



Predictors of young dating adults' inclination to engage in extradyadic sexual activities: A multi-perspective study

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Using a multi-perspective vignette design, we explored predictors of young peoples' ($N = 119$) propensity to engage in unfaithful activities while dating. Demographic measures, a dating investment model, and measures of functional and dysfunctional impulsivity were used to predict inclination to engage in each of two extradyadic activities (kissing and sexual activity). The results of moderated multiple regression analyses revealed that a respondent's number of sexual partners, level of dysfunctional impulsivity, satisfaction with current relationship, and quality of relationship alternatives significantly predicted inclination to engage in both of the extradyadic activities. Consistent with previous findings, gender only showed significant predictive value in relation to extradyadic sex inclination. Moreover, the association between sex, love, and marriage interacted with gender in the prediction of both extradyadic activities and interacted with commitment in the prediction of extradyadic sex inclination. Suggestions for future research in this area are offered in light of these new findings.

Individuals involved in romantic relationships typically possess an implicit understanding of the extent to which their involvement in certain interpersonal behaviours is expected to be exclusive to the partnership (Moore-Hirschl, Parra, Weis, & Laflin, 1995; Wiederman & Hurd, 1999). Exclusive relationships constitute a societal norm in many countries, including Australia (de Vaus, 1997), America (Treas & Giesen, 2000; Wiederman & Hurd, 1999), Spain (de Roda, Martinez-Inigo, de Paul, & Yela, 1999) and Britain (Wellings, Field, Johnson, & Wadsworth, 1994). Furthermore, the exclusivity norm has been found to predominate in married, cohabiting, and dating couples (Treas & Giesen, 2000).

Research investigating infidelity has traditionally focused on the extradyadic involvement of married individuals. However, dating and cohabiting couples have begun to be investigated recently. In their pioneering study of dating infidelity, Roscoe, Cavanaugh, and Kennedy (1988) required older adolescents to report their perceptions of behaviours that constitute infidelity during dating, and the consequences they anticipate might arise from unfaithfulness. Young adults reported that dating infidelity

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comprised both extradyadic kissing and extradyadic sexual intercourse. This finding is congruent with previous findings that extra-marital infidelity comprises extradyadic activities spanning a continuum of sexual behaviours (Buunk, 1980; Edwards, 1973), and establishes a basis for comparisons between dating infidelity and extra-marital infidelity. The consequences of sexual infidelity for the dyad are also comparable across relationship contexts. Spousal unfaithfulness often results in separation or divorce (Buunk, 1980), while dating infidelity most frequently results in relationship termination (Roscoe *et al.*, 1988).

The present study aims to determine precursors to extradyadic activity for individuals who are involved in exclusive dating relationships, since individuals involved in non-exclusive relationships cannot break a commitment to exclusivity, where such a commitment does not exist.

Theoretical framework

Perhaps the most appropriate theoretical model for prediction of dating infidelity is the investment model (Rusbult, 1980, 1983). Unlike various other approaches (e.g. equity theory, evolutionary theory), the investment model provides a broad framework that accommodates links between a variety of variables (Drigotas, Safstrom, & Gentilia, 1999). The bases of dependence are satisfaction, quality of alternatives (i.e. the apparent appeal of the best alternative to the relationship), and investment size. Commitment to the relationship is seen as emerging as a consequence of dependence (Rusbult, 1980; Rusbult & van Lange, 1996).

Kelley *et al.* (1983) extended the investment model by proposing that factors that affect either partner or their environment may be expected to impact on the relationship. The broader model incorporates person factors (P) such as attitudes and personality, relationship factors (R) such as commitment and satisfaction, and environment factors (E), including quality of alternatives and opportunities for undetected extradyadic activity. To the best of our knowledge, no study of dating infidelity has employed a multi-perspective model that incorporates variables from all three categories.

Person (P) variables

Despite reporting negative attitudes towards extradyadic activity, a majority of people actually engage in acts of infidelity (Drigotas *et al.*, 1999). Impulsivity does not appear to have been investigated in relation to infidelity, although it is widely seen as a predictor of maladaptive behaviours (e.g. Levine & Jackson, 2004) and as a basis for personality in general (Jackson, 2003; Jackson & Francis, 2004; Jackson & Smillie, 2004). Dysfunctional impulsivity can be distinguished from functional impulsivity (Dickman, 1990). We predict that a maladaptive lack of forethought will predict extradyadic activity even when individuals report non-acceptance of the behaviour. Moreover, it is anticipated that functional impulsivity, which involves little forethought in situations where such a style will initiate favourable outcomes (Dickman, 1990), will not predict infidelity.

Much of the infidelity literature has investigated sex-related attitudes, such as the extent to which individuals hold a cognitive association of sex, love, and marriage as experiences that belong together (e.g. Weiss, Slosnerick, Cate, & Sollie, 1986; Wiederman & Hurd, 1999). The sex-love-marriage association is measured using the sex-love-marriage (SLM) scale (Weiss *et al.*, 1986), and has demonstrated significant negative correlations with measures of infidelity. For example, undergraduate university students

who dissociate sex, love, and marriage have been found to have a history of extradyadic sexual intercourse (Weiss *et al.*, 1986) and to be more likely to accept hypothetical extra-marital sexual activities (Weiss *et al.*, 1986; Weiss & Slosnerick, 1981). However, recent research found that university students with high and low sex-love-marriage scores reported equally extensive histories of engaging in extradyadic sexual activities while dating (Wiederman & Hurd, 1999). This result constitutes an attitude-behaviour discrepancy comparable to those observed with measures of acceptance of extradyadic activity, discussed previously. If attitude-behaviour discrepancies are the result of participants' lack of self-control (i.e. impulsivity) as proposed, the effect of sex-love-marriage may depend on participants' levels of impulsivity. Therefore, the present study will consider sex-love-marriage, impulsivity, and the potential interaction between them, as possible predictors of extradyadic inclination.

Other person variables of interest include age and gender. Previous studies have reported that age is not a significant predictor of infidelity during dating (Wiederman & Hurd, 1999) or marriage (Buss & Shackelford, 1997; Thompson, 1983). However, age is used as a control variable in the present study to ensure that time- or age-related measures, for example, relationship duration, are not contaminated by its covariance.

