improved. For example, skewness reduced from 1.007 to .988 and kurtosis reduced from .373 to .283 for MSQ External-Sexual-Control; skewness reduced from .650 to .559 and kurtosis increased from -.295 to -.714 for MSQ Sexual-Monitoring; skewness reduced from 1.165 to 1.081 and kurtosis reduced from 1.283 to .820 for AMORE Procreation; and skewness reduced from 1.815 to 1.217 and kurtosis reduced from 4.686 to .649 for length of time in relationship.

The entire data set was screened for normality. Frequency distributions revealed that four variables departed from normality, having skewness or kurtosis values greater than 1: RQ Fearful attachment showed negative kurtosis (-1.165), RQ Dismissing attachment showed negative kurtosis (-1.068), AMORE Procreation showed positive skewness (1.081), and length of time in relationship showed positive skewness (1.217). Because these variables showed relatively minor deviations from normality, it was decided to retain these variables in their original form rather than transform them, a procedure that might have increased difficulty in interpretation.

Tabachnick and Fidell (1996, p. 78) have recommended a rough assessment of linearity and homoscedasticity through inspection of bivariate scatterplots. Examining scatterplots of all possible pairs of 27 variables (about 350 plots) would have been impractical. Therefore, statistics on skewness were used to choose two variables whose plot was expected to be among the worst--AMORE Procreation which showed departure from normality (skewness = 1.081) and RQ Secure attachment style which was reasonably normally distributed (skewness = -.447). While the overall shape of the

scatterplot was not perfectly oval, showing departure from linearity as well as homoscedasticity (RQ Secure attachment scores were more variable at low than high values on the AMORE variable), there was no evidence for true curvilinearity. Again, for ease of interpretation, transformations were not conducted.

Multivariate outliers were identified by computation of Mahalanobis distance for each case. Mahalanobis distance is evaluated as a chi-square variable with degrees of freedom equal to the number of variables, in this case 27, and $p = .001$. Three cases had a Mahalanobis distance greater than the critical chi-square value of 55.476. The three cases were deleted one at a time and each time cases were screened again for new outliers. No new outliers were identified, leaving 242 cases for analysis.

In sum, the results of the analyses reported below are based on untransformed data with identified univariate outliers changed and multivariate outliers deleted.

Principal Components Analysis

The purpose of this study was to examine whether attachment style and safer sex behaviour are related and, if so, whether the relationship is attributable potentially to the mediational effect of sexual working models. In order to reduce the number of mediators considered, a principal components analysis (PCA) was conducted prior to multiple regression analyses. Tabachnick and Fidell (1996) state: "PCA is the solution of choice for the researcher who is primarily interested in reducing a large number of variables down to a smaller number of components" (p. 664). In simplifying a collection of variables, PCA also helps to minimize the possibility of multicollinearity, that is, very high correlations between variables that destabilize the multiple regression equation. In order to summarize the data set, PCA uses 1 as initial estimates of communality

(communality for a variable is the variance accounted for by the components) and analyzes the common, unique, and error variance within a given data set and distributes it to a smaller set of components.

Specifically, the 12 self-report scales reflecting psychosexual processes (sexual esteem, sexual preoccupation, internal sexual control, sexual consciousness, sexual motivation, sexual anxiety, sexual assertiveness, sexual depression, external sexual control, sexual monitoring, fear of sex, sexual satisfaction) and the eight self-report scales reflecting different reasons for interest in sex (desire for feeling valued by one's partner, desire for showing value for one's partner, interest in obtaining relief from stress, arousability in response to providing nurturance to one's partner, desire for enhancing feelings of personal power, interest in experiencing the power of one's partner, desire for experiencing physical pleasure, and satisfaction in procreating) were subjected to a PCA with varimax rotation. An advantage of conducting orthogonal rotations using a varimax procedure is the extraction of components that are uncorrelated, resulting in conceptually simpler (more interpretable) structures from which component scores can be derived and used to enhance subsequent analyses (Tabachnick & Fidell, 1996, Chapter 13).

Using the criterion of an eigenvalue greater than 1 to determine the number of components to retain, the analysis extracted five rotated components. However, the fifth component was defined by just one variable, namely, the AMORE Procreation scale. As components defined by only one variable are poorly defined and unreliable, a second PCA was run in which four components were specified. The fourth component in this analysis was defined by the AMORE Procreation scale alone. Also, the components were more difficult to interpret compared to those of the original PCA. Consequently, a third

PCA was performed in which three components were specified. In this analysis, several variables loaded on each component (the AMORE Procreation scale did not load highly on any of the components). However, the extraction of fewer components made the components more complex and less interpretable. For ease of interpretation, and because the AMORE Procreation scale was unrelated to the other scales in the set (an outlier among variables), it was decided to leave out the Procreation scale in the PCA. (The variable was included as a stand-alone variable in subsequent analyses, however.) A final PCA that specified four components was then conducted. The analysis extracted the four rotated components shown in Table 3 (see p. 97). The four components together accounted for a total of 65.26 % of the variance in the 19 sexual-working-model scales.

The criterion for including variables in a given component was a rotated loading of .50 or greater. The first component, labelled "negative sexual affect," included the following seven indices: sexual anxiety, sexual depression, lack of personal agency in sexual matters, concern about what others think of one's sexuality, sexual dissatisfaction, fear of sex, and being obsessed with sex. The second component, labelled "sexual confidence," concerned the following six indices: awareness of one's sexuality, sexual esteem, desire for sexual involvement, sexual assertiveness, sexual satisfaction, and being in charge of one's sexuality. The third component, labelled "sexual power/control," consisted of four variables reflecting dominance and gratification: arousability in response to experiencing the power of one's sexual partner, desire to enhance one's sense of power through sex, interest in obtaining relief from stress through sexual activity or fantasy, and tendency to be engrossed with thoughts about sex. The fourth component, labelled "sexual intimacy/pleasure," consisted of four variables reflecting interpersonal

Table 3

Varimax Rotated Loadings and Components of the Sexual Working Model Measures (N = 242)

Measures	Negative Sexual Affect	Sexual Confidence	Sexual Power/Control	Sexual Intimacy/Pleasure
Sexual Anxiety ^M	.87*	-.13	.08	.10
Sexual Depression ^M	.81*	-.36	.07	.04
External Sexual Control ^M	.76*	.07	.24	.01
Sexual Monitoring ^M	.64*	-.01	.17	-.03
Sexual Satisfaction ^M	-.59*	.50*	-.10	.10
Fear of Sex ^M	.54*	-.43	-.22	.07
Sexual Consciousness ^M	.05	.78*	.08	.20
Sexual Esteem ^M	-.37	.63*	.26	.11
Sexual Motivation ^M	.21	.60*	.43	.21
Sexual Assertiveness ^M	-.28	.57*	.13	-.01
Internal Sexual Control ^M	-.26	.50*	-.25	.32
Experiencing Partner's Power ^A	.20	.10	.81*	.12
Enhancement of Power ^A	.01	.11	.78*	.26
Relief from Stress ^A	.38	.10	.57*	.48
Sexual Preoccupation ^M	.50*	.39	.56*	.12
Emotional Value for One's Partner ^A	-.11	.25	-.08	.85*
Providing Nurturance ^A	.12	.04	.39	.77*
Emotionally Valued by One's Partner ^A	.08	.03	.44	.71*
Pleasure ^A	.00	.41	.41	.57*
Eigenvalues	3.85	2.94	2.92	2.69
Proportion of Variance	20.25	15.47	15.38	14.17

* Measures defining a component. ^M Denotes a MSQ subscale. ^A Denotes an AMORE subscale.

sensitivity and pleasure: desire to show emotional closeness for one's partner, desire to emotionally nurture one's partner. interest in feeling emotionally valued by one's partner. and wanting to experience the sensations of physical pleasure and release.

In order to create component scores for use in the mediational analyses, the SPSS regression method of estimating component scores was used. The advantage of the regression approach is that it weighs scores on variables that define each component in accordance with the relative loading of each variable. This approach produces composite scores that are more representative than those, for example, produced by simply summing z-scores on measures that load highly on each component. These composite scores^{*} served as mediator variables in the mediational analyses. Internal reliability coefficient was .83 (alpha) for the seven-variable negative sexual affect component, 0.74 for the six-variable sexual confidence component, 0.81 for the four-variable sexual power/control component, and 0.81 for the four-variable sexual intimacy/pleasure component. Average intervariable correlations for these components were 0.42, 0.34, 0.55, and 0.55, respectively. (Coefficient alpha for the AMORE Procreation scale was 0.68. Average interitem correlations for this scale was 0.32.)

Table 4 (see p. 99) shows the intercorrelations, descriptive statistics, and alpha coefficients for the component variables and other variables used in subsequent analyses. Note the high correlations between the corresponding attachment patterns of the RQ and the RSQ, which suggest convergence between the measures.

^{*} In forming composite scores, it is important to note that the score on the sexual-satisfaction scale, which loaded negatively on the first component, was reversed in order to be parallel with the other measures of sexuality, such that low scores became indicative of greater satisfaction concerning sexual relations.

Table 4

Correlations, Descriptive Statistics, and Alpha Coefficients for Variables (N =242)

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. RQ Dismissing Attachment	-															
2. RQ Preoccupied Attachment	-.14*	-														
3. RQ Fearful Attachment	.00	.17**	-													
4. RQ Secure Attachment	-.18**	-.16**	-.54**	-												
5. Negative Sexual Affect	-.04	.23**	.20**	.20**	-											
6. Sexual Confidence	.01	-.11	-.19**	.23**	.00	-										
7. Sexual Power/Control	.13*	.05	.01	-.09	.00	.00	-									
8. Sexual Intimacy/Pleasure	-.09	.15*	-.06	.18**	.00	.00	.00	-								
9. Procreation Scale	.05	.09	-.04	-.04	.18**	-.12	.05	-.02	-							
10. Safer Sex Behaviour	.10	.07	.05	-.17*	.19**	.15*	.29**	-.08	-.06	-						
11. Gender (1 = female, 2 = male)	.17**	.03	-.04	-.03	.30**	.07	.32**	.00	.13*	.21**	-					
12. Time in Relationship	-.03	-.12	-.10	.04	-.38**	.03	-.14*	-.08	-.10	-.20**	-.23**	-				
13. RSQ Dismissing Attachment	.58**	-.08	.10	.25**	.00	-.03	.09	-.05	-.01	.04	.18**	-.06	-			
14. RSQ Preoccupied Attachment	-.35**	.53**	.24**	-.05	.32**	-.03	.04	.20**	.04	.01	-.07	-.13*	-.32**	-		
15. RSQ Fearful Attachment	.18**	.14*	.59**	-.57**	.26**	-.34**	.08	-.09	.08	.10	.07	-.15*	.32**	.14*	-	
16. RSQ Secure Attachment	-.04	-.10	-.51**	.60**	-.33**	.39**	-.06	.07	-.09	-.12	.02	.07	-.19**	-.14*	-.62**	-
M	3.51	3.03	3.46	4.84	40.18	74.89	83.71	83.44	9.74	39.41	1.40	15.59	3.14	2.88	2.59	3.50
SD	1.77	1.83	1.19	1.69	22.7	17.01	27.37	18.38	3.73	6.00	.49	18.20	.63	.70	.82	.68
Alpha	-	-	-	-	.83	.74	.81	.81	.68	.82	-	-	.59	.48	.71	.53

Note: Possible ranges: RQ Dismissing, Preoccupied, Fearful, Secure: 1-7; Negative Sexual Affect: 0-140; Sexual Confidence: 0-120; Sexual Power/Control: 30-170; Sexual Intimacy/Pleasure: 26-130; Procreation: 6-30; Safer Sexual Behaviour: 0-84; RSQ Dismissing, Secure: 1-5; RSQ Preoccupied, Fearful: 1-4. Range for Time in Relationship was 0-71 months. * $p < .05$, ** $p < .01$.

Multiple Regression Analyses

In order to test the hypotheses that attachment style and the practice of safer sex are related, and that sexual working models potentially mediate this relationship, three standard multiple regression analyses were performed on each of the four components of sexual working models, following the procedure outlined by Baron and Kenny (1986) and Holmbeck (1997). The strategy of entering all variables simultaneously allowed the examination of the unique effects of each predictor (beta weights) when all other predictors were controlled^{*}. In the first regression equation, components of sexual working models were regressed on attachment style. In the second regression equation, safer sex behaviour was regressed on attachment style. In the third regression equation, safer sex behaviour was regressed on components of sexual working models and on attachment style. For mediation, attachment style must predict components of sexual working models, components of sexual working models must predict safer sex practice, and attachment style must predict safer sex practice. If the mediating hypothesis is correct, the association between attachment style and safer sex behaviour should be less in the third equation (with components of sexual working models) than in the second equation (no components of sexual working models). Tables 5 through 8 (see pp. 108-115) show the results of the regression analyses using RQ attachment styles as predictor variables. Tables 9 through 12 (see pp. 116-123) show the results of the regression analyses using RSQ attachment styles as predictor variables.

Dismissing attachment style. Hypothesis 1 (a) of my study stated that the more

^{*} Gender and length of time in relationship—two variables that might conceivably influence the practice of safer sex—were included as control variables in all regression analyses.

dismissing one is of emotional attachment, the more likely one will engage in safer sex.

Hypothesis 1 (b) stated that sexual working models will mediate in part the relation between dismissing attachment style and safer sex behaviour. As such, dismissing attachment style was expected to be associated with sexual working models, which in turn were expected to be associated with safer sex behaviour. As presented in Table 5 (see pp. 108-109), dismissing attachment style did not predict any component of sexual working models (equation 1) or precautionary sexual practices (equation 2). However, as evident from equation 3, sexual confidence and sexual power/control each predicted the practice of safer sex. In this case, more self-confidence in relation to sex as well as more interest in sexual power/control were associated with riskier (i.e., less safer-sex) behaviour.

The above pattern of relations was replicated using data from the RSQ dismissing attachment style subscale (see Table 9, pp. 116-117).