Gender has been found to relate significantly to measures of infidelity. It has been found that male college students report a significantly greater incidence of prior extradyadic sexual activities than females (Hansen, 1987; Wiederman & Hurd, 1999). The gender difference detected in Hansen's (1987) study held for all measured extradyadic activities; that is, erotic kissing, petting, and vaginal intercourse, whereas Wiederman and Hurd (1999) found that the incidence of 'extradyadic romantic kissing' was exempt from gender effects. Despite this slight inconsistency, the findings suggest that, among dating individuals, gender influences engagement in a variety of extradyadic sexual activities.

Interpersonal differences in sexual history have also been investigated as correlates of infidelity. In an American study sampling married and cohabiting adults, individuals' self-reported cumulative incidence of extradyadic sex was found to be significantly predicted by the number of previous sexual partners (Treas & Giesen, 2000). The authors argued that individuals who are more sexually experienced can be expected to show a higher likelihood of engaging in extradyadic sex due to their 'learned advantage'; that is, extensive sexual experience may mean the individual is more skilled in the recognition of sexual advances and recruitment of sex partners. It is therefore speculated that an inclination towards dating infidelity may be related to an individual's number of sexual partners. Although for some individuals, their number of sexual partners may be strongly related to the age at which they experienced their first sexual encounter, both variables were included in the present study to assess whether extradyadic inclination appears to relate to a learned advantage or an orientation towards sexual experimentation, or possibly both. A tendency towards sexual experimentation is said to be reflected by earlier sexual experience (Reiss, Anderson, & Sponaugle, 1980). This variable has not previously been investigated as a correlate of dating infidelity.

Environment (E) variables

The further variable included in the investment model prediction of dating infidelity investigated by Drigotas *et al.* (1999) was the quality of relationship alternatives. Quality of alternatives was found to have a significant positive correlation with extradyadic physical intimacy (Drigotas *et al.*, 1999). This result is consistent with the finding

that older adolescents nominated attraction to someone other than the established partner as one of the reasons why unfaithfulness may occur in dating relationships (Roscoe *et al.*, 1988).

Relationship (R) variables

Research into dating infidelity has not specifically assessed relationship duration as a predictor of extradyadic activity. However, in a sample of university staff and students, fantasies about extradyadic sexual involvement were found to show a significant positive association with relationship duration (Hicks & Leitenberg, 2001). Furthermore, married and cohabiting adults whose relationships are of longer duration report a significantly greater incidence of previous infidelities (Treas & Giesen, 2000). This finding was explained in terms of habituation, where the likelihood of infidelity will increase over time due to decreased marital benefits; for example, reduced frequency of sexual intercourse. These findings provide a rationale for investigating relationship duration as a predictor of dating infidelity; however, the effects of relationship duration are not necessarily expected to operate in the same direction as for married individuals. Application of the habituation hypothesis to married couples (Treas & Giesen, 2000) is plausible because research has shown that frequency of sexual intercourse declines with marriage duration (Call, Sprecher, & Schwartz, 1995; Wellings *et al.*, 1994). However, it is not known whether the frequency of intercourse declines over time as consistently in dating relationships. Moreover, it is possible that dating relationships become more committed and intimate with duration, leading to a decreased likelihood of extradyadic sexual involvement. Therefore, the present study was unique in its exploratory inclusion of relationship duration as a predictor of dating infidelity.

Low relationship satisfaction has consistently demonstrated significance in the prediction of infidelity. In a study that required older adolescents to nominate reasons why an individual might engage in extradyadic activities while dating, relationship dissatisfaction was the most common reason provided (Roscoe *et al.*, 1988). Furthermore, in a sample of heterosexual university students in dating relationships, low relationship satisfaction accounted for 18.49% of the variance in a measure of recent acts of physically intimate behaviour involving an extradyadic partner (Drigotas *et al.*, 1999). Using the Investment model scale (Rusbult *et al.*, 1998) to predict dating infidelity, the authors also measured commitment and investment size, both of which were found to be significant negative predictors of recent acts of physically intimate extradyadic activity (Drigotas *et al.*, 1999). Consistent with this finding, researchers have suggested that individuals who are more committed to their present dating partner, and have invested more in the present relationship, are less likely to engage in extradyadic activities because the risk of loss is heightened with increased commitment and investment (Roscoe *et al.*, 1988).

Criterion for prediction

To overcome the issue of social desirability bias resulting in under-reporting of actual acts of infidelity (Johnson, 1970), the present study sought an alternative measure that reflects an individual's likelihood of engaging in extradyadic activity, while also accounting for perceived opportunity for infidelity. The criterion measure in the present study is labelled 'inclination to engage in extradyadic activity', and is based on a composite of items measuring the participant's temptation to engage in extradyadic activity and the likelihood that they would do so.

The present study

Consistent with the investment model of infidelity (Drigotas *et al.*, 1999; Rusbult, 1980, 1983), the three bases of dependence were investigated as predictors of infidelity, as was commitment. In addition, several person factors were investigated, consistent with Kelley *et al.*'s (1983) model of influences on close relationships, which proposes that person factors (P) should be investigated alongside environment variables (E) and relationship factors (R). Age was included as a control variable.

In terms of person variables, gender, age of first sexual encounter, number of sexual partners, sex-love-marriage, and dysfunctional impulsivity were assessed as possible predictors of extradyadic inclination. Functional impulsivity was included as a predictor variable for exploratory purposes to clarify the importance of Dickman's (1990) distinction between the two different types of impulsivity.

The environment (E) variable of quality of relationship alternatives was expected to show a significant positive correlation with the criterion.

Of the relationship (R) factors investigated in the present study, it was hypothesized that relationship satisfaction, investment size, and commitment would each show significant negative correlations with the criterion. It was further hypothesized that relationship duration would show a positive relationship with the criterion.

Previous studies of dating infidelity have failed to examine any of the potential interactions among person and relationship variables. To extend prior research, the present study investigated three hypothesized interactions.

First, it was hypothesized that commitment may interact with sex-love-marriage in predicting extradyadic inclination. Drigotas *et al.* (1999) found that commitment mediated the effects of satisfaction, investment size, and quality of alternatives in the prediction of extradyadic activity. Given that commitment was therefore found to be the key investment model variable directly influencing infidelity, it was considered appropriate to investigate the potential interaction between commitment and sex-love-marriage. Specifically, it was hypothesized that individuals high in commitment would show no difference in extradyadic inclination at different levels of sex-love-marriage, whereas the extradyadic inclination of individuals low in commitment would be significantly effected by their sex-love-marriage levels. The rationale for this hypothesis is that commitment is relationship-specific (Drigotas *et al.*, 1999), whereas sex-love-marriage is a more global attitudinal measure of an individual's beliefs about sex, love, and marriage, which are not specific to one particular relationship (Weiss *et al.*, 1986). Therefore, it was speculated that individuals who are highly committed to their present relationships would not be inclined to stray, irrespective of their global attitudes. In contrast, individuals who are low in commitment to the specific relationship may be more inclined to act according to their global ideals.

Second, a gender by sex-love-marriage interaction was hypothesized. It has been suggested that females exhibit behaviour that is more consistently congruent with their beliefs, whereas males are more likely to engage in activities that are not necessarily in line with their reported beliefs or values (Corey, 1989). It was therefore hypothesized that the extradyadic inclination of females would vary according to their levels of sex-love-marriage, whereas males' extradyadic inclination would not reliably differ at different levels of sex-love-marriage.

Third, it was hypothesized that dysfunctional impulsivity and sex-love-marriage would interact such that dysfunctional impulsivity would moderate the relationship between sex-love-marriage and extradyadic inclination. Extradyadic inclination would vary according to sex-love-marriage levels only for individuals low in dysfunctional

impulsivity. Consistent with the theory of planned behaviour (Ajzen, 1989), it was anticipated that individuals with low self-control over their behaviour (i.e. high dysfunctional impulsivity) would be less likely to engage in behaviour congruent with their attitudes.

The hypotheses stated above reflect expected outcomes for each of the criterion measures employed in the present study (i.e. extradyadic sex and extradyadic kissing). Because of inconsistencies in the definition of the criterion measures used in past studies, the body of existing research literature does not lend itself to the formulation of separate hypotheses for each extradyadic activity.

In the present study, the term 'physically intimate behaviour of a sexual nature' was employed to encompass all extremely intimate sexual activities, including those that may not involve direct genital contact.

Method

Participants

Participants were 46 male and 77 female heterosexuals ($N = 123$), recruited as volunteers at the University of Queensland. Each participant was required to be in a dating relationship that they classed as 'sexual' at the time of the study (mean duration = 17 months). All participants completed a purpose-built Relationship Boundaries Questionnaire in which they rated the extent to which each of several extradyadic activities were acceptable within their present relationship, or constituted relationship transgressions. This was done to ensure that the sample only comprised people in an exclusive dating relationship. One participant - a male respondent - reported acceptability of extradyadic activities within his relationship, and was therefore removed. A further three cases were removed due to incomplete data. The final sample therefore comprised 43 males and 76 females ($N = 119$) aged between 17 and 25 years ($M = 20.02$, $SD = 2.10$).

Materials

Within each questionnaire booklet, the order of presentation of the questionnaires was randomized via computer to avoid systematic carryover effects.

Standard Questionnaires

Sex, love, and marriage scale (SLM; Weiss et al., 1986). Cognitive association between sex, love, and marriage was measured using the 8-item SLM scale (e.g. 'sexual intercourse is better - more enjoyable, intense and satisfying - if the sex partners are married to each other'). Response options range from 1 (*strongly disagree*), through 3 (*neither agree nor disagree*), to 5 (*strongly agree*). A high sex-love-marriage score reflects the respondent's belief that sexual interactions are more appropriate and fulfilling when they occur between partners who love one and other and are married, whereas a low score indicates a respondent's disassociation of sex, love, and marriage.

Investment model scale (Rusbult et al., 1998). The Investment model scale measures satisfaction level, quality of alternatives, investment size, and commitment level with response options ranging from 0 (*do not agree at all*) through 4 (*agree somewhat*), to 8 (*agree completely*). Several subscales are preceded by unscored 'facet' items, designed to prime participants' responses by activating thoughts about the construct.

The relationship satisfaction subscale comprises five items assessing the valence of affect experienced in the relationship (e.g. 'our relationship is close to ideal'). The quality of alternatives subscale comprises five items designed to measure the perceived desirability of the best available alternative to the current relationship (e.g. 'The people other than my partner with whom I might become involved are very appealing'). Investment size is measured by five items (e.g. 'I have put a great deal into our relationship that I would lose if the relationship were to end'). The commitment subscale comprised seven items designed to measure the participant's intention of continuing the relationship (e.g. 'I feel very attached to our relationship - very strongly linked to my partner'). Composite scores for each of the subscales are obtained by summing across the global items relevant to the subscale.

Dickman's functional and dysfunctional impulsivity scale (Dickman, 1990). This scale measures functional and dysfunctional impulsivity and comprises 23 Likert items, each requiring respondents to rate their level of agreement with a statement on a 6-point scale, ranging from 1 (*completely disagree*) to 6 (*completely agree*). The dysfunctional impulsivity subscale comprises 12 items designed to measure the respondent's tendency to act undesirably without forethought (e.g. 'I will often say whatever comes into my head without thinking first'). The functional impulsivity subscale comprises 11 items measuring a tendency to act desirably but without forethought (e.g. 'Most of the time, I can put my thoughts into words very rapidly').

Purpose-built measures

Demographic Questionnaire. The demographic questionnaire required participants to record, in years and months, their age, duration of current relationship, and age at which they first engaged in physically intimate behaviour of a sexual nature. Participants also recorded their gender and partner's gender.

Attraction Questionnaire. The Attraction Questionnaire was designed to measure a respondent's inclination to engage in each of the extradyadic activities (kissing and sex). It was inspired by the Infidelity scale (Drigotas *et al.*, 1999), although the main body of the two measures differs substantially.

To facilitate imagery for responding to hypothetical events, the instructions required the participant to bring to mind the person to whom they are most attracted (other than their current partner). To ensure that the hypothetical situations to which individual participants responded were as standardized as possible, vignettes were provided in each section of the questionnaire. The vignette pertaining to extradyadic kissing, in Section A, read:

Imagine that sometime within the next month, while you are still dating your current boyfriend/girlfriend, this other person who you are attracted to attempts to passionately kiss you. Think about how you would feel and behave.

Section B, which focused on extradyadic sex, was identical to Section A, with the exception that the term 'passionately kiss' was replaced with the term 'physically intimate behaviour (of a sexual nature)'.