Preoccupied attachment style. Hypothesis 2 (a) stated that the more preoccupied one is with attachment, the less likely one will practice safer sex. Hypothesis 2 (b) stated that sexual working models will mediate in part the relation between preoccupied attachment style and safer sex behaviour. As such, preoccupied attachment style was expected to be associated with sexual working models, which in turn were expected to be associated with safer sex behaviour. Table 6 (see pp. 110-111) indicates that preoccupied attachment style predicted negative sexual affect and sexual intimacy/pleasure (equation 1). Specifically, greater preoccupation with attachment was associated with more negative feelings toward sex as well as more desire for sexual intimacy and pleasure. These aspects of sexual working models, however, did not predict safer sex behaviour (equation

3). Similarly, preoccupied attachment style did not predict safer sex behaviour (equation 2).

Preoccupied attachment style did not predict sexual confidence or sexual power/control (equation 1). However, as indicated in equation 3, these components each predicted safer sex behaviour. Specifically, greater self-confidence in sexual matters as well as greater interest in experiencing or exerting power/control in sexual relations were related to greater involvement in risky sexual behaviour.

The above pattern of results was replicated using data from the RSQ preoccupied attachment style subscale (see Table 10, pp. 118-119).

Fearful attachment style. Hypothesis 3 stated that fearful attachment style will be related indirectly to the practice of safer sex through sexual working models. As such, fear of attachment was expected to be related to sexual working models, which in turn were expected to be related to precautionary sexual behaviour. As presented in Table 7 (see pp. 112-113), fearful attachment style predicted negative sexual affect (equation 1). That is, more fear of emotional attachment was associated with more negative emotionality concerning sex. Negative sexual affect, however, was unrelated to safer sex behaviour (equation 3).

Fearful attachment style predicted sexual confidence (equation 1), and sexual confidence predicted safer sex behaviour (equation 3). Specifically, greater fear of attachment was associated with less sexual confidence, and less sexual confidence was associated with more safer-sex behaviour. Thus, fearful attachment style was related indirectly to safer sex behaviour through feelings of sexual confidence.

Fearful attachment style did not predict sexual power/control (equation 1).

However, as evident from equation 3, sexual power/control predicted safer sex practices. Specifically, the greater the motivation to experience or exert sexual dominance and control, the greater the tendency to engage in risky sex.

The above pattern of results was replicated using data from the RSQ fearful attachment style subscale (see Table 11, p. 120-121). In addition, RSQ fearful attachment style unexpectedly predicted safer sex behaviour (equation 3). Specifically, greater fearfulness was associated with riskier sexual behaviour. The stronger association between RSQ fearful attachment style and safer sex behaviour in the third equation (when sexual confidence was controlled) relative to that in the second equation (when sexual confidence was not controlled) suggests that sexual confidence acts to hide or suppress the relationship between fear of attachment and safer sex practices (Cohen & Cohen, 1983; Tabachnick & Fidell, 1996). Sexual confidence is interpreted here as a suppressing mediator variable, an interpretation that differs from the traditional definition of a "mediator" put forth by Baron and Kenney (1986). As previously noted, these authors have indicated that a key condition of a mediated relationship is that the association between the independent and dependent variables is substantially reduced (not enhanced, as was the case in the present study) when the proposed mediator is statistically controlled.

Secure attachment style. Hypothesis 4 stated that secure attachment style will be associated indirectly with the practice of safer sex through sexual working model variables. In other words, security of attachment was expected to be associated with sexual working models, which in turn were expected to be associated with precautionary

sexual behaviour. Table 8 (see pp.114-115) shows that secure attachment style predicted negative sexual affect (equation 1), and unexpectedly predicted safer sex behaviour (equation 2). Specifically, more attachment security was associated with less negative feelings toward sex and more safer-sex behaviour. However, as evident from equation 3, negative sexual affect did not predict safer sex behaviour.

Secure attachment style predicted sexual confidence (equation 1) as well as safer sex behaviour (equation 2). Specifically, more attachment security was related to more confidence with sex and to more safer-sex behaviour. As evident from equation 3, sexual confidence predicted safer sex behaviour. Specifically, more confidence with sex was related to riskier sexual behaviour. Thus, security of attachment directly predicted safer sex behaviour and was related indirectly to riskier sex through feelings of sexual confidence. Note that the relationship between secure attachment style and safer sex behaviour was stronger in the third equation when sexual confidence was controlled compared to the second equation when sexual confidence was not controlled. The increase in the size of the regression coefficient suggests that sexual confidence acts to suppress the relationship between secure attachment and safer sex behaviour.

Secure attachment style did not predict sexual power/control (equation 1). However, as evident from equation 3, both secure attachment style and sexual power/control each contributed independently to the prediction of safer sex behaviour. Specifically, greater attachment security was related to more safer-sex behaviour, and greater arousal in response to sexual power/control was related to riskier sexual behaviour.

Secure attachment style predicted sexual intimacy/pleasure (equation 1) and safer sex (equation 2). Specifically, more attachment security was associated with more interest in sexual intimacy/pleasure and more safer-sex behaviour. However, as evident from equation 3, sexual intimacy/pleasure did not predict safer sex behaviour.

Except in two instances, the above pattern of results was replicated using data from the RSQ secure attachment style subscale (see Table 12, pp. 122-123). Specifically, RSQ secure attachment style did not predict desire for sexual intimacy/pleasure (equation 1) or safer sex practices (equation 2). However, RSQ secure attachment style predicted safer sex practices after sexual confidence was controlled (equation 3). Specifically, greater security of attachment was associated with more safer-sex behaviour. The enhanced relationship between RSQ secure attachment style and safer sex behaviour in the third equation (when sexual confidence was controlled) in comparison with that in the second equation (when sexual confidence was not controlled) suggests that sexual confidence is a suppressor variable.

Summary. Dismissing attachment style bore no unique relationship to components of sexual working models or to safer sexual behaviour.

Preoccupied attachment style predicted negative emotional responses to sexuality as well as desire for sexual intimacy/pleasure.

Fearful attachment style predicted negative sexual affect as well as sexual confidence. Fearful attachment was linked indirectly to safer sex behaviour through sexual confidence. (RSQ fearful attachment style predicted riskier sexual behaviour after sexual confidence was controlled.)

Secure attachment style predicted negative sexual affect, sexual confidence, interest in sexual intimacy/pleasure (this relation did not hold for the RSQ, however), and safer sex behaviour (this relation did not hold for the RSQ, however). Secure attachment was linked indirectly to riskier sex through sexual confidence. (RSQ secure attachment style directly predicted the practice of safer sex when sexual confidence was controlled.)

Across all attachment styles, sexual confidence and interest in sexual power/control were predictive of the practice of safer sex.

The procreation variable was unrelated to attachment styles or to safer sexual practices.

Path diagrams. The results of the regression analyses reported above are summarized in Figures 5a through 5d (see pp. 124-125), which show path diagrams of the relations involved in predicting safer sexual behaviour (see Cohen & Cohen, 1983). In line with the focus on attachment precursors of precautionary sexual behaviour, diagrams are based on the significant standardized regression coefficients for the prediction of sexual working model components and safer sex practices. Figures 5a through 5d show, for each attachment style, the direct effects of each variable on subsequent variables. Indirect paths are defined as the products of successive direct paths, with the total effect of a given variable being the sum of its direct and indirect effects.

In relation to the dismissing attachment style, there were direct paths to safer sex behaviour from confidence in sexual matters ($RQ = .148$; $RSQ = .148$) and interest in sexual power/control ($RQ = .239$; $RSQ = .243$) (see Figure 5a, p. 124).

For the preoccupied attachment style, there were direct paths to safer sex practice from sexual confidence ($RQ = .155$; $RSQ = .148$) and sexual power/control ($RQ = .241$; $RSQ = .243$) (see Figure 5b, p. 124)

In the case of the fearful attachment style, there were direct paths to safer sex practice from sexual confidence ($RQ = .16$; $RSQ = .193$) and sexual power/control ($RQ = .242$; $RSQ = .239$). Fearful attachment had an indirect path to safer sex behaviour through sexual confidence ($RQ = -.182 \times .16 = -.029$; $RSQ = -.341 \times .193 = -.066$). When sexual confidence was controlled, RSQ fearful attachment style had a direct path to riskier sex practices (.133) (see Figure 5c, p. 125).

In the case of secure attachment style, there were direct paths to safer sex behaviour from secure attachment ($RQ = -.154$), sexual confidence ($RQ = .195$; $RSQ = .224$), and sexual power/control ($RQ = .23$; $RSQ = .236$). Secure attachment also had an indirect path to risky sex through sexual confidence ($RQ = .234 \times .195 = .046$; $RSQ = .388 \times .224 = .087$). The total effect of RQ secure attachment, defined by the sum of its direct effect (-.154) and its indirect effect through sexual confidence (.046), was -.108. When sexual confidence was controlled, RQ secure attachment style had an enhanced effect on safer sex behaviour (-.200), and RSQ secure attachment style had a direct path to safer sex practices (-.197) (see Figure 5d, p. 125).

The path diagrams provide some support for the links portrayed in Figures 3 and 4 (see p. 58), with effects for two of the four attachment styles and for two components of working models of sexuality. The strongest paths to safer sex behaviour were clearly from secure and fearful attachment styles and working models of sexuality that involve aspects of sexual confidence and interest in sexual power/control.

Table 5

Summary of Simultaneous Regression Analyses to Test for Mediation Using RQ
 Dismissing Attachment Style as a Predictor Variable (N = 242)

Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Dismissing Attachment	-.005	.033	-.095	-1.617	.198
Eq. 2: Safer Sex Behaviour (SSB) on Dismissing Attachment	.572	.573	.063	.998	.071
Eq. 3: SSB on NSA and Dismissing Attachment	1.639 .66	1.113 .574	.102 .073	1.472 1.149	.080
Sexual Confidence (SC)					
Eq. 1: SC on Dismissing Attachment	-.0002	.037	-.004	-.064	.007
Eq. 2: SSB on Dismissing Attachment	.572	.573	.063	.998	.071
Eq. 3: SSB on SC and Dismissing Attachment	2.371 .577	.993 .567	.148 .064	2.388* 1.018	.093
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Dismissing Attachment	.004	.035	.076	1.233	.112
Eq. 2: SSB on Dismissing Attachment	.572	.573	.063	.998	.071
Eq. 3: SSB on SP/C and Dismissing Attachment	3.817 .407	1.034 .560	.239 .045	3.693*** .727	.122

Table 5 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Dismissing Attachment	-.005	.037	-.092	-1.405	.015
Eq. 2: SSB on Dismissing Attachment	.572	.573	.063	.998	.071
Eq. 3: SSB on SI/P and Dismissing Attachment	-1.389 .500	1.005 .574	-.087 .055	-1.382 .871	.079
Procreation Scale					
Eq. 1: Procreation on Dismissing Attachment	.006	.137	.03	.467	.022
Eq. 2: SSB on Dismissing Attachment	.572	.573	.063	.998	.071
Eq. 3: SSB on Procreation and Dismissing Attachment	-.455 .601	.27 .571	-.106 .067	-1.687 1.053	.082

* $p = .018$, *** $p = .000$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 6

Summary of Simultaneous Regression Analyses to Test for Mediation Using RQ
Preoccupied Attachment Style as a Predictor Variable (N = 242)

Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Preoccupied Attachment	.103	.031	.188	3.27***	.224
Eq. 2: Safer Sex Behaviour (SSB) on Preoccupied Attachment	.417	.55	.048	.757	.069
Eq. 3: SSB on NSA and Preoccupied Attachment	1.391 .274	1.134 .562	.087 .031	1.226 .487	.075
Sexual Confidence (SC)					
Eq. 1: SC on Preoccupied Attachment	-.006	.035	-.111	-1.723	.019
Eq. 2: SSB on Preoccupied Attachment	.417	.55	.048	.757	.069
Eq. 3: SSB on SC and Preoccupied Attachment	2.482 .568	.999 .548	.155 .065	2.484* 1.036	.093
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Preoccupied Attachment	.001	.034	.027	.443	.107
Eq. 2: SSB on Preoccupied Attachment	.417	.55	.048	.757	.069
Eq. 3: SSB on SP/C and Preoccupied Attachment	3.857 .359	1.031 .536	.241 .041	3.741*** .670	.121

Table 6 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Preoccupied Attachment	.008	.035	.138	2.146*	.026
Eq. 2: SSB on Preoccupied Attachment	.417	.55	.048	.757	.069
Eq. 3: SSB on SI/P and Preoccupied Attachment	-1.604 .538	1.010 .554	-.1 .062	-1.587 .971	.079
Procreation Scale					
Eq. 1: Procreation on Preoccupied Attachment	.16	.131	.078	1.217	.028
Eq. 2: SSB on Preoccupied Attachment	.417	.55	.048	.757	.069
Eq. 3: SSB on Procreation and Preoccupied	-.465 .491	.271 .55	-.109 .056	-1.72 .893	.081

* $p \leq .033$. *** $p \leq .001$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 7

Summary of Simultaneous Regression Analyses to Test for Mediation Using RQ Fearful Attachment Style as a Predictor Variable (N = 242)

Mediators						
Negative Sexual Affect (NSA)	B	SE	β	t	R^2	
Eq. 1: NSA on Fearful Attachment	.009	.030	.179	3.115**	.221	
Eq. 2: Safer Sex Behaviour (SSB) on Fearful Attachment	.332	.527	.040	.63	.069	
Eq. 3: SSB on NSA and Fearful Attachment	1.423 .198	1.132 .536	.089 .024	1.257 .369	.075	
Sexual Confidence (SC)						
Eq. 1: SC on Fearful Attachment	-.01	.033	-.182	-2.854**	.040	
Eq. 2: SSB on Fearful Attachment	.332	.527	.04	.63	.069	
Eq. 3: SSB on SC and Fearful Attachment	2.567 .576	1.01 .529	.16 .069	2.542* 1.089	.094	
Sexual Power/Control (SP/C)						
Eq. 1: SP/C on Fearful Attachment	.006	.032	.011	.178	.107	
Eq. 2: SSB on Fearful Attachment	.332	.527	.04	.63	.069	
Eq. 3: SSB on SP/C and Fearful Attachment	3.87 .309	1.03 .513	.242 .037	3.754*** .603	.121	