Following each vignette were four 6-point Likert items. Three questions assessed several aspects of inclination to engage in the relevant activity: temptation ('how tempted would you be to kiss this other person?'), likelihood ('how likely is it that you would actually kiss this other person?') and likelihood if undetectable ('if you could be

absolutely certain that your boyfriend/girlfriend would not find out, how likely is it that you would kiss this other person?'). Response options were tailored to each item, but followed the same basic progression: 1 (*not at all*), 2 (*very slightly*), 3 (*slightly*), 4 (*quite*), 5 (*very*), and 6 (*extremely*). Prior to the 'likelihood if undetectable' item for each extradyadic activity, an additional item was included to assess the respondent's perceived likelihood of detection by their partner merely for the purpose of priming respondents to contemplate whether any restraint they may be reporting might be attributable to aversive consequences if their partner were to find out.

Intimacy of extradyadic activities. This section required participants to score the extradyadic activities in terms of their perceptions of the relative level of intimacy involved with each. Participants wrote the number '1' next to the activity they considered to be most intimate and a '2' next to the activity that involved less intimacy.

Results

Are kissing and sex distinct extradyadic activities?

For each of the sections of the Attraction Questionnaire, three of the four items were averaged to form two scales called extradyadic kissing inclination and extradyadic sex inclination. Therefore, the possible score range for each scale was 1 to 6, with 6 indicating an extreme inclination towards extradyadic activity. Congruent with expectations, the priming item in each section (which enquired about the participant's perceived likelihood of detection by their partner) did not show high intercorrelation with the other three items. Therefore, reliability analyses pertaining to the extradyadic kissing inclination and extradyadic sex inclination scales tested the internal consistency of the three items measuring inclination to engage in extradyadic kissing and extradyadic sex, respectively. Coefficient alphas for each of these scales are good and displayed in Table 1. Also evident in Table 1, is the high intercorrelation between the scales of extradyadic kissing and sex inclination, which indicates that there was a great deal of similarity between the scales. What is different about sex and kissing inclination, however, is that they differ in terms of intimacy (as shown by the intimacy questionnaire). As expected, an independent groups *t* test revealed that sex ($M = 1.25$) was rated as more intimate than kissing ($M = 1.79$), $t(117) = 8.73$, $p < .001$.

Descriptive statistics

Table 1 shows the means, standard deviations, alpha reliabilities and correlations of all the scales used in this study. All the alpha reliabilities are excellent, except for sex-love-marriage association which is relatively low ($\alpha = .59$). Most of our independent variables (number of sexual partners, sex-love-marriage association, quality of alternatives, investment, commitment and dysfunctional impulsivity) significantly predicted both extradyadic kissing and sex inclination. Age of first sexual encounter only significantly predicted extradyadic kissing inclination. Generally our independent variables were not intercorrelated, except for investment and commitment, which were both significantly intercorrelated and correlated with sex-love-marriage association and quality of alternatives. Sex-love-marriage association was mildly correlated with all our independent variables.

Table 1. Descriptive statistics, reliability coefficients and correlation matrix for all predictor and criterion variables

Variable	M (SD)	α	2	3	4	5	6	7	8	9	10	11	12	13	14
Age (1)	20.02 (3.00)	–	–.27**	.38***	.28***	.39***	.02	.04	.01	–.16*	.13	.07	–.23**	–.05	.04
Gender (2)	–	–	–	–.05	–.07	–.20*	.05	.05	–.15*	.06	.05	–.19*	.06	–.10	–.28***
Relationship duration (3)	16.69 (14.24)	–	–	–	–.20*	.06	.03	.02	–.05	.11	.24**	.05	–.04	–.11	–.11
Age of first sexual encounter (4)	16.80 (1.73)	–	–	–	–	–.36***	.11	.01	–.06	–.07	.04	–.11	–.29***	–.17*	–.10
Number of sexual partners (5)	4.34 (4.62)	–	–	–	–	–	–.10	–.09	.02	–.15	–.09	.11	.07	.23**	.24**
Sex-love-marriage (6)	26.19 (4.70)	.59	–	–	–	–	–	.17*	–.20*	.21**	.31***	–.16*	–.29***	–.29***	–.31***
Satisfaction (7)	32.40 (6.01)	.91	–	–	–	–	–	–	–.14	.20*	.60***	–.00	–.05	–.36***	–.35***
Quality of alternatives (8)	19.39 (8.42)	.85	–	–	–	–	–	–	–	–.48***	–.39***	.06	.04	.35***	.32***
Investment (9)	25.54 (8.51)	.83	–	–	–	–	–	–	–	–	.40***	.06	.05	–.18*	–.16*
Commitment (10)	43.24 (11.56)	.88	–	–	–	–	–	–	–	–	–	–.02	–.15	–.45***	–.41***
Functional impulsivity (11)	41.24 (8.08)	.78	–	–	–	–	–	–	–	–	–	–	.26**	–.07	.03
Dysfunctional impulsivity (12)	35.48 (10.05)	.86	–	–	–	–	–	–	–	–	–	–	–	.34***	.24**
Extradyadic kissing inclination (13)	2.51 (1.37)	.91	–	–	–	–	–	–	–	–	–	–	–	–	.86***
Extradyadic sex inclination (14)	2.03 (1.21)	.87	–	–	–	–	–	–	–	–	–	–	–	–	–

* $p < .05$, ** $p < .01$, *** $p < .001$.

Regression analyses

Two moderated multiple regressions were performed on the full data set, with extradyadic sex inclination and extradyadic kissing inclination as the dependent variables. In each analysis, age was entered as a control variable on the first step, to partial out its effects. Nine predictor variables (gender, age of first sexual encounter, number of sexual partners, sex-love-marriage, satisfaction, quality of alternatives, investment, commitment and dysfunctional impulsivity) were included at the second step. Since they were redundant as predictors (See Table 1), relationship duration and functional impulsivity were excluded from the analysis to increase the ratio of cases to variables. At the third step, three interaction terms derived using mean-centred data (sex-love-marriage \times commitment, sex-love-marriage \times gender, and sex-love-marriage \times dysfunctional impulsivity) were added.

Predicting inclination to engage in extradyadic sex

Table 2 shows the results of the hierarchical regression predicting extradyadic sex inclination. After Step 1, with age in the equation, R^2 was not significantly different from zero, which is consistent with expectations that age would not predict extradyadic sex inclination. At Step 2, there was a significant increment in R^2 , $\Delta R^2 = .36$, $F(9, 108) = 6.74$, $p < .001$, indicating that the nine predictors significantly predicted extradyadic sex inclination. The addition of the three two-way interactions at Step 3 resulted in a significant increase in R^2 , $\Delta R^2 = .08$, $F(3, 105) = 5.28$, $p < .01$, indicating that three interaction terms were significant additional predictors of extradyadic sex

Table 2. Moderated multiple regression of person, other and environment variables on extradyadic sex inclination

Step	Variable	β	sr_i	sr_i^2	t	R^2	ΔR^2	F
1	Age	-0.036	-.027		-0.371	.001	.001	0.150
2	Gender	-0.160	-.147	2.16%	-2.020*	.360	.359	6.735***
	Age of first sexual encounter	0.080	.062		0.852			
	Number of sexual partners	0.225	.168	2.82%	2.311*			
	sex-love-marriage	0.043	.027		0.378			
	Satisfaction	-0.222	-.167	2.79%	-2.297*			
	Quality of alternatives	0.254	.205	4.20%	2.819**			
	Investment	0.094	.075		1.025			
	Commitment	-0.077	-.050		-0.684			
	Dysfunctional impulsivity	0.163	.147	2.16%	2.019*			
3	Sex-love-marriage \times commitment	0.214	.190	3.61%	2.608**	.444	.084	5.275**
	Sex-love-marriage \times Gender	-0.289	-.193	3.72%	-2.649**			
	Sex-love-marriage \times dysfunctional impulsivity	0.002	.002		0.026			

* $p < .05$, ** $p < .01$, *** $p < .001$.

N. B. Unique variance values are provided for significant predictors only. Unique variance contributed by non-significant predictors is negligible.

inclination. With all predictor variables and interaction terms in the equation, R was significant, $F(13, 105) = 6.45$, $p < .001$, and together the predictors accounted for 44.40% of the variance in extradyadic sex inclination.

Table 2 also provides a summary of the relative importance of the predictors at each step of the regression. In the context of the full model, five predictors and two interaction terms - sex-love-marriage \times commitment, $t(105) = 2.61$, $p < .01$ and sex-love-marriage \times gender, $t(105) = -2.65$, $p < .01$ - were significant predictors. Consistent with predictions, gender, $t(105) = -2.02$, $p < .05$ (in which males have greater extradyadic sex inclination than females) was significant. Satisfaction was a negative predictor, $t(105) = -2.30$, $p < .05$, while number of sexual partners, $t(105) = 2.31$, $p < .05$, quality of alternatives, $t(105) = 2.82$, $p < .01$, and dysfunctional impulsivity, $t(105) = 2.02$, $p < .05$, were positive predictors of extradyadic sex inclination. The largest unique contribution to prediction of extradyadic sex inclination was made by quality of alternatives ($sr_i^2 = 4.20\%$), followed by the gender \times sex-love-marriage interaction ($sr_i^2 = 3.72\%$), sex-love-marriage \times commitment ($sr_i^2 = 3.61\%$), number of partners ($sr_i^2 = 2.82\%$), satisfaction ($sr_i^2 = 2.79\%$), gender ($sr_i^2 = 2.16\%$), and dysfunctional impulsivity ($sr_i^2 = 2.16\%$).

A plot of the interaction between sex-love-marriage and relationship commitment (see Fig. 1) showed that for individuals with low commitment, extradyadic sex inclination was significantly greater when sex-love-marriage was low than when sex-love-marriage was high, $t(115) = -3.68$, $p < .001$. For individuals high in commitment, extradyadic sex inclination did not vary significantly at different levels of sex-love-marriage, $t(115) = -0.018$, *ns*. High and low commitment groups were determined by the top and bottom 33% of commitment scores, respectively.

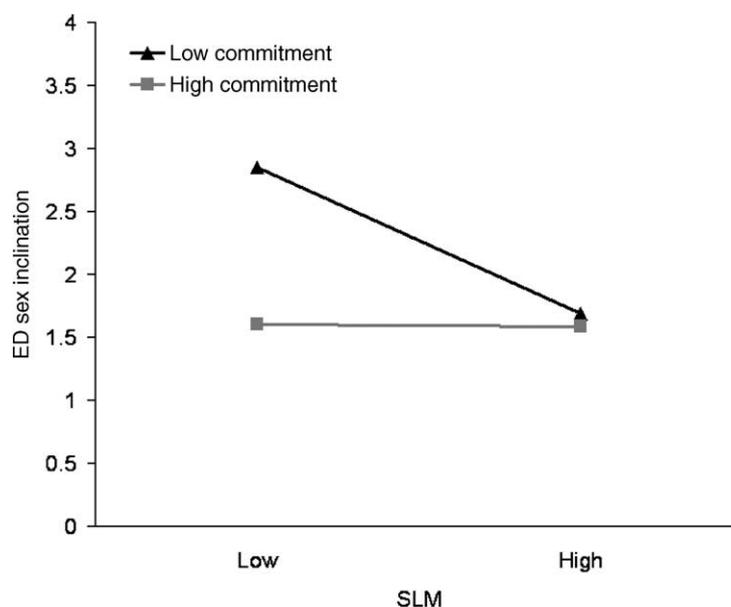


Figure 1. The interaction between sex-love-marriage and commitment in prediction of extradyadic sex inclination.

N. B. The main effects of sex-love-marriage and of commitment have been partialled out.

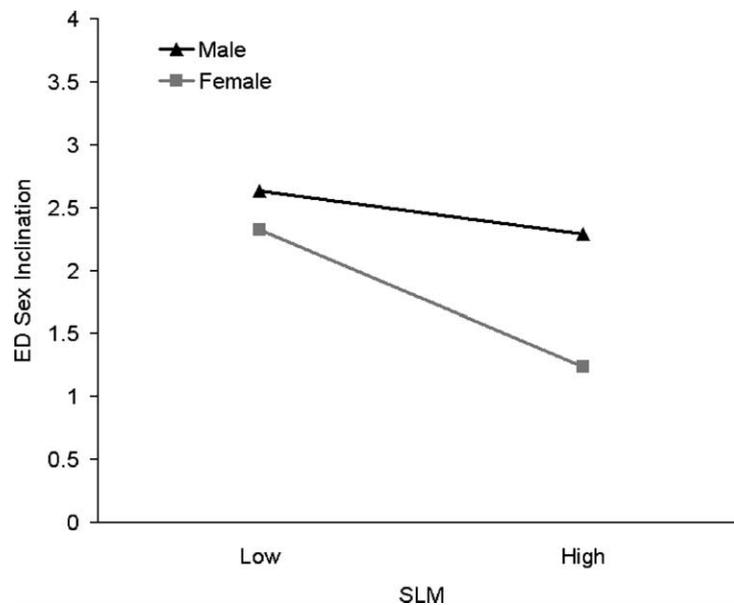


Figure 2. The interaction between sex-love-marriage and gender in prediction of extradyadic sex inclination.