Table 7 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Fearful Attachment	-.003	.034	-.065	-1.005	.011
Eq. 2: SSB on Fearful Attachment	.332	.527	.040	.63	.069
Eq. 3: SSB on SI/P and Fearful Attachment	-1.433 .283	1.004 .526	-.090 .034	-1.428 .537	.077
Procreation Scale					
Eq. 1: Procreation on Fearful Attachment	-.009	.126	-.047	-.722	.024
Eq. 2: SSB on Fearful Attachment	.332	.527	.04	.63	.069
Eq. 3: SSB on Procreation and Fearful Attachment	-.439 .292	.27 .525	-.103 .035	-1.626 .555	.079

* $p = .012$. ** $p \leq .005$. *** $p = .000$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 8

Summary of Simultaneous Regression Analyses to Test for Mediation Using RQ Secure Attachment Style as a Predictor Variable (N = 242)

Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Secure Attachment	-.105	.034	-.177	-3.085**	.220
Eq. 2: Safer Sex Behaviour (SSB) on Secure Attachment	-1.461	.587	-.154	-2.487*	.091
Eq. 3: SSB on NSA and Secure Attachment	1.009 -1.355	1.12 .599	.063 -.143	.901 -2.262*	.094
Sexual Confidence (SC)					
Eq. 1: SC on Secure Attachment	.139	.037	.234	3.729***	.062
Eq. 2: SSB on Secure Attachment	-1.461	.587	-.154	-2.487*	.091
Eq. 3: SSB on SC and Secure Attachment	3.119 -1.894	1.003 .593	.195 -.200	3.111** -3.192**	.127
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Secure Attachment	-.005	.036	-.078	-1.281	.113
Eq. 2: SSB on Secure Attachment	-1.461	.587	-.154	-2.487*	.091
Eq. 3: SSB on SP/C and Secure Attachment	3.687 -1.289	1.024 .575	.23 -.136	3.6*** -2.243*	.138

Table 8 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Secure Attachment	.107	.038	.18	2.826**	.039
Eq. 2: SSB on Secure Attachment	-1.461	.587	-.154	-2.487*	.091
Eq. 3: SSB on SI/P and Secure Attachment	-1.058 -1.348	1.008 .597	-.066 -.142	-1.049 -2.258*	.095
Procreation Scale					
Eq. 1: Procreation on Secure Attachment	-.008	.142	-.037	-.574	.023
Eq. 2: SSB on Secure Attachment	-1.461	.587	-.154	-2.487*	.091
Eq. 3: SSB on Procreation and Secure Attachment	-.472 -1.499	.267 .585	-.11 -.158	-1.769 -2.563*	.103

* $p \leq .026$. ** $p \leq .005$. *** $p = .000$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 9

Summary of Simultaneous Regression Analyses to Test for Mediation Using RSQ
 Dismissing Attachment Style as a Predictor Variable (N = 242)

Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Dismissing Attachment	-.009	.094	-.057	-.971	.192
Eq. 2: Safer Sex Behaviour (SSB) on Dismissing Attachment	.005	1.615	.002	.029	.067
Eq. 3: SSB on NSA and Dismissing Attachment	1.519 .184	1.112 1.616	.095 .007	1.361 .114	.074
Sexual Confidence (SC)					
Eq. 1: SC on Dismissing Attachment	-.006	.104	-.041	-.618	.008
Eq. 2: SSB on Dismissing Attachment	.005	1.615	.002	.029	.067
Eq. 3: SSB on SC and Dismissing Attachment	2.372 .199	.996 1.601	.148 .008	2.381* .124	.089
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Dismissing Attachment	.005	.099	.032	.508	.107
Eq. 2: SSB on Dismissing Attachment	.005	1.615	.002	.029	.067
Eq. 3: SSB on SP/C and Dismissing Attachment	3.880 -.149	1.032 1.573	.243 -.006	3.760*** -.094	.120

Table 9 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Dismissing Attachment	-.009	.104	-.057	-.866	.010
Eq. 2: SSB on Dismissing Attachment	.005	1.615	.002	.029	.067
Eq. 3: SSB on SI/P and Dismissing Attachment	-1.471 -.009	1.004 1.614	-.092 -.003	-1.465 -.054	.076
Procreation Scale					
Eq. 1: Procreation on Dismissing Attachment	-.203	.386	-.034	-.526	.023
Eq. 2: SSB on Dismissing Attachment	.005	1.615	.002	.029	.067
Eq. 3: SSB on Procreation and Dismissing Attachment	-.447 -.004	.270 1.610	-.104 -.002	-1.652 -.028	.078

* $p = .018$, *** $p = .000$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 10

Summary of Simultaneous Regression Analyses to Test for Mediation Using RSQ
Preoccupied Attachment Style as a Predictor Variable (N = 242)

Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Preoccupied Attachment	.433	.079	.304	5.452***	.279
Eq. 2: Safer Sex Behaviour (SSB) on Preoccupied Attachment	.0098	1.445	.004	.068	.067
Eq. 3: SSB on NSA and Preoccupied Attachment	1.665 -.622	1.177 1.529	.104 -.027	1.415 -.407	.075
Sexual Confidence (SC)					
Eq. 1: SC on Preoccupied Attachment	-.003	.093	-.021	-.317	.007
Eq. 2: SSB on Preoccupied Attachment	.0098	1.445	.004	.068	.067
Eq. 3: SSB on SC and Preoccupied Attachment	2.369 .169	.995 1.431	.148 .007	2.380* .118	.089
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Preoccupied Attachment	.007	.088	.051	.828	.109
Eq. 2: SSB on Preoccupied Attachment	.0098	1.445	.004	.068	.067
Eq. 3: SSB on SP/C and Preoccupied Attachment	3.884 -.185	1.033 1.409	.243 -.008	3.760*** -.132	.120

Table 10 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Preoccupied Attachment	.277	.091	.195	3.029**	.044
Eq. 2: SSB on Preoccupied Attachment	.0098	1.445	.004	.068	.067
Eq. 3: SSB on SI/P and Preoccupied Attachment	-1.539 .525	1.021 1.469	-.096 .023	-1.507 .357	.076
Procreation Scale					
Eq. 1: Procreation on Preoccupied Attachment	.183	.345	.035	.531	.023
Eq. 2: SSB on Preoccupied Attachment	.0098	1.445	.004	.068	.067
Eq. 3: SSB on Procreation and Preoccupied Attachment	-.448 .181	.270 1.441	-.104 .008	-1.656 .125	.078

* $p = .018$. ** $p = .003$. *** $p = .000$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 11

Summary of Simultaneous Regression Analyses to Test for Mediation Using RSQ Fearful Attachment Style as a Predictor Variable (N = 242)

Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Fearful Attachment	.252	.070	.207	3.592***	.231
Eq. 2: Safer Sex Behaviour (SSB) on Fearful Attachment	1.305	1.233	.067	1.058	.072
Eq. 3: SSB on NSA and Fearful Attachment	1.307 .976	1.139 1.266	.082 .050	1.148 .771	.077
Sexual Confidence (SC)					
Eq. 1: SC on Fearful Attachment	-.417	.075	-.341	-5.554***	.121
Eq. 2: SSB on Fearful Attachment	1.305	1.233	.067	1.058	.072
Eq. 3: SSB on SC and Fearful Attachment	3.080 2.588	1.049 1.290	.193 .133	2.936** 2.006*	.104
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Fearful Attachment	.0058	.076	.048	.773	.109
Eq. 2: SSB on Fearful Attachment	1.305	1.233	.067	1.058	.072
Eq. 3: SSB on SP/C and Fearful Attachment	3.830 1.081	1.031 1.203	.239 .055	3.715*** .899	.123

Table 11 cont.

Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Fearful Attachment	-.127	.079	-.104	-1.596	.017
Eq. 2: SSB on Fearful Attachment	1.305	1.233	.067	1.058	.072
Eq. 3: SSB on SI/P and Fearful Attachment	-1.374 .283	1.006 .526	-.086 .034	-1.366 .537	.079
Procreation Scale					
Eq. 1: Procreation on Fearful Attachment	.284	.295	.062	.963	.025
Eq. 2: SSB on Fearful Attachment	1.305	1.233	.067	1.058	.072
Eq. 3: SSB on Procreation and Fearful Attachment	-.466 1.437	.270 1.231	-.109 .074	-1.727 1.168	.083

* $p = .046$, ** $p \leq .004$, *** $p = .000$. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

Table 12

Summary of Simultaneous Regression Analyses to Test for Mediation Using RSQ Secure Attachment Style as a Predictor Variable (N = 242)

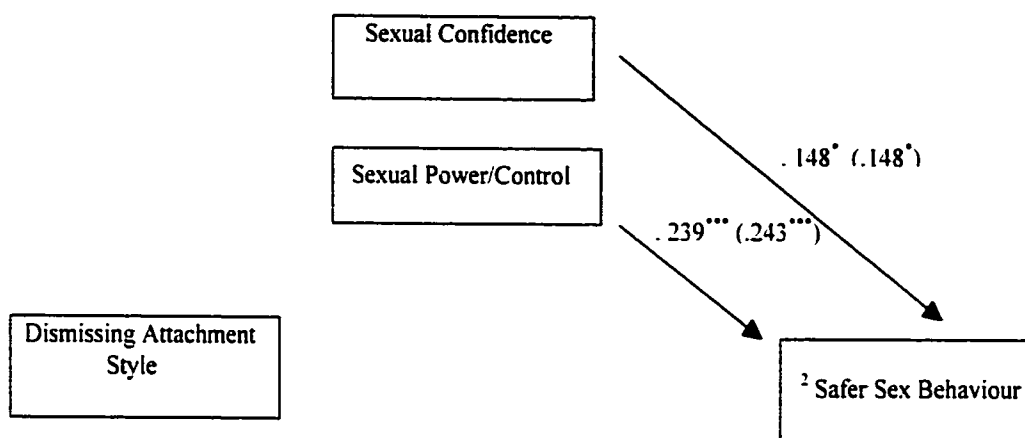
Mediators					
Negative Sexual Affect (NSA)	B	SE	β	t	R ²
Eq. 1: NSA on Secure Attachment	-.453	.081	-.309	-5.621***	.284
Eq. 2: Safer Sex Behaviour (SSB) on Secure Attachment	-2.578	1.463	-.110	-1.762	.079
Eq. 3: SSB on NSA and Secure Attachment	.950 -2.147	1.177 1.558	.059 -.092	.808 -1.378	.082
Sexual Confidence (SC)					
Eq. 1: SC on Secure Attachment	.569	.088	.388	6.499***	.157
Eq. 2: SSB on Secure Attachment	-2.578	1.463	-.110	-1.762	.079
Eq. 3: SSB on SC and Secure Attachment	3.591 -4.621	1.060 1.554	.224 -.197	3.387*** -2.974**	.122
Sexual Power/Control (SP/C)					
Eq. 1: SP/C on Secure Attachment	-.009	.090	-.063	-1.025	.110
Eq. 2: SSB on Secure Attachment	-2.578	1.463	-.110	-1.762	.079
Eq. 3: SSB on SP/C and Secure Attachment	3.770 -2.231	1.028 1.429	.236 -.095	3.666*** -1.561	.129

Table 12 cont.

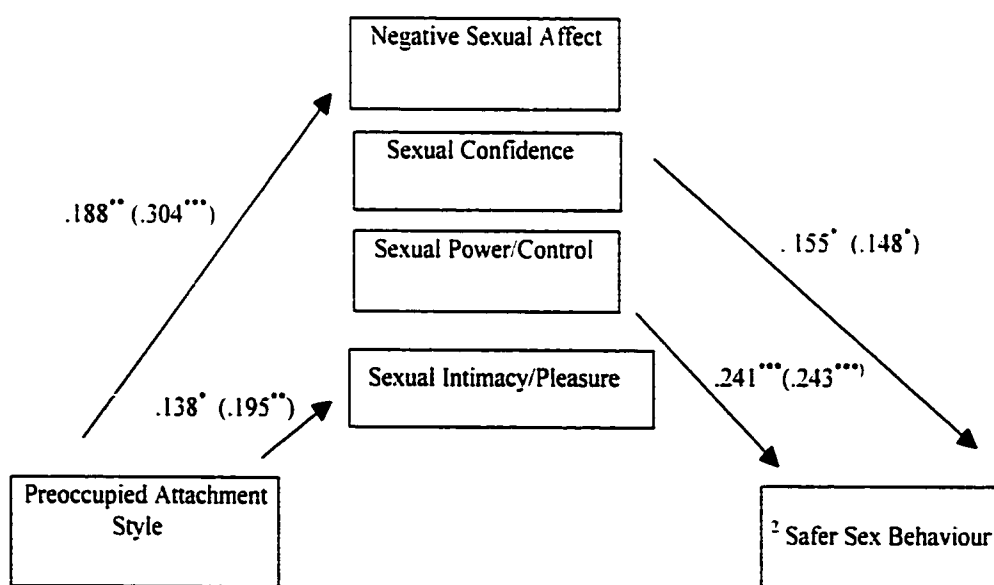
Sexual Intimacy/Pleasure (SI/P)	B	SE	β	t	R ²
Eq. 1: SI/P on Secure Attachment	.105	.095	.071	1.105	.012
Eq. 2: SSB on Secure Attachment	-2.578	1.463	-.110	-1.762	.079
Eq. 3: SSB on SI/P and Secure Attachment	-1.350 -2.437	.999 1.464	-.084 -.104	-1.351 -1.664	.086
Procreation Scale					
Eq. 1: Procreation on Secure Attachment	-.462	.351	-.084	-1.318	.029
Eq. 2: SSB on Secure Attachment	-2.578	1.463	-.110	-1.762	.079
Eq. 3: SSB on Procreation and Secure Attachment	-.490 -2.805	.269 1.461	-.114 -.120	-1.822 -1.920	.092

** p = .003, *** p ≤ .001. Although not shown in this table, the control variables (gender and length of time in relationship) were included in all regression equations.

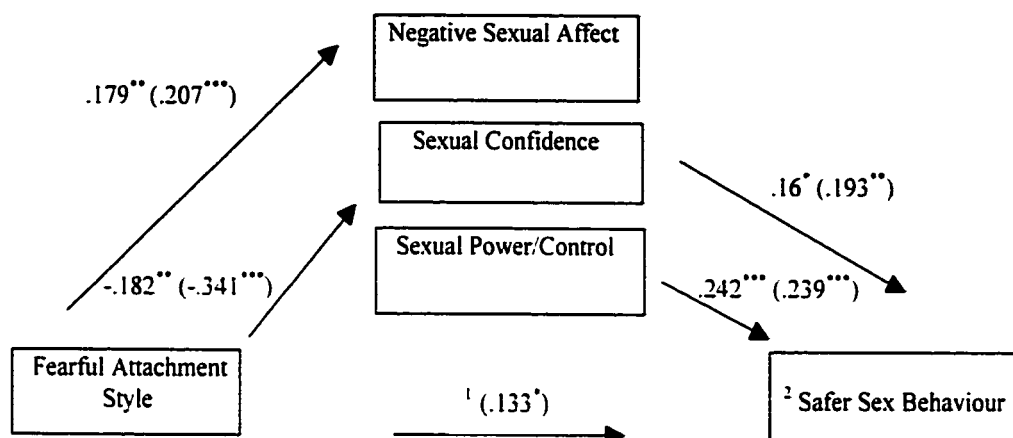
(a)



(b)



(c)



(d)

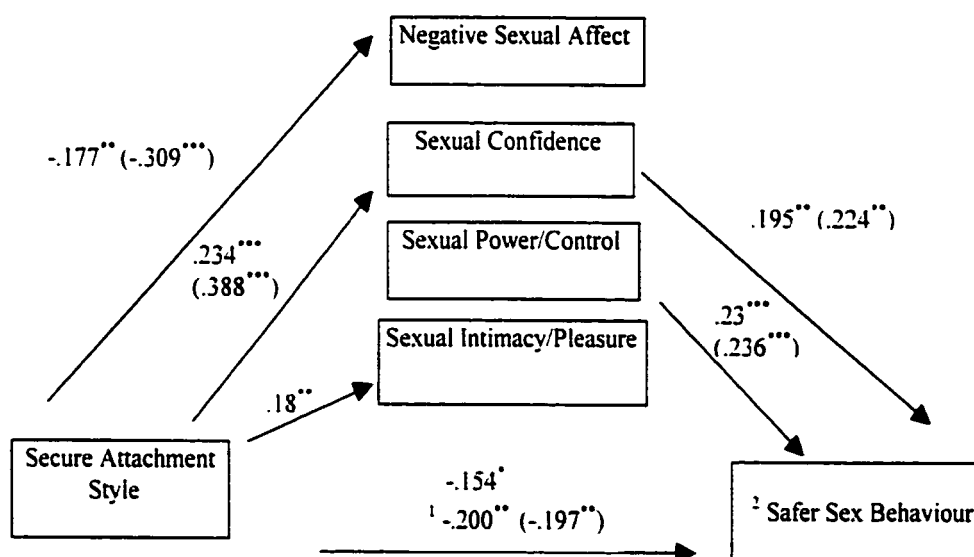


Figure 5. Path models depicting the role of prototype attachment styles and sexual working models in predicting the practice of safer sex. Models control for the effects of gender and length of time in relationship. Significant standardized regression coefficients are shown on top of arrows. ¹ Regression coefficients that resulted after Sexual Confidence was controlled. Numbers outside of the parentheses are for the RQ. Numbers within the parentheses are for the RSQ. ² Lower scores reflect more safer-sex behaviour; higher scores reflect less safer-sex (i.e., riskier) behaviour. N = 242. * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

Attachment theory assumes that humans have a basic need for “felt security” that is naturally satisfied by searching for and maintaining relations with others. Bowlby (1988) elaborated that through early experiences with caretakers, children learn that in order to maintain closeness with others and feel secure, they must behave in certain ways. These “certain ways” (and the experiential-affective-cognitive processes associated with them) evolve into organized, mental schemas (“internal working models”) informing one about the nature of close relationships and what is generally necessary to sustain emotional connectedness to others (Levenson & Strupp, 1997). Some adult attachment theorists have extended attachment concepts to romantic/sexual relationships (e.g., Shaver & Hazan, 1988; Hazan & Shaver, 1994). From an attachment perspective, prototypical adult attachment relationships include elements of sexuality. Theoretically, the quality of attachment that each sexual partner brings to a relationship influences his or her expression of sexuality. This study was designed to examine how prototypical styles of adult attachment relate to working models of sexuality (i.e., generalized sexual attitudes, feelings, and motives relevant to the self and relationships) and to the practice of safer sex in a university-based sample of young adults. Below are restatements of the hypotheses of the study and a summary of the findings.

Summary of Results

Hypothesis 1. The first hypothesis stated that a dismissing attachment style would be related to safer sex behaviour. Specifically, the more dismissing one is of emotional

attachment, the more likely one will engage in safer sex. A corollary hypothesis stated that dismissing attachment style would be related to working models of sexuality, which in turn would be related to safer sex behaviour. In other words, feelings, thoughts, and motives related to sexuality were predicted to partially account for or mediate the relation between dismissing attachment style and safer sex behaviour.

The results did not support the main hypothesis: Contrary to expectations, dismissing attachment style was unrelated to safer sex behaviour. However, there was partial support for the corollary hypothesis: Although dismissing attachment style was unrelated to working models of sexuality, components concerning feelings of sexual confidence and interest in the power/control aspects of sex were related to safer sex behaviour.

Hypothesis 2. The second hypothesis stated that a preoccupied attachment style would be related to safer sex practices. Specifically, the more preoccupied one is with attachment, the less likely one will practice safer sex. A corollary hypothesis stated that preoccupied attachment style would be related to working models of sexuality, which in turn would be related to safer sex behaviour. In other words, working models of sexuality were predicted to mediate or explain in part the relation between preoccupied attachment style and safer sex behaviour.

The results did not support the main hypothesis: Contrary to expectations, preoccupied attachment style was unrelated to safer sex behaviour. There was partial support for the corollary hypothesis: As expected, preoccupied attachment style was related to components of sexual working models (negative sexual affect and desire for

sexual intimacy/pleasure); however, these components were unrelated to safer sex behaviour.

Hypothesis 3. The third hypothesis stated that a fearful attachment style would be associated indirectly with safer sex behaviour through working models of sexuality. As such, fear of attachment was expected to be associated with working models of sexuality, which in turn were expected to be associated with safer sex behaviour. The results supported the hypothesis: As expected, fearful attachment was linked indirectly (through sex confidence) to the practice of safer sex. An unexpected finding was that fearful attachment was related to riskier sexual behaviour when sexual confidence was controlled.

Hypothesis 4. The fourth hypothesis stated that a secure attachment style would be associated indirectly with safer sexuality through sexual working models. As such, secure attachment was expected to be correlated with working models of sexuality, which in turn were expected to be correlated with safer sex behaviour.

The results supported the hypothesis: As expected, security of attachment was associated indirectly with riskier sex behaviour (through sexual confidence). An unexpected finding was that secure attachment style was related to safer sex behaviour independent of sexual feelings, thoughts, and motives.

Major findings. The major integrative themes or findings of the study include the following: (a) Each style of adult attachment was related in different ways to components of working models of sexuality. For example, dismissing attachment style did not predict any of the measures of sexual thoughts, feelings, and motives. Preoccupied attachment style predicted negative sexual affect and desire for sexual intimacy/pleasure. Fearful

attachment style predicted negative sexual affect and feelings of sexual confidence.

Secure attachment style predicted negative sexual affect, sexual confidence, and interest in sexual intimacy/pleasure; (b) None of the measures of attachment style uniquely predicted interest in sexual power/control; (c) Fearful attachment style predicted indirectly (through feelings of sexual confidence) safer sex practices, and predicted directly (when sexual confidence was controlled) riskier sex practices (d) Secure attachment style directly predicted safer sex behaviour, and indirectly predicted riskier sex behaviour through feelings of sexual confidence; (e) Sexual confidence and interest in sexual power/control predicted riskier sexual behaviour across all attachment styles; and (f) Fearful and secure attachment styles more strongly predicted the practice of safer sex when sexual confidence was controlled. Thus, sexual confidence serves as a "suppressing mediator" or explanatory variable for the relationship between attachment style and safer sex behaviour.

Based on the evidence, the fundamental questions that guided my research can be answered as follows: (a) Does attachment style relate to safer sexual activity? Yes, secure and fearful attachment styles relate to safer sexual behaviour: (b) Do sexual working models mediate or "account" for the relationship? Yes, feelings of sexual confidence serve as mediators.

Interpretation of Findings

Dismissing attachment style and sexuality. Theoretically, underlying each of the four prototypical patterns of adult attachment is a distinct pattern of positive and negative working models of self and others, anxiety about abandonment and dependency experienced in close relationships, and desire for closeness in relationships. The

dismissing pattern of adult attachment is characterized by mistrust of others, a downplaying of the value of close relationships, and an emphasis on independence, self-reliance, and achievement. In other words, a dismissing style of attachment is marked by distance and detachment in personal relationships, a style that protects one against interpersonal hurt and vulnerability and maintains high self-esteem.

Dismissing attachment is conceptualized as a type of avoidant attachment. Previous research indicated that individuals with an avoidant attachment style were the most likely to endorse promiscuous sexual behaviour (Brennan, Clark, & Shaver, 1998) and to engage in low-intimacy sexual encounters and affairs (Brennan & Shaver, 1995), contexts wherein condoms are likely to be used (Hammer et al., 1996; Kelly & Kalichman, 1995). Research also found a positive association between dismissing attachment style and self-confidence and control in relationships (Bartholomew & Horowitz, 1991). In light of theory and previous research, ratings on the dismissing attachment style scale were expected to correlate with ratings on scales pertaining to sexual confidence, sexual power and control, sexual intimacy, and safer sex behaviour. However, dismissing attachment style did not relate to any of the sexuality variables, a finding that distinguishes dismissing attachment style from the three other attachment styles.

Three hypotheses come to mind for the failure to find a relationship between dismissing attachment and sexuality. First, previous research (Brennan et al., 1991) showed that individuals who identified themselves as “dismissing” using Bartholomew’s (1991) four-style typology tended to identify themselves as “secure” and “avoidant” using Hazan and Shaver’s (1987) earlier three-style typology. Previous research also

showed that persons with secure and avoidant styles tended to differ in their sexual attitudes and behaviour (e.g., Brennan & Shaver, 1995). It could be argued that in capturing two different attachment patterns, dismissing attachment style is associated with varied sexual activities and practices, thus resulting in the lack of a consistent relationship between dismissing attachment style and the sexuality variables.

An alternative explanation is that the construct of dismissing attachment style may have little relevance to human sexuality. Conceptually, dismissing attachment style is a defensively distant and detached pattern of avoidance of intimacy. This is reflected in the themes of counter-dependency, discomfort with closeness, and compulsive self-reliance that are contained in the prototypical description of dismissing attachment style. The lack of investment in other people and the constricted emotionality reflected by dismissing attachment style may be so incongruous with the way most individuals perceive and describe themselves sexually that respondents' ratings on the respective scales simply did not correlate.

A third explanation pertains to the standard multiple regression analyses used in the study. The correlation matrix in Table 4 (see p. 99) shows that dismissing attachment style correlated positively with enjoyment of experiencing power and control during sex. However, in the regression analyses, dismissing attachment style contributed nothing unique to the prediction of sexuality when compared to the predictability afforded by the other independent variables in the set (i.e., gender, length of time in relationship). Thus, although the bivariate correlation between dismissing attachment style and interest in sexual power/control was significant, the relationship seems redundant to the relationship between sexuality and the other independent variables.

Preoccupied attachment style and sexuality. The prototypical preoccupied pattern of adult attachment is conceptualized as reflecting low self-esteem, strong dependence on others' acceptance and approval to maintain a personal sense of self-worth, a tendency to idealize other people, and desire for extreme closeness in personal relationships. In other words, preoccupied attachment is characterized by enmeshed dependency, a style that is assumed to leave one vulnerable to extreme emotional distress when one's intimacy needs are not met.

Preoccupied attachment is conceptually similar to anxious-ambivalent attachment. Previous research indicated that lovers who reported having an anxious-ambivalent attachment style tended to be obsessively preoccupied with their partners' responsiveness, experienced intense sexual passion and jealousy in regard to their partners (Hazan & Shaver, 1987), and were clingy and overly dependent on their partners (Brennan & Shaver, 1995). Recent research found that preoccupied individuals, along with secure individuals, were most likely to endorse romantic/affectionate sexual behaviours (Brennan et al., 1998). Given the affectivity and emotional dependency and reactivity of anxious-ambivalent/preoccupied individuals, ratings on the preoccupied style of attachment scale were expected to be associated with ratings on scales tapping the emotional and interpersonal aspects of sexuality.

As expected, preoccupation with attachment was associated with negative feelings about sex as well as with desire for emotional connection through sexual intimacy/pleasure. These findings suggest that preoccupied attachment involves complex and somewhat contradictory attitudes toward sexual involvement (sexual intimacy is desired but at the same time engenders negative feelings). This finding is reminiscent of

earlier work by Feeney, Noller, and Hanrahan (1994) who reported that subjects in their “preoccupied” group appeared to be ambivalent about closeness. That is, their subjects emphasized the importance of and worried a lot about their relationships and whether others approved of them; they tended to be uncomfortable with closeness, however. This ambivalence toward close relationships seems to be reflected in the desire-cum-discomfort pattern of sexuality related to preoccupied attachment in this study.