N. B. The main effects of sex-love-marriage and of gender have been partialled out.

The plot of the significant interaction between sex-love-marriage and gender revealed that females' inclination to engage in extradyadic sex was significantly greater among those for whom sex, love and marriage were highly dissociated rather than associated, $t(115) = -3.83$, $p < .001$. However, males' inclination to engage in extradyadic sex did not differ significantly at different levels of sex-love-marriage, $t(115) = -1.18$, ns (see Fig. 2).

Predicting inclination to engage in extradyadic kissing

Table 3 displays results for each step of the hierarchical regression predicting inclination to engage in extradyadic kissing. After Step 1, with age in the equation, R^2 was not significantly different from zero, consistent with expectations that age would not predict extradyadic kissing inclination. There was a significant increment in R^2 , $\Delta R^2 = .37$, $F(9, 108) = 7.21$, $p < .001$, indicating that the nine predictors contributed significantly to prediction of extradyadic kissing inclination. The addition of the three two-way interactions at Step 3 resulted in a significant increase in R^2 , ΔR^2 change = .08, $F(3, 105) = 4.79$, $p < .01$, indicating that those three interaction terms added significantly to prediction of extradyadic kissing inclination. With all predictor variables and interaction terms in the equation, R for regression was significantly different from zero, $F(13, 105) = 6.66$, $p < .001$, and together the predictors accounted for 45.20% of the variance in extradyadic kissing inclination.

Table 3 also provides a summary of the relative importance of the predictors at each step of the regression. In the context of the full model, four predictors and one interaction term - sex-love-marriage \times gender, $t(105) = -2.82$, $p < .01$, were significant predictors. Consistent with predictions, satisfaction was a negative predictor, $t(105) = -2.19$, $p < .05$, while number of sexual partners, $t(105) = 2.50$,

Table 3. Moderated multiple regression of person, other and environment variables on extradyadic kissing inclination

	Variable	β	sr_i	sr_i^2	t	R^2	ΔR^2	F
1	Age	-0.041	-.031		-0.423	.003	.003	0.309
2	Gender	0.012	.011		0.150	.377	.374	7.214***
	Age of first sexual encounter	0.048	.037		0.517			
	Number of sexual partners	0.242	.181	3.28%	2.503*			
	Sex-love-marriage	0.124	.079		1.090			
	Satisfaction	-0.211	-.159	2.53%	-2.197*			
	Quality of alternatives	0.296	.239	5.71%	3.314***			
	Investment	0.089	.071		0.983			
	Commitment	-0.136	-.088		-1.219			
	Dysfunctional impulsivity	0.256	.230	5.29%	3.180**			
3	Sex-love-marriage \times commitment	0.144	.128		1.769	.452	.075	4.787**
	Sex-love-marriage \times gender	-0.305	-.204	4.16%	-2.820**			
	Sex-love-marriage \times dysfunctional impulsivity	-0.068	-.061		-0.849			

* $p < .05$, ** $p < .01$, *** $p < .001$.

N. B. Unique variance values are provided for significant predictors only. Unique variance contributed by non-significant predictors is negligible.

$p < .05$, quality of alternatives, $t(105) = 3.31$, $p < .001$, and dysfunctional impulsivity, $t(105) = 3.18$, $p < .01$, were positive predictors of extradyadic kissing inclination. The largest unique contribution to prediction of extradyadic kissing inclination was quality of alternatives ($sr_i^2 = 5.71\%$), followed by dysfunctional impulsivity

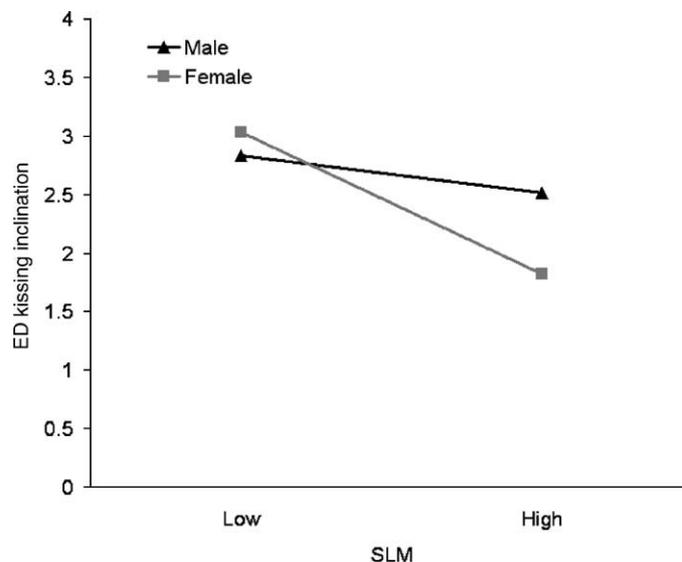


Figure 3. The interaction between gender and sex-love-marriage in prediction of extradyadic kissing inclination.

N. B. The main effects of sex-love-marriage and of gender have been partialled out.

($sr_i^2 = 5.29\%$), sex-love-marriage \times gender ($sr_i^2 = 4.16\%$), number of sexual partners ($sr_i^2 = 3.28\%$), and satisfaction ($sr_i^2 = 2.53\%$).

A plot of the significant interaction term showed that, for females, extradyadic kissing inclination was significantly greater when sex-love-marriage was low than when sex-love-marriage was high, $t(115) = -3.62, p < .001$. However, for males, extradyadic kissing inclination did not vary significantly at different levels of sex-love-marriage, $t(115) = -.94, ns$ (see Fig. 3).