Previous studies found that preoccupation with attachment was associated with low self-confidence (Bartholomew & Horowitz, 1991; Feeney, Noller, & Hanrahan, 1994), desire to be liked by others, and worry about loss of relationships (Feeney, Noller, & Hanrahan, 1994). Thus, in this study, greater preoccupation with attachment was expected to be associated with more reluctance to talk about safer sex or use condoms for fear of alienating a partner. Preoccupation with attachment was not associated with safer sexuality, however. Ambivalence about sex, which appears to be a central feature of preoccupied attachment, may explain this outcome. On the one hand, eagerness for sexual closeness (presumably motivated by a desire to feel loved and appreciated) may inhibit the practice of safer sex for fear of offending one’s sexual partners. On the other hand, discomfort with sexual closeness (presumably due to lack of trust that others will be there for you when you need them) may promote safer sex practices. These potentially conflicting motives and feelings regarding sex may translate into unpredictable sexual behaviour, which may account for the lack of a consistent relationship between preoccupied attachment style and safer sex behaviour in this study.

Fearful attachment style and sexuality. The prototypical fearful pattern of adult attachment is conceptualized as reflecting a sense of personal inadequacy combined with

a distrust of others. Fearfully attached individuals desire intimacy and highly value others' approval, yet they worry about being hurt emotionally if they allow themselves to become too close to others. As a way of minimizing the pain of potential disappointment, loss, or rejection, they tend to actively avoid close relationships. Fearful attachment style, then, implies a socially avoidant style that protects one from the anticipated distress associated with being close to others.

Previous research found that fearful subjects were very low in social self-confidence (Bartholomew & Horowitz, 1991; Feeney, Noller, & Hanrahan, 1994); had interpersonal problems reflecting unassertiveness and social inhibition, and lacked closeness of and had a tendency to be subservient in relationships (Bartholomew & Horowitz, 1991); and had high need for approval and worried about relationships (Feeney, Noller, & Hanrahan, 1994). In other words, fearful subjects were very insecure. Recent research found that fearful individuals were the most likely to experience negative emotions following sex (Brennan et al., 1998). Based on theory and prior findings, ratings of fearful attachment in this study were expected to correlate with ratings on scales tapping sexual negativity and insecurity.

As expected, fearful attachment style was associated with negative sexual affect and with sexual confidence. Sexual confidence in turn was associated with safer sex behaviour. Fearful attachment style, then, was linked indirectly through sexual confidence to the practice of safer sex. Findings indicated that higher fear of attachment was associated with lower sexual confidence, and lower sexual confidence was associated with more consistent safer sex practices. These linkages make sense in the following way: One might predict that fearful avoidance of getting emotionally close and involved

with others lessens the chances of getting exposed to sexual relationship experiences that help to develop confidence in one's capacity to relate sexually with another person. One might also predict that the lower the confidence in one's ability to relate sexually, the more one self-consciously shuns or abstains from sex (the ultimate safer sex behaviour), or self-protectively compensates by insisting on precautionary measures during sexual encounters. In this case, sexual confidence appears to be a protective factor. This notion is reinforced when sexual confidence is partialled out of (statistically controlled) the relationship between fearful attachment and safer sex behaviour. Here, fearful attachment is associated with risky sexual behaviour. In conclusion, for fearfully attached individuals, sexual confidence seems to be a factor that protects against risky sexual behaviour. Said differently, fearful attachment has an indirect positive effect on safer sex behaviour working through the mediating variable of sexual confidence.

Secure attachment style and sexuality. The secure style of attachment in adulthood is theoretically characterized by high self-esteem, positive regard for others, and comfort with interpersonal closeness. Securely attached individuals are considered to be self-accepting, trusting, and comfortable with interdependency, a style that enables them to flexibly seek out as well as provide closeness and comfort in relationships. Previous research supports this conceptualization of secure attachment (Bartholomew & Horowitz, 1991; Brennan & Shaver, 1995; Feeney, Noller, & Hanrahan, 1994). Previous studies also found that individuals with a secure attachment style tended to be involved in relatively long-term, mutually-satisfying sexual relationships (Hazan & Shaver, 1987; Brennan & Shaver, 1995; Hazan et al., 1994, cited in Feeney & Noller, 1996). Recent research found that secure individuals, along with individuals categorized as being

preoccupied, were most likely to endorse romantic/affectionate sexual behaviours; secure individuals were also more likely to experience positive emotions, and less likely to experience negative emotions, following sex (Brennan et al., 1998). Thus, secure attachment style was expected to be associated with a style of sexuality characterized by positive feelings toward sex, confidence in one's sexuality, and a striving for sexual intimacy and pleasure.

As expected, secure attachment was related to lower sexual anxiety and depression and to higher sexual self-awareness, sexual-esteem, and desire for building and enhancing intimacy with one's sexual partner. Unexpectedly, secure attachment style was related to safer sex behaviour such that the higher the level of attachment security, the greater the tendency to practice safer sex. A possible explanation for this finding is that more positive regard for others and oneself enables one to more openly address the matter of safer sex (i.e., less concern about not being accepted or about being abandoned). A capacity to openly express concerns, willingly seek sexual partners' cooperation, and expect that their cooperation will be forthcoming, increases the likelihood of engaging in safer sex behaviour.

Attachment security was related to higher levels of sexual confidence, and higher levels of sexual confidence were related to riskier sexual behaviour. Secure attachment style, then, is linked indirectly through confidence in sexual matters to riskier sexual practices. It makes sense that more comfort with self and others likely increases the desire to be involved in a sexual relationship and the tendency to positively evaluate one's capacity to relate sexually with another person. The reason for the sexual confidence-risky sex relationship is less obvious. One possibility is that individuals who

are highly sexually confident (i.e., exuberant) have had sexual relationship experiences sufficiently positive (i.e., no untoward infections) to foster a sense of security and decreased motivation to practice safer sex during each and every sexual encounter. In this case, sexual confidence appears to be a risk factor. This notion is reinforced when sexual confidence is partialled out of the relationship between secure attachment and safer sexual behaviour. Here, secure attachment style more strongly predicts the practice of safer sex. In conclusion, for securely attached individuals, sexual confidence seems to be a factor that increases risky sexual behaviour. In other words, secure attachment has an indirect negative effect on safer sexual behaviour working through the mediating variable of sexual confidence.

Working models of sexuality and safer sex behaviour. As indicated above, feelings of sexual confidence were related to safer sex behaviour. Specifically, higher levels of qualities such as awareness of one's sexuality, positive feelings regarding one's ability to relate sexually with another person, desire to be involved in a sexual relationship, and sexual assertiveness were associated with riskier sexual behaviour. A possible explanation for this relationship, as noted above, is that a high level of sexual confidence, likely derived from having had positive sexual experiences, may foster a perception of invulnerability to contracting sexually-transmitted diseases, which may lead to less consistent safer sex practices. Or, vice versa, if one is lucky enough to remain healthy in spite of having engaged in unprotected sex, one may develop a personal sense of security and protection from the possibility of sexually contracting an illness, which may increase one's confidence and desire to be sexually active.

Preference for experiencing sexual power/control also was related to the practice of safer sex. Specifically, more desire for experiences such as having one's partner take charge and become authoritative during sex, exerting dominance and control over one's partner during sex, and engaging in sex as a way to reduce stress was associated with riskier sexual practices. The reasons for this relationship are unclear. One possibility involves sexual performance issues. One might speculate, for example, that the greater the enjoyment of forceful, aggressive sexual activity (initiated or yielded to), the more salient are concerns about sexual performance (one's own or that of one's partner), which in turn is associated with less interest in engaging in potentially performance-inhibiting safer sex practices.

As shown in the correlation matrix in Table 4 (see p. 99), negative feelings regarding sex were associated with safer sex behaviour. The direction of the correlation coefficient suggests that participants who reported higher levels of qualities such as anxiety, depression, and perceived lack of control concerning the sexual aspects of their life also reported engaging in riskier sexual behaviour. However, unlike sexual confidence and enjoyment of sexual power/control, negative sexual affect contributed nothing unique to the prediction of safer sex practices when compared to the predictability afforded by the other independent variables (i.e., gender, length of time in relationship, attachment style) in the standard multiple regression equations. Thus, although the bivariate correlation between negative sexual affect and safer sex behaviour was significant, the relationship seems to be redundant to the relationship between safer sex behaviour and the other independent variables in the set.

Implications of Findings

Theoretical implications. In general, findings in this study lend support to Shaver and Hazan's (1988) and Feeney and Raphael's (1992) theoretical arguments that patterns of attachment are predictive of aspects of sexuality. For example, among the adult attachment styles postulated by Bartholomew (Bartholomew & Horowitz, 1991), secure, preoccupied, and fearful patterns were differentially related to aspects of working models of sexuality; fearful attachment style was associated both indirectly with safer sex behaviour (through sexual confidence) and directly with riskier sex behaviour (when sexual confidence was controlled); and secure attachment was related directly to safer sex practices as well as indirectly to riskier sexual practices (through sexual confidence).

Some of the findings seem to support Bartholomew's theory concerning internal "working models" (i.e., generalized beliefs, attitudes, and expectations about self and others in relation to attachment) thought to form the underlying basis of adult attachment styles. According to Bartholomew's theory, secure attachment style characteristically reflects a combination of positive working models of both self and others; preoccupied attachment style is thought to characteristically reflect a combination of negative working models of self and positive working models of others; and fearful attachment style is conceptualized as reflecting a combination of negative working models of both self and others. In line with attachment theory, individuals who reported more attachment security were more likely to report less negative sexual affect, greater sexual confidence, and greater desire to enhance sexual intimacy and pleasure with their partners, implying both a positive view of self and a positive view of others. Individuals who reported more anxious preoccupation concerning close relationships also reported more negative

feelings about their sexuality and greater interest in building and enhancing emotional connectedness with their sexual partners, implying both negative views of self and positive views of others. Individuals who reported more fearful attachment were more likely to report more negative feelings about the sexual aspects of their lives and less confidence in their capacity to relate sexually with another person, implying both negative views of self and negative views of others.

Conspicuous by their absence were uniquely significant relations between the dismissing attachment style and the sexuality variables. That is, when covariates were controlled for in the regression analyses, dismissing attachment style did not stand out as a unique predictor of sexual attitudes, feelings, motives, or safer sex behaviour. However, the positive correlation between dismissing attachment style and sexual power/control (see Table 4, p. 99) suggests that individuals who reported a more dismissing attitude to close emotional relationships were more likely to report more preoccupation with and enjoyment of domineering, forceful sexual activity. This association seems to make conceptual sense in terms of the attributes considered to be highly characteristic of the working models associated with the dismissing attachment style (i.e., “aggressive,” “assertive,” “autonomous,” “bold,” “confident,” “daring,” “dominant,” “forceful,” and “strong” [Klohn & John, 1998]). Such attributes are congruous with the forceful, demanding quality of sexuality favoured by dismissive individuals, and imply both positive self and negative other models hypothesized to underlie the dismissing attachment style.

Methodological implications. The correlations between corresponding attachment styles on the RQ and the RSQ were moderate and positive, ranging from .53 to .60,

indicating that to some degree the two methods tap similar constructs. (These correlations may be exaggerated, however, because both sets of measures share a common method, i.e., self-reports; Griffin & Bartholomew, 1994b). Further evidence for the convergent validity of the RQ and the RSQ approaches to measuring adult attachment style is that they produced very similar patterns of results across criterion measures. Of the 17 statistically significant relationships among attachment style; feelings, attitudes, and motives regarding sexuality; and safer sex behaviour that were identified using the RQ, 15 were similarly identified using the RSQ. That is, the findings were almost identical whether four continuous prototypical ratings (RQ) were used or whether continuous ratings on four multi-item subscales (RSQ) were used. The slight discrepancies between the results from the RQ and the RSQ involved the fearful and secure attachment style dimensions. Specifically, (a) individuals who reported greater fearfulness were more likely to report engaging in riskier sex (when sexual confidence was controlled), according to the RSQ, but not so on the RQ; (b) individuals who reported greater security of attachment were more likely to report greater desire for sexual intimacy/pleasure, according to the RQ, but not so on the RSQ; and (c) individuals who reported a higher level of security were more likely to report more consistent safer sex behaviour, according to the RQ, but not so on the RSQ (however, when sexual confidence was controlled, both RQ and RSQ secure styles of attachment were related to safer sex practices).

A glance at the magnitude of the regression coefficients also shows that compared to the RQ, the RSQ preoccupied, fearful, and secure styles of attachment were

stronger predictors of sexual motives, thoughts, and feelings (the average coefficients across criterion measures were .183 and .291, respectively).

The slight differences between results based on the RQ and on the RSQ may be due to chance, unreliability of the measures themselves, or participants' reactivity to the different formats (i.e., single item paragraphs versus multi-item questionnaire). As such, the differences highlight the need to use multiple measurement strategies when assessing complex constructs such as attachment and human sexuality.

Applied implications. The findings indicated that university students with more secure attitudes toward close relationships are more likely to practise safer sex. In contrast, students who are more confident in their sexuality, and students who are more turned-on by forceful, aggressive sex, are less likely to practise safer sex. These findings are likely to have practical implications, particularly for healthcare professionals and counsellors dealing with young adults around the issue of sexual health. These results suggest that by considering the quality of their clients' general feelings of security in close relationships, their feelings of confidence in sexual matters, and their interest in the power and control aspects of sexuality, sex counsellors and healthcare professionals may play an active role in helping clients reduce their risk for contracting sexually-transmitted diseases.

In relation to security of attachment, clinicians might explore with clients their beliefs, expectations, and feelings regarding their (a) comfort with closeness (e.g., affectionate, sympathetic), (b) anxiety about loss of relationships (e.g., relaxed, unconcerned), (c) dependence (e.g., dependable, independent), (d) trust (e.g., trustful, nonwary), and (e) interpersonal confidence (e.g., outgoing, sociable) in romantic/sexual

relationships (Klohn & John, 1998). To the extent that clients describe themselves as being more comfortable with closeness, less anxious about their relationships, and so on, the more “secure” they are and the more likely they can communicate about and negotiate around the potentially-sensitive issue of safer sex. Clients who describe themselves as being less secure in terms of the above attachment-related domains might be at higher risk for engaging in unsafe sex and, thus, may be potential candidates for therapeutic interventions dealing with safer sexuality.

Therapeutic interventions may take the form of exploring clients’ memories, expectations, and affects associated with their personal relationships and providing insight into how their negative working models may manifest in unsafe behaviour in sexual relationships. For example, less secure individuals may consider others’ needs more important than their own, a perception that may put them at a personal disadvantage when it comes to decision-making around safer sex. In some cases, challenging clients’ existing interpersonal attitudes and beliefs (e.g., “Others are bound to leave me because I’m basically unlovable”) may foster change in self-esteem, self-confidence, trust, and assertiveness, leading to more self-care in terms of sexual health. In other cases, helping clients with negative relationship histories get exposed to more positive relationship experiences, through therapeutic group work or involvement in the community, for example, may make them feel more interpersonally confident, relaxed, and trusting, such that it leads to positive changes in their practice of safer sex.

A caveat regarding therapeutic interventions is that in addition to attempts to foster clients’ feelings of trust and security in close relationships it seems important to stress the potential dangers of unprotected sex even within seemingly trusting, committed

relationships. This dual strategy may be particularly true for young adults who describe themselves as being highly sexually aware, confident, motivated, assertive, and in control. The sexual self-confidence reflected in such attitudes may give young adults (whose sexual relationships are typically in transition) a sense of invulnerability to contracting a sexually-transmitted disease, a perception that clinicians should challenge and bring in line with students' actual STD risk.

The findings of this study also suggest that young adults who enjoy engaging in demanding, forceful sex are less consistent in their safer sex practices than those with less desire to experience sexual power and control. Thus, preference for aggressive sex might be a possible risk factor for unsafe sexual behaviour, making it a meaningful topic to explore with clients. Clinicians can help clients to identify whether sex characterized by power and control is arousing for them, talk about how this aspect of their personality might interfere with intentions to practice safer sex, and suggest strategies for avoiding situations in which risky sex is a possible outcome. I speculate that clients who indicate a strong interest in sex that is domineering in nature may have concerns about sexual performance that inhibit their adoption of safer sex actions. If this were the case, one might expect that helping clients to address their sexual performance concerns may encourage them to practice safer sex more consistently.

Limitations of the Study

Self-report. A number of limitations of this study are important to highlight. First, we relied solely on data collected from self-administered questionnaires. Self-report measures were used because they have the advantage of being easy to administer and score, and they directly assess participants' conscious feelings and perceptions about

themselves and others in close relationships. However, some participants may have been defensive and self-serving in their description of their relationship style, sexual attitudes and motives, and in their recall of the frequency with which they engage in protective sexual behaviours. Factors that may have biased participants' responses include conscious motives such as embarrassment or the desire to conceal or embellish specific attachment styles and sexual behaviours (i.e., social desirability; Gerrard et al., 1996). (Although we did not measure social desirability in our undergraduate sample, pilot data indicated only a modest relationship between the Safer Sex Behaviour scale and the Marlowe-Crowne Social Desirability Scale [Crowne & Marlowe, 1961]. Similarly, Hill and Preston [1996], authors of the AMORE scales, noted that minimal evidence was found in their study for the operation of social desirability influence.) Further, Bartholomew and Shaver (1998) point out "the possibility that there are aspects of attachment patterns that are inaccessible to conscious awareness [i.e., defensive processes block off potentially painful experiences] and, therefore, cannot be assessed by self-report methods" (p. 29). This seems to have some validity in that Griffin and Bartholomew (1994a) found relatively little convergence between self-report and interview measures of the prototypical secure attachment style, suggesting to them that "security of attachment may be especially susceptible to self-report biases" (p. 28). In other words, some participants may have provided more favourable self-reports than are justified by independent ratings. The same arguments about distortion and exclusion of information from awareness may be relevant to the accuracy of participants' self-reports of sexual attitudes and safer sex behaviour. However, in reviewing research relevant to HIV and precautionary sexual behaviour, Gerrard et al. (1996) note that "although the

reliability and validity of [self-report] measures of sexual behaviour are frequently questioned, the evidence suggests that they are reasonable” (p. 402). In short, this study is limited by its focus on participants’ general perceptions of their attachment style and their sexuality, which either intentionally or unintentionally, may be inaccurate.

Correlational data. A second limitation is the correlational and concurrent nature of the data. Because of this, it is impossible to make causal statements about adult attachment style and its sexual correlates. While attachment theory argues that attachment styles predict the onset of sexual thoughts and behaviour, the case may be vice versa. For example, one’s experience in trying to enact safer sex practices may, for better or worse, influence one’s sense of confidence in sexual matters, which in turn may influence one’s feelings of security in a romantic/sexual relationship.

Magnitude of correlations. A third limitation is that the correlations among the adult attachment styles, components of sexual working models, and safer sex behaviour were statistically significant but not strong. The modest strength of the associations suggests that the concepts of attachment style and of working models of sexuality are clearly useful in thinking about safer sex but it is important not to limit ourselves by thinking only in terms of attachment or sexual working models. (As Rutter [1995] noted, attachment is not the whole of relationships, and sexual relationships do not necessarily show attachment qualities.)

Individual-difference approach. A fourth limitation is this study’s individual-difference approach to predicting safer sex behaviour. In conceptualizing attachment styles and working models of sexuality in terms of individual personality traits, the results say nothing about whether they vary within particular relationships, and whether

this makes a difference to the practice of safer sex. According to Feeney and Noller (1996), “it is almost certain that responses to self-report measures of adult attachment reflect...relatively enduring characteristics of the individual, together with aspects of current relationship functioning” (p. 141). This argument implies that the degree to which one is emotionally attached (i.e., feels committed, feels secure) to sexual partners, the kinds of sexual feelings and motives that one experiences, and the consistency of one’s safer sex practices are a “joint function” (Hazan & Shaver, 1994, p. 70) of one’s personality attributes and the behaviour of one’s sexual partners.

Replication. A fifth limitation is that sample size did not permit for cross validation of the results (deriving the solution with some of the cases and testing it on the others). Tabachnick and Fidell (1996) state, for example, that a sample size of between 200 and 300 cases is fairly good for doing a factor analysis while well over 104 cases (especially if a small effect size is anticipated) are needed for testing individual predictors in regression analysis. The current sample would have 121 cases in each subset if the sample was split in half. This is certainly a limitation of the study, as one cannot speculate on the generalizability and the validity of the results.

Generalizability. A sixth limitation pertains to this study’s convenience sample of university students. Young adults attending university are prime candidates for a study of safer sex practices in that sexual exploration and experimentation are the developmental norm for this age group; they tend to be sexually adventurous, whereby their sexual relationships are in flux; and they frequently engage in riskier sexual behaviour (e.g., inconsistent use of condoms). Because heterosexual university students from a fairly traditional student population were the participants in the study, and given the low

prevalence rate of STDs in the sample, it is unclear to what extent the findings are generalizable to samples that are of university age but are not enrolled in university, or to samples recruited from traditionally high-risk categories such as prostitutes, gay men, and injection drug users. Another group that might be considered for study are young adults at university who are sexual "virgins." Depending on the reasons for their lack of sexual activity (e.g., fear, lack of opportunity, choice), data collected on this sample might shed further light on how relational issues such as interpersonal trust and anxiety (attachment) and sexual feelings and motives (working models) translate into safer sexuality.

Prototypical model. Finally, the results of this study are tied to Bartholomew's (1990) model of measuring individual differences in attachment security. Her model, based on four conceptually holistic attachment style prototypes, was used in the present study because of its ability to generate research hypotheses (Brennan & Shaver, 1995). Although her system is "currently the most influential theory of adult attachment in the personality/social literature" (Klohn & John, 1998, p. 133), it has recently been argued that adult attachment is best represented by a dimensional model rather than a prototype model (Fraley & Waller, 1998). Based on their taxometric analysis of attachment data, Fraley and Waller (1998) argue that a dimensional approach to measuring attachment security will advance the field by providing increased reliability, validity, and statistical and analytic power. Several authors have developed empirically-derived, continuous scales to assess dimensions (Brennan et al., 1998; Feeney, Noller, & Hanrahan, 1994). Brennan et al. (1998), for example, have recently produced two 18-item self-report scales--Avoidance and Anxiety--along with 12 lower-order scales that are viewed as "facets" of Avoidance and Anxiety--(1) Partner is a Good Attachment Figure; (2)

Separation Anxiety; (3) Self-Reliance; (4) Discomfort with Closeness; (5) Attachment-Related Anger at Partners; (6) Uncertainty About Feelings for Partners; (7) Discomfort with Dependence; (8) Trust; (9) Lovability/Relational Self-Esteem; (10) Desire to Merge with Partners; (11) Tough-minded Independence; and (12) Fear of Abandonment. It is intriguing to consider how well these attachment-related dimensions predict sexual attitudes, feelings, motives, and safer sex behaviour.

Future Directions

Future work aimed at investigating individual differences in attachment security and their relationship to aspects of human sexuality, including safer sex behaviour, can improve upon the present study by incorporating a number of features. At the very least, future research ought to replicate the results of the present principal component and regression analyses in order to be sure of the findings. Alternatively, future research could use structural equation modeling (SEM; Tabachnick & Fidell, 1996) in order to test whether the measures of sexual attitudes, thoughts, and motives loading on each of the components are reliable, and to confirm the relations between participants' perceptions of their attachment styles, working models of sexuality, and safer sex behaviours. Use of SEM allows one to examine multiple predictors of outcomes simultaneously and to test for potential mediators (Newcomb et al., 1998). The SEM strategy is particularly useful when one has multiple indicators for each construct under study (Holmbeck, 1997). SEM was not applied to the data in this study because only one measure of safer sex behaviour was used. The use of other indicators of safer sex behaviour and the application of SEM are issues to be addressed in future studies.

As a way to more sensitively assess the constructs in this study, future studies might combine self-report measures with romantic partner-report measures, diary techniques, projective tests, or interview-based measures. I would like to interview participants about their responses on the dependent measure, the Safer Sex Behaviour scale, for example. Opportunity for further inquiry into participants' responses (e.g., asking those participants who indicated "Not applicable" on items to explain their responses) would help to more accurately assess the consistency of their safer sex practices.

By studying quality of attachment, attitudes and motives regarding sexuality, and safer sex behaviour from the perspective of both partners in sexual relationships, future research can hopefully provide useful information about the kinds of interpersonal interactions that promote safer sex practices.

Follow-up studies that investigate patterns of attachment that increase or decrease sexual risk taking should consider the relative merits of measuring attachment patterns in terms of two (or more) dimensions rather than four prototypes (Bartholomew & Horowitz, 1991).

Future research that examines features of romantic/sexual relationships in addition to those of an attachment or sexual nature, such as one's general experience of shared humour, balance of control, intimacy, shared positive emotions (Rutter, 1995), and stimulating companionship (Mendelson & Aboud, 1999), may provide additional information about variables that influence safer sex practices.

Future research can extend the present study to other populations. An important direction would be to examine clients at HIV/STD or university health clinics and

determine whether their attachment styles are distinctively related to particular types of risky sexual behaviour and whether certain attachment styles make a person more or less amenable to specific forms of intervention. People with a low degree of emotional security, for example, might have negative feelings of self-worth, lack interpersonal confidence, and/or distrust others such that they would be less amenable, at least in the beginning, to forms of therapeutic intervention that challenge them to explore their expectations of, feelings toward, and ways of relating to their sexual partners(s) and to the therapist; rather than responding to relationally oriented interventions emphasizing affective exploration and self-disclosure, these individuals may respond more favourably to cognitive behaviourally based (eg., social skill building) approaches (Bartholomew & Horowitz, 1991; Lopez & Brennan, 2000).

Finally, future work that collects data at more points in time (e.g., initial assessment, 2 month follow-up) will provide a more adequate look at how safer sex practices (e.g., during the past 12 months, past 2 months, and last sexual encounter) are related to an individual's characteristic style of attachment and his or her working models of sexuality. As well, longitudinal investigations might be informative regarding the stability of attachment style ratings, and whether patterns of attachment in romantic/sexual relationships are the cause or the result of patterns of sexual thought and behaviour.

Conclusions

The thesis of this study was that young adults' general ability to form relationships (attachment style) is associated with the safety of their sexual practices and

that their characteristic sexual thoughts, feelings, and motives (working models of sexuality) partially account for this association.

The results indicated that respondents' sexual feelings, thoughts, and motives revolve around four conceptual issues: negative affect, confidence, power/control, and intimacy/pleasure. Neither negative emotions associated with sex nor desire for sexual intimacy/pleasure was related to safer sex behaviour. In contrast, sexual confidence and interest in sexual power/control were related to safer sexual behaviour: Individuals who were more sexually confident and motivated, as well as those who were more turned on by sexual dominance and control, tended to engage in riskier sex. Hence, being highly sexual as well as having a preference for demanding, forceful sex are possible risk factors for unsafe sexual practices. These findings suggest that a priority during counselling is to explore with clients the extent to which they identify with the above sexual dispositions, talk about how these aspects of their personality might interfere with their practice of safer sex, and indicate strategies for avoiding situations where unsafe sex might possibly occur.

Preoccupied, fearful, and secure styles of attachment were differentially related to negative sexual affect, sexual confidence, and desire for sexual intimacy/pleasure in ways that fit well with previous findings and theory. Interestingly, the dismissing style of attachment was unrelated to these dimensions of sexuality. One might speculate that a dismissing attachment style is associated with alternative dimensions of sexuality, such as autoerotism, a finding that would be consistent with the compulsive self-reliance assumed to characterize this attachment style. Finally, none of the ratings of attachment style (which tap the extent to which one values relatedness with others) were related to ratings

of sexual power/control (which tap interest in issues related to interpersonal force and self-assertion). This last finding provides evidence concerning the discriminative validity of the measures of attachment style.