Discussion

The present study investigates the predictive value of variables from each of three categories, 'P' (person), 'R' (relationship), and 'E' (environment) in relation to individuals' inclination to engage in two relatively independent extradyadic activities ('kissing' and 'sex'). The finding that participants perceived the two extradyadic activities to differ significantly in terms of the degree of intimacy involved in each confirmed previous findings (Roscoe *et al.*, 1988) that young adults perceive there to be a continuum of sexual activities in terms of intimacy and that we should therefore treat extradyadic kissing inclination and sex inclination as two different variables.

Our finding that quality of alternatives was a significant predictor of both extradyadic activities is consistent with the literature that alternatives to the relationship are conducive to extradyadic activity (Drigotas *et al.*, 1999; Roscoe *et al.*, 1988). In fact, the present study found quality of alternatives to be the strongest predictor of both extradyadic sex inclination and extradyadic kissing inclination, suggesting that it may be a key determinant of individuals' inclination to engage in extradyadic activities. Moreover, quality of alternatives generally has only a very low correlation with our other predictors, which suggests that it is independent of person variables as opposed to, for example, being the result of them. For example, we find no evidence that dysfunctionally impulsive people tend to search for extradyadic alternatives.

Participants who had experienced sexual intimacy with a greater number of partners also reported greater extradyadic sex and extradyadic kissing inclination. This inclination may be attributable to the individuals' skills at recognizing sexual advances or recruitment of sex partners. Moreover, it does not appear to be the result of an individual's tendency towards sexual experimentation, since we failed to detect a significant relationship between age of first sexual encounter (a reflection of sexual experimentation tendencies) and extradyadic inclination. Therefore, the 'learned advantage' explanation proposed by Treas and Giesen (2000) would appear a more viable explanation for the higher extradyadic inclination of individuals with more extensive sexual histories, as opposed to an orientation towards sexual experimentation, as suggested by Reiss *et al.* 1980.

Of the person (P) variables not already discussed, dysfunctional impulsivity was the only variable found to significantly predict both extradyadic kissing inclination and extradyadic sex inclination. There are at least two reasons why this might be the case. First, acts of infidelity violate Australian social norms (de Vaus, 1997), and therefore, infidelity may have repercussions for the offender's social standing if detected. Second, in exclusive relationships, any extradyadic involvement in sex or kissing would constitute a relationship transgression (i.e. cheating) that may have a variety of direct negative consequences for the relationship (Buunk, 1980; Roscoe *et al.*, 1988). Therefore, the finding that dysfunctional impulsivity significantly predicts extradyadic kissing and sex inclination is consistent with Dickman's (1990) assertion that individuals

scoring highly on the measure of dysfunctional impulsivity will tend to act impulsively in situations where such impulsivity represents leaping without looking. Lending further support to this finding was the fact that in our sample functional impulsivity did not significantly predict extradyadic inclinations.

We also found that males reported a greater inclination to engage in extradyadic sex than females, although no significant effect of gender was found in the prediction of extradyadic kissing inclination. Our findings are consistent with those of Wiederman and Hurd (1999), who found that the incidence of extradyadic sex was greater for males than females, but that no gender difference applied to extradyadic romantic kissing. However, the results are not consistent with Hansen's (1987) finding that males were more likely than females to have engaged in extradyadic erotic kissing. We attribute this difference to the variations in the description of the activity. The terms 'romantic kiss' (Wiederman & Hurd, 1999) and 'passionate kiss' (present study) suggest a level of intimacy distinctly separated from sex on the continuum of intimacy. In contrast, Hansen's (1987) use of the term 'erotic kiss' may have evoked connotations of extreme intimacy, since the word 'erotic' implies arousal or satisfaction of sexual desire. Participants responding to items regarding 'erotic kissing' may have inferred that the investigator was interested in kissing accompanied by other more intimate behaviours (e.g. petting) to validate the descriptor 'erotic'. It therefore appears that gender effects are significant in the prediction of engagement in (or inclination to engage in) highly intimate extradyadic sexual activities. However, moderately intimate sexual activities, such as kissing, that are unaccompanied by highly intimate sexual activities are not significantly associated with gender effects.

It is not entirely clear why findings of gender effects applied only to the prediction of extradyadic sex inclination in the present study as opposed to extradyadic kissing. Although the evolutionary perspective contributes to understanding gender differences, a review of the theoretical approaches to understanding infidelity has suggested that factors other than biological gender differences may be at play (Drigotas & Barta, 2001). Given this suggestion, alternative explanations are proposed. First, kissing might not be viewed as a genuine betrayal of relationship expectations, since it does not constitute real sexual relations with an extradyadic partner and might therefore seem more justifiable to the perpetrating partner. Since extradyadic sex is considered more intimate than extradyadic kissing, extradyadic sexual activity constitutes the greater relationship transgression, and is therefore likely to be associated with more negative emotional consequences if detected (Edwards, 1973; Roscoe *et al.*, 1988). Therefore, given that research suggests that females are more aware of the emotional consequences of their behaviour than males (Rubin, Peplau, & Hill, 1981), the difference in transgression severity and the associated consequences may explain the observed gender effects. Furthermore, the romantic feelings associated with kissing could provide benefits to males and females alike, such as an increase in self-esteem that arises from the knowledge of one's own attractiveness to the kissing partner. Although sex could also boost one's self-esteem, more risks are associated with this activity, more so for females than for males. For example, unlike kissing, sex requires genital contact. This difference between the activities might hold more importance for females than for males, particularly when the risk of accidental pregnancy is considered. Males, who can unilaterally opt to wear a condom, may be more in control of the risks associated with both unwanted pregnancy and the contraction of sexually transmitted infections. In contrast, females, for whom condom use requires the cooperation of the male, may not feel comfortable broaching the topic; hence, they may report lower extradyadic sex

inclination. Given these heightened concerns for females in regard to extradyadic sex, romantic kissing might act as an end in itself without the need for sex which would lead to complicated concerns. To test this proposition, future studies could extend the methodology of the present study by additionally assessing participants' inclination to engage in extradyadic sex in situations where condom use is a certainty.