Findings from this study indicated both direct and indirect associations between attachment style and safer sex behaviour. Specifically, fearful attachment was related indirectly (through sexual confidence) to safer sex behaviour as well as directly (when sexual confidence was statistically controlled) to riskier sexual behaviour. This finding suggests that attempts to promote safer sex behaviour in young adult clients might most effectively involve interventions aimed at tempering their sexual confidence, which in turn might improve the consistency with which they practice safer sex. Attempts to increase personal wariness concerning sexual relations might, for example, involve increasing clients' sense of vulnerability to and their awareness of the long-term consequences of contracting sexually-transmitted diseases.

Secure attachment style was related both directly to safer sex behaviour and indirectly (through sexual confidence) to riskier sex behaviour. This finding suggests that efforts to promote safer sex behaviour in young adults might most effectively involve interventions that address both sexual confidence and attachment security. Hence, in addition to efforts to temper clients' sexual confidence levels as noted above, counsellors should also consider working with clients to directly increase their sense of security in close relationships. The finding that individuals who were more secure (versus dismissing, preoccupied, or fearful) in their close relationships were more consistent in practising safer sex implies that focusing on ways to enhance the emotionally secure aspects rather than to reduce the emotionally vulnerable aspects of an individual's

romantic/sexual relations (a solution-focused strategy, if you will) should be a priority for sexual risk reduction intervention programs. Such efforts to increase emotional security might involve attempts to help clients explore ways of thinking and acting in close relationships that enhance their feelings of openness, comfort, and assurance, an outcome that should increase positive regard for self and others and reduce sexual risk taking.

Lastly, the findings suggest that sexual working models involving feelings of sexual confidence partially explain a relation between attachment style and safer sex practices. That is, working through sexual confidence, fearfulness about attachment tends to enhance, while security of attachment tends to decrease, involvement in safer sex practices. Sexual confidence seems to be a relatively potent mechanism through which attachment style affects safer sex behaviour, although it is not the only influence on the practice of safer sex. Indeed, the significant relationship between secure attachment style and safer sex behaviour separate from sexual confidence suggests that young adults' needs for feeling securely attached (i.e., emotional closeness with one's partner, trust in one's partner, and freedom from fear of abandonment by one's partner) directly contribute to their ability to respond cautiously in sexual encounters.

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Appendix A

Cover Letter for Participants

To: Psychology 110 students

From: Jerry Jellis, Ph.D. candidate (Clinical Psychology)
University of Saskatchewan

Re: Research study (Activity E13)

Please take a few minutes to read this cover letter. It contains important information about the present study and your participation in it. You may keep this letter for future reference.

I am conducting research that is examining the relations among people's characteristic style of relating to others; their sexual feelings, thoughts, and motives; their sexual behaviour; and their background characteristics. You are invited to participate in this study by completing a number of questionnaires. These questionnaires will ask you about your attitudes toward relationships in general, aspects about yourself as a sexual being, facets of your sex life, and additional background characteristics. The questionnaires will take approximately 30 minutes to complete.

Although your participation in this study is greatly appreciated, nevertheless it is entirely voluntary. You may decline to answer any of the items, if you feel uncomfortable. Should you choose to withdraw from the study, your responses will be deleted and destroyed. Withdrawal will not result in loss of credit. If you wish to participate in this study, please return the completed questionnaires in the envelope provided. A completed and returned questionnaire package will indicate your consent to participate in this study.

When you hand in your questionnaire packet, you will be given a debriefing form that will outline the purpose of this study. You also will be given some resource material regarding sexuality.

The information collected for this study will be analyzed on a group rather than on an individual basis, and all information that you provide will be anonymous.

The results of this study will be used in my doctoral research and in any research publication or conference presentation based on my dissertation work. As required by the University of Saskatchewan guideline, the data for this study will be securely stored at the University of Saskatchewan for a minimum of 5 years. My supervisor, Brian Chartier, Ph.D., will be storing the data.

This study may cause some anxiety due to the sexual nature of some of the items. If you feel uncomfortable after you complete the questionnaires, you may wish to

telephone Student Counselling Services (966-4920) or the Student Health Centre (966-5768), both of which have indicated willingness to provide assistance.

If you have any questions or comments concerning the questionnaire package or the project, please call me at 966-4297 or use e-mail (jellis@sask.usask.ca). My supervisor, Brian Chartier, Ph.D., also is available if you wish to contact him (966-8919).

Thank you very much for your time and interest.

Sincerely,

Jerry Jellis, Ph.D. candidate

Appendix B

Relationship Questionnaire (RQ)

1. **Instructions:** Following are descriptions of four general relationship styles that people often report. Please read each description and on the computer sheet **fill in** the letter corresponding to the style that *best* describes you or is *closest* to the way you generally are in your close relationships.
 - A. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.
 - B. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.
 - C. I want to be completely emotionally intimate with others, but I often find that they are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.
 - D. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Instructions: Please rate each of the relationship styles below according to the *extent* to which you think each description corresponds to your general relationship style. For each relationship style **fill in** the letter on the computer sheet that indicates how descriptive it is of you by using the following rating scale:

- | | | | | | | |
|-------------------------------|----------|----------|-----------------------------|----------|----------|------------------------------|
| A | B | C | D | E | F | G |
| not at all
like me | | | somewhat
like me | | | very much
like me |
-
2. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.

 3. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

 4. I want to be completely emotionally intimate with others, but I often find that they are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

 5. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Appendix C

Relationship Scales Questionnaire (RSQ)

Instructions: Please read each of the statements below and rate the extent to which each describes your feelings about close relationships. Think about all of your close relationships, past and present, and respond in terms of how you generally feel in these relationships. Please use the following rating scale to indicate on the computer sheet how descriptive each of the following statements is of you:

	Not at all like me		Somewhat like me		Very much like me
	A	B	C	D	E
6.	I find it difficult to depend on other people.				
7.	It is very important to me to feel independent.				
8.	I find it easy to get emotionally close to others.				
9.	I want to merge completely with another person.				
10.	I worry that I will be hurt if I allow myself to become too close to others.				
11.	I am comfortable without close emotional relationships.				
12.	I am not sure that I can always depend on others to be there when I need them.				
13.	I want to be completely emotionally intimate with others.				
14.	I worry about being alone.				
15.	I am comfortable depending on other people.				
16.	I often worry that romantic partners don't really love me.				
17.	I find it difficult to trust others completely.				
18.	I worry about others getting too close to me.				
19.	I want emotionally close relationship				

	Not at all like me		Somewhat like me		Very much like me
	A	B	C	D	E
20.	I am comfortable having other people depend on me.				
21.	I worry that others don't value me as much as I value them.				
22.	People are never there when you need them.				
23.	My desire to merge completely sometimes scares people away.				
24.	It is very important to me to feel self-sufficient.				
25.	I am nervous when anyone gets too close to me.				
26.	I often worry that romantic partners won't want to stay with me.				
27.	I prefer not to have other people depend on me.				
28.	I worry about being abandoned.				
29.	I am uncomfortable being close to others.				
30.	I find that others are reluctant to get as close as I would like.				
31.	I prefer not to depend on others.				
32.	I know that others will be there when I need them.				
33.	I worry about having others not accept me.				
34.	Romantic partners often want me to be closer than I feel comfortable being.				
35.	I find it relatively easy to get close to others.				

RSQ Subscale Items

RSQ subscales	Items assigned to each subscale
1. Dismissing attachment style	7, 11, 24, 27, 31
2. Preoccupied attachment style	11-R, 13, 21, 30
3. Fearful attachment style	6, 10, 17, 29
4. Secure attachment style	8, 14-R, 15, 20, 33-R

Note: R indicates reversed scoring.

Appendix D

Multidimensional Sexuality Questionnaire (MSQ)

Instructions. Listed below are several statements that concern the topic of sexual relationships. Please read each item carefully and decide to what extent it is characteristic of you. Some of the items refer to a specific relationship. Whenever possible, answer the questions with your most recent partner in mind. If you have never had a sexual relationship, answer in terms of what you think your responses would most likely be. Then, for each statement fill in the response on the computer sheet that indicates how much it applies to you by using the following scale:

- | | Not at all
characteristic
of me | Slightly | Somewhat | Moderately | Very
characteristic
of me |
|---|--|-----------------|-----------------|-------------------|--|
| | A | B | C | D | E |
| 36. | | | | | |
| I am confident about myself as a sexual partner. | | | | | |
| 37. | | | | | |
| I think about sex all the time. | | | | | |
| 38. | | | | | |
| My sexuality is something that I am largely responsible for. | | | | | |
| 39. | | | | | |
| I am very aware of my sexual feelings. | | | | | |
| 40. | | | | | |
| I am very motivated to be sexually active. | | | | | |
| 41. | | | | | |
| I feel anxious when I think about the sexual aspects of my life. | | | | | |
| 42. | | | | | |
| I am very assertive about the sexual aspects of my life. | | | | | |
| 43. | | | | | |
| I am depressed about the sexual aspects of my life. | | | | | |
| 44. | | | | | |
| The sexual aspects of my life are determined mostly by chance happenings. | | | | | |
| 45. | | | | | |
| I sometimes wonder what others think of the sexual aspects of my life. | | | | | |
| 46. | | | | | |
| I am somewhat afraid of becoming sexually involved with another person. | | | | | |
| 47. | | | | | |
| I am very satisfied with the way my sexual needs are currently being met. | | | | | |
| 48. | | | | | |
| I am a pretty good sexual partner. | | | | | |

	Not at all characteristic of me	Slightly	Somewhat	Moderately	Very characteristic of me
	A	B	C	D	E
49.	I think about sex more than anything else.				
50.	The sexual aspects of my life are determined in large part by my own behaviour.				
51.	I am very aware of my sexual motivations.				
52.	I am strongly motivated to devote time and effort to sex.				
53.	I am worried about the sexual aspects of my life.				
54.	I am not very direct about voicing my sexual preferences.				
55.	I am disappointed about the quality of my sex life.				
56.	Most things that affect the sexual aspects of my life happen to me by accident.				
57.	I am very concerned with how others evaluate the sexual aspects of my life.				
58.	I sometimes have a fear of sexual relationships.				
59.	I am very satisfied with my sexual relationship.				
60.	I am better at sex than most other people.				
61.	I tend to be preoccupied with sex.				
62.	I am in control of the sexual aspects of my life.				
63.	I tend to think about my sexual feelings.				
64.	I have a strong desire to be sexually active.				
65.	Thinking about the sexual aspects of my life leaves me with an uneasy feeling.				
66.	I am somewhat passive about expressing my sexual desires.				
67.	I feel discouraged about my sex life.				

	Not at all characteristic of me	Slightly	Somewhat	Moderately	Very characteristic of me
	A	B	C	D	E
68.	Luck plays a big part in influencing the sexual aspects of my life.				
69.	I'm very aware of what others think of the sexual aspects of my life.				
70.	I sometimes am fearful of sexual activity.				
71.	My sexual relationship meets my original expectations.				
72.	I would rate myself pretty favourably as a sexual partner.				
73.	I'm constantly thinking about having sex.				
74.	The main thing which affects the sexual aspects of my life is what I myself do.				
75.	I'm very alert to changes in my sexual desires.				
76.	It's really important to me that I involve myself in sexual activity.				
77.	I usually worry about the sexual aspects of my life.				
78.	I do not hesitate to ask for what I want in a sexual relationship.				
79.	I feel unhappy about my sexual relationships.				
80.	The sexual aspects of my life are largely a matter of (good or bad) fortune.				
81.	I'm concerned about how the sexual aspect of my life appears to others.				
82.	I don't have very much fear about engaging in sex.				
83.	My sexual relationship is very good compared to most.				
84.	I would be very confident in a sexual encounter.				
85.	I think about sex the majority of the time.				
86.	My sexuality is something that I myself am in charge of.				
87.	I am very aware of my sexual tendencies.				

- | | Not at all
characteristic
of me | Slightly | Somewhat | Moderately | Very
characteristic
of me |
|-----|---|-----------------|-----------------|-------------------|--|
| | A | B | C | D | E |
| 88. | I strive to keep myself sexually active. | | | | |
| 89. | I feel nervous when I think about the sexual aspects of my life. | | | | |
| 90. | When it comes to sex, I usually ask for what I want. | | | | |
| 91. | I feel sad when I think of my sexual experiences. | | | | |
| 92. | The sexual aspects of my life are a matter of fate (destiny). | | | | |
| 93. | I'm concerned about what other people think of the sexual aspects of my life. | | | | |
| 94. | I'm not very afraid of becoming sexually active. | | | | |
| 95. | I am very satisfied with the sexual aspects of my life. | | | | |
| 96. | I responded to the above items based on (indicate one only): | | | | |
| | (A) A current sexual relationship. | | | | |
| | (B) A past sexual relationship. | | | | |
| | (C) An imagined sexual relationship. | | | | |

MSQ Subscale Items

MSQ subscales	Items assigned to each subscale
1. Sexual esteem	36, 48, 60, 72, 84
2. Sexual preoccupation	37, 49, 61, 73, 85
3. Internal sexual control	38, 50, 62, 74, 86
4. Sexual consciousness	39, 51, 63, 75, 87
5. Sexual motivation	40, 52, 64, 76, 88
6. Sexual anxiety	41, 53, 65, 77, 89
7. Sexual assertiveness	42, 54-R, 66-R, 78, 90
8. Sexual depression	43, 55, 67, 79, 91
9. External sexual control	44, 56, 68, 80, 92
10. Sexual monitoring	45, 57, 69, 81, 93
11. Fear of sexual relationships	46, 58, 70, 82-R, 94-R
12. Sexual satisfaction	47, 59, 71, 83, 95

Note: R indicates reversed scoring.

Appendix E

The Affective and Motivational Orientation to Erotic Arousal Questionnaire (AMORE)

Instructions. Please be extremely honest and think about yourself very carefully when responding to each statement. There are no right or wrong answers. The questions may appear repetitive, but it is necessary that the questionnaire is constructed in this way. Please be very patient and thoughtful in answering each one.

This questionnaire asks you about reasons that you typically experience sexual feelings or that you become interested in sexual issues or behaviours. When you experience these feelings or interests, you may or may not always act on those feelings. "Sex," "having sex," or "sexual activity" can include sexual behaviour with another person (e.g., your spouse or lover), as well as sexual behaviour by yourself (e.g., masturbation, viewing or reading erotic materials). "Partner" can refer to either your spouse or regular romantic partner or any individual with whom you have sex. If you have never had sex or are not currently involved sexually with anyone, respond to the statements below like you think you would feel if you were involved in a sexual relationship or were sexually active.

Not all reasons for being interested in sexual issues or sexual behaviour may be listed below. Many of the reasons may not describe you well at all. If this is the case, please indicate that they are not true for you when rating them.

If a particular statement describes your typical reaction or feelings well, indicate that it is "Completely true" by filling in the letter "E" on the computer sheet. If a particular statement does not describe you well or is the opposite of the way you feel, indicate that it is "Not at all true" by filling in the letter "A" on the computer sheet. Of course, you may choose any number in between A and E to indicate the degree to which the statement describes you or not.

Please use the rating scale below to indicate how true or descriptive each of the following statements is for you:

**Not at all
true**

**Moderately
true**

**Completely
true**

A

B

C

D

E

(continues on next page)

	Not at all true		Moderately true		Completely true
	A	B	C	D	E
97.	Often when I need to feel loved, I have the desire to relate to my partner sexually because sexual intimacy really makes me feel warm and cared for.				
98.	I enjoy having sex most intensely when I know that it will lift my partner's spirits and improve his or her outlook on life.				
99.	When bad or frustrating things happen to me, many times I feel like engaging in sexual fantasy or doing something sexual to try to get to feeling better.				
100.	Sex is most important to me largely for reproductive reasons.				
101.	Sexual activities and fantasies are most stimulating when my partner seems extremely self-assured and demanding during sex.				
102.	I find that I often feel a sense of superiority and power when I am expressing myself sexually.				
103.	One of the most exciting aspects of sex is the sense of power I feel in controlling the sexual pleasure and stimulation my partner experiences.				
104.	Often while I am engaging in sex or fantasy, the idea that children might result from our sexual behaviour is extremely arousing.				
105.	Frequently, when I want to feel that I am cared for and that someone is concerned about me, relating to my partner sexually is one of the most satisfying ways to do so.				
106.	Often the most pleasurable sex I have is when it helps my partner forget about his or her problems and enjoy life a little more.				
107.	I find sexual behaviour and sexual fantasy most exciting when I can feel forceful and dominant with my partner.				
108.	Thinking about sex or engaging in sex sometimes seems to help me keep on going when things get rough.				
109.	It is frequently very arousing when my partner gets very forceful and aggressive during sex.				

	Not at all true		Moderately true		Completely true
	A	B	C	D	E
110.	I frequently want to have sex with my partner when I need him or her to notice me and appreciate me.				
111.	I especially enjoy sex when my partner and I are trying to have a baby.				
112.	Often engaging in sex with my partner makes me feel like I have established myself as a force to be reckoned with.				
113.	A major reason I enjoy having sex with my partner is because I can communicate how much I care for and value him or her.				
114.	The sensations of physical pleasure and release are major reasons that sexual activity and fantasy are so important to me.				
115.	Sex and sexual fantasies are most exciting when I feel like my partner has totally overpowered me and has taken complete control.				
116.	When I am going through difficult times, I can start feeling better simply by engaging in some type of sexual fantasy or behaviour.				
117.	The idea of having children is not very significant in my feelings about why sexual activity is important to me.				
118.	In many ways, I think engaging in sex and sexual fantasy are some of the most exciting and satisfying activities I can experience.				
119.	Many times it is extremely thrilling when my partner takes complete charge and begins to tell me what to do during sex.				
120.	I really value sexual activity as a way of enjoying myself and adding an element of adventure to my life.				
121.	Often I have a real need to feel dominated and possessed by my partner while we are engaged in sex or sexual fantasy.				
122.	One of the best ways of feeling like an important part of my partner's life is by relating to him or her sexually.				
123.	I find that thinking about or engaging in sexual activity can frequently help me get through unpleasant times in my life.				

	Not at all true		Moderately true		Completely true
	A	B	C	D	E
124.	I often feel like fantasizing about sex or expressing myself sexually when life isn't going very well and I want to feel better about myself.				
125.	Engaging in sexual activity is a very important way for me to experience and appreciate the personal strength and forcefulness that my partner is capable of.				
126.	I find it extremely exciting to be playful and to have fun when I am expressing myself sexually.				
127.	Thinking about sex or engaging in sexual behaviour can frequently be a source of relief from stress and pressure for me.				
128.	I would prefer to have sex primarily when I am interested in having a child.				
129.	Often when my partner is feeling down on life or is unhappy about something, I like to try to make him or her feel better by sharing intimacy together sexually.				
130.	The experience of sexual tension and energy are in many ways the most thrilling and important aspects of sexual activity and fantasy.				
131.	I often feel like having sex with my partner when I need to feel understood and when I want to relate to him or her on a one-to-one level.				
132.	When I need to feel a sense of belongingness and connectedness, sex with my partner is really an important way of relating to him or her.				
133.	Doing something sexual often seems to greatly improve my outlook on life when nothing else seems to be going right.				
134.	I frequently feel like expressing my need for emotional closeness and intimacy by engaging in sexual behaviour or fantasy with my sexual partner.				
135.	Many times when I am feeling unhappy or depressed, thinking about sex or engaging in sexual activity will make me feel better.				
136.	When things are not going well, thinking about sex or doing something sexual is often very uplifting for me and helps me to forget about my problems for a while.				
137.	Engaging in sexual activity is very important to me as a means of feeling powerful and charismatic.				

- | | Not at all
true | | Moderately
true | | Completely
true |
|------|--|----------|----------------------------|----------|----------------------------|
| | A | B | C | D | E |
| 138. | One of the main reasons I am interested in having sex is for the purpose of having children. | | | | |
| 139. | The sense of emotional bonding with my partner during sexual intercourse is an important way of feeling close to him or her. | | | | |
| 140. | One of the most satisfying aspects of engaging in sex is expressing the intensity of my feelings for my partner while we are having sex. | | | | |
| 141. | I often have a strong need to fantasize about sex or to do something sexual when I feel upset or unhappy. | | | | |
| 142. | I really enjoy having sex as a way of exerting dominance and control over my partner. | | | | |
| 143. | I often find it a real turn-on when my partner takes charge and becomes authoritative during sexual activity or fantasy. | | | | |
| 144. | I am often very excited by the sense of power that I feel I have over my partner when I am sexually attractive to him or her. | | | | |
| 145. | Being able to experience my partner's physical excitement and sexual release is incredibly thrilling and stimulating for me. | | | | |
| 146. | I find it very exciting when my partner becomes very demanding and urgent during sex and sexual fantasy, as if he or she needs to possess me completely. | | | | |
| 147. | I frequently become very aroused when I sense that my partner is excited by controlling and directing our sexual activity or fantasy. | | | | |
| 148. | I frequently want to have sex with my partner because I know how much he or she enjoys it and how good it makes my partner feel as a person. | | | | |
| 149. | Expressing myself sexually generally makes me feel personally strong and in control of things. | | | | |
| 150. | I am especially excited by the feeling of domination and being controlled by my partner during sex and sexual fantasy. | | | | |

- | | Not at all
true | | Moderately
true | | Completely
true |
|------|---|----------|----------------------------|----------|----------------------------|
| | A | B | C | D | E |
| 151. | One of the most satisfying features of sex is when my partner really seems to need the love and tenderness it conveys. | | | | |
| 152. | Often the sense of power that I have over my sexual partner can be extremely exhilarating. | | | | |
| 153. | I find it very rewarding when I can help my partner get through rough times by showing how much I care and being sexually intimate with him or her. | | | | |
| 154. | I frequently find it very arousing to be very directive and controlling while having sex with my partner. | | | | |
| 155. | Sexual intercourse is important in creating a great deal of emotional closeness in my relationship with my partner. | | | | |
| 156. | Sharing affection and love during sexual intercourse is one of the most intense and rewarding ways of expressing my concern for my partner. | | | | |
| 157. | The sense of emotional closeness I experience from having sex with my partner is one of the most satisfying ways I know of feeling valued. | | | | |
| 158. | To me, an extremely rewarding aspect of having sex is that it can make my partner feel good about himself or herself. | | | | |

AMORE Subscale Items

AMORE subscales	Items assigned to each subscale
1. Experiencing the power of one's partner	101, 109, 115, 119, 121, 125, 143, 146, 147, 150
2. Emotional value for one's partner	113, 139, 140, 145, 151, 155, 156, 157
3. Relief from stress	99, 108, 116, 123, 124, 127, 133, 135, 136, 141
4. Procreation	100, 104, 111, 117-R, 128, 138
5. Enhancement of power	102, 103, 107, 112, 137, 142, 144, 149, 152, 154
6. Emotionally valued by one's partner	97, 105, 110, 122, 131, 132, 134
7. Nurturance	98, 106, 129, 148, 153, 158
8. Pleasure	114, 118, 120, 126, 130

Note: R indicates reversed scoring.

Appendix F

Safer Sex Behaviour Scale (SSB)

Listed below are activities that pertain to sexual behaviour. Please use the following rating scale to indicate on the computer sheet the degree to which you have engaged in each activity during the past year (note: indicate "Not applicable" if, for example, you have not had sex or if you have not engaged in a particular sexual behaviour):

Always	Almost always	Very often	Somewhat frequently	Occasionally	Rarely	Never	Not applicable
A	B	C	D	E	F	G	H

During the past year

159. I have made a conscious effort to limit my number of new sexual partners.
160. Prior to engaging in sex, I have intentionally questioned my partner(s) about their sexual history.
161. Prior to engaging in sex, I have intentionally questioned my partner(s) about whether they are infected with HIV.
162. Prior to engaging in sex, I have intentionally questioned my partner(s) about their history of being infected with other sexually transmitted diseases (STDs).
163. Prior to engaging in sex, I have requested my partner(s) to have an HIV/STD test.
164. I have abstained from sex as a way of reducing the risk of contracting HIV/STDs.
165. I have delayed sex until I knew my partner(s) well enough to practice safer sex (e.g., use condoms) with them.
166. I have limited my sexual activity to practices that are known to be less risky than vaginal, oral, and anal intercourse (e.g., heavy petting, mutual masturbation).
167. I have limited my use of alcohol and drugs before engaging in sexual activities.
168. I have used condoms when engaging in vaginal intercourse.
169. I have used condoms/barriers when engaging in oral sex.
170. I have used condoms when engaging in anal intercourse.

Appendix G

Background Questionnaire

Listed below are several items that concern personal characteristics. Please read each item carefully and provide either the appropriate answer or place a check mark next to the statement that pertains to you personally. All of your responses will remain strictly anonymous. Please answer the following items on the questionnaire itself, not on the computer sheet.

1. Age (in years): ____
2. Sex: ____ female ____ male
3. Racial/Ethnic background: ____ Aboriginal ____ Asian ____ Black ____ Hispanic
____ Interracial ____ White ____ other
4. Sexual orientation: ____ bisexual ____ gay ____ heterosexual ____ lesbian ____ other
5. Current marital status: ____ common law ____ engaged ____ married
____ separated or divorced ____ single ____ widowed
6. Current romantic relationship involvement: ____ not seeing or dating anyone
____ seeing or dating someone
(indicate number of ____ years ____ months)
____ involved in a serious (committed) relationship
(indicate number of ____ years ____ months)
7. Sexual experience: ____ have never been involved in a sexual relationship
____ have been involved in a sexual relationship
8. History of sex partners: ____ number of sex partners in past year
(if unsure, put approximate number)
____ number of sex partners in past 2 years
(if unsure, put approximate number)

9. Current sexual relationship involvement (check one):

☐ not involved in a sexual relationship☐ involved in a sexually nonexclusive (nonmonogamous) relationship☐ involved in a sexually exclusive (monogamous) relationship

10. Do you feel comfortable and secure in regard to your current sexual relationship involvement?:

☐ yes ☐ somewhat ☐ no

11. History of sexually-transmitted diseases (STDs):

☐ have never had any STDs☐ have had STDs

type of STDs that you have had:

☐ chlamydia☐ genital herpes☐ genital warts☐ gonorrhea☐ hepatitis B☐ HIV☐ syphilis☐ other _____

do you currently have any STDs?

☐ no☐ yes

type of STDs that you currently have:

Appendix H

Participant Debriefing Form

To: Participants in study (Activity E13)

From: Jerry Jellis, Ph.D., candidate (Clinical Psychology)
University of Saskatchewan

Re: Feedback

Thank you very much for participating in this study. Your input is greatly appreciated.

The purpose of this study is to examine the relations among emotional attachments; sexual thoughts, feelings, and motives; and precautionary sexual behaviours in students attending university. The information that you provided will be used to test a theoretical model that suggests that one's attachment style affects one's sexual feelings and behaviour, including the practice of safer sex. The information that you provided will help to clarify how attitudes to relationships might be translated into patterns of safer sexual behaviour. This knowledge is particularly relevant to sexually transmitted disease prevention efforts among university students who tend as a group to be sexual risk-takers and thus relatively vulnerable to infection.

Some of the questionnaire items are of a sexual nature and may have been disturbing to some individuals. If this applies to you, the following student services are available to assist you: Counselling Services (966-4920) and the Student Health Centre (966-5768).

If you have any questions, concerns, or if you would like to receive a copy of the results of this study, please contact me at 966-4297 or e-mail me at jellis@sask.usask.ca. My supervisor, Brian Chartier, Ph.D., also is available if you wish to contact him (966-8919).

Again, thank you for your time and effort.

Sincerely,

Jerry Jellis, Ph.D. candidate