Sex-love-marriage (the cognitive association between sex, love, and marriage) was not a significant direct predictor of either extradyadic kissing inclination or extradyadic sex inclination and is consistent with previous research (Wiederman and Hurd, 1999). Moreover, it appears to contradict previous findings of significant negative correlations between sex-love-marriage and infidelity measures (Weiss & Slosnerick, 1981; Weiss *et al.*, 1986). However, we propose that previous inconsistent findings with respect to sex-love-marriage may be explicable in terms of our improved methodology as well as our study of interaction effects. The failure of previous research to eliminate data obtained from individuals whose relationships were identified as not being exclusive means that participant samples comprised individuals in open relationships as well as exclusive (e.g. Weiss & Slosnerick, 1981; Weiss *et al.*, 1986). It is our belief that these previous studies were contaminated through the inclusion of data from individuals in open relationships to whom the concept of infidelity was not applicable.

As predicted, we report a significant interaction between sex-love-marriage and commitment in the prediction of extradyadic sex inclination, such that higher sex inclination was reported only amongst people who are low in sex-love-marriage associations and low in commitment. Our finding lends credence to the proposition that individuals whose commitment to their current relationship is low are likely to act in accordance with their global attitudes towards sex. Given this evidence of an interaction between sex-love-marriage and commitment, main effects for sex-love-marriage observed in past studies may have been affected by unmeasured commitment effects.

The hypothesis that gender and sex-love-marriage would significantly interact in the prediction of both types of extradyadic inclination was supported. The interaction revealed that among females, extradyadic inclination was lower for those with a greater cognitive association of sex-love-marriage. However, for males, there was no such interaction. This finding is consistent with past literature that suggests that females' sexual behaviour tends to be governed by their sex-related attitudes and beliefs, whereas the sexual conduct of males does not demonstrate this consistency (Corey, 1989). It is interesting to note that the present finding is contrary to Baumeister's (2000) suggestions that females exhibit sexual attitude-behaviour inconsistency. However, Baumeister's hypothesis regarding females' attitude-behaviour incongruence was based on females' global attitudes towards sexual issues, rather than being a more personal measure of morals such as the sex-love-marriage measure used in the present study. This may explain the attitude-behaviour discrepancy noted by Baumeister if, for example, females are reporting a general disapproval of premarital sex (i.e. an attitude that might hold when judging the behaviour of others), when in fact they themselves are engaging in premarital sex and for whatever reason might hold a personally relevant attitude that premarital sex is acceptable.

Of the hypotheses pertaining to relationship (R) variables, the hypothesis that relationship satisfaction would be a significant negative predictor of extradyadic kissing and sex inclination was the only hypothesis supported. However, relationship duration was not found to be significant in the prediction of either extradyadic kissing or sex inclination. Treas and Giesen's (2000) habituation hypothesis proposes extra-marital infidelity is positively associated with relationship duration due to decreased marital

benefits; for example, reduced frequency of sexual intercourse. As noted previously, application of the habituation hypothesis to dating relationships may be inappropriate since research has not been undertaken to establish whether the benefits of dating relationships reliably increase or decrease over time. The non-significance of relationship duration as a univariate predictor of the criteria suggests that the effects of relationship duration on extradyadic inclination during dating may be negligible. We think it likely that the benefits of dating relationships intensify over time for some couples and deteriorate for others.

The finding that investment size and commitment were non-significant predictors of extradyadic inclination was somewhat surprising, given that these investment model constructs have previously been very strongly advocated as correlates of infidelity (Drigotas *et al.*, 1999). However, young adults have more popularly nominated low relationship satisfaction as a reason for dating infidelity, than either commitment or investment (Roscoe *et al.*, 1988). Our finding that, of the relationship variables, only satisfaction was a significant predictor parallels this popularity.

We believe the failure of investment size and commitment to be predictive may be the result of our multi-perspective viewpoint incorporating person variables, relationship and environmental variables. Inclusion of a greater number of variables and interaction terms in the present study may mean that the previously significant contributions of investment size and commitment were superseded by the significance of the newly introduced variables and interaction terms. We therefore argue that employing a wider range of predictors yields a more accurate account of the variance explained in the variables investigated, and allows for a contextual interpretation of findings, which is otherwise not possible. Furthermore, future research into dating infidelity should thoroughly investigate potential interactions between predictor variables. Although the present study investigated a small number of two-way interactions, there is great scope for further examination of interactions between predictors.

The exploratory investigation of dysfunctional impulsivity has revealed it to be a significant predictor of both extradyadic kissing and sex inclination. However, further research is required to understand this predictor. Interesting avenues for research could investigate known correlates of dysfunctional impulsivity to determine the extent and nature of the direct and indirect effect on extradyadic involvement of the tendency to act without forethought. For example, excessive alcohol consumption has been found to be associated with dysfunctional impulsivity (Sarfati & White, 1991) and research has also determined that sexual risk taking increases when individuals are intoxicated (O'Hare, 1998; Plant, 1990; Robertson & Plant, 1988). However, research has not investigated the association between alcohol consumption and measures of dating infidelity. Therefore, future research could aim to determine whether there is an association between alcohol consumption and extradyadic inclination, and the extent to which this association is an indirect effect of dysfunctional impulsivity.

Our purpose-built measure of exclusivity has high internal consistency for measures of relationship boundaries pertaining to each of the separate extradyadic activities. Therefore, it is recommended that future research utilize a similar measure of exclusivity. Given that infidelity cannot occur where there is no expectation of exclusivity, it is imperative that future research properly addresses exclusivity.

Careful consideration of the criterion variable of interest is also recommended for future research in this field. Several researchers advocate the use of measures other than retrospective accounts of prior infidelities (e.g. Buss & Shackelford, 1997; Drigotas *et al.*, 1999; Johnson, 1970). We also recommend use of a composite index to increase

reliability, similar to that used within the present study in which scale items assessed likelihood, temptation, and likelihood if undetectable.

However, it is acknowledged that future research could benefit from utilizing a more probing measure of the dependent variable. While we continue to maintain that a measure of hypothetical infidelity overcomes issues of underestimation of the frequency of actual past infidelities, the obvious problem with this approach is lack of real-life validity. It is therefore recommended that future research measuring hypothetical events also include an optional item regarding actual past infidelities to facilitate a statement about the validity of the hypothetical measurement.

Future use of the Attraction Questionnaire could also benefit from further probing participants with respect to the hypothetical partner they are asked to bring to mind in the current version of the questionnaire. Along with the current item 'imagine that sometime within the next month, while you are still dating your current boyfriend/girlfriend, this other person who you are attracted to attempts to . . .', should be an item that reads on a scale of 1 to 6 (using same anchors as previous item i.e. 1 = *not at all*, 6 = *extremely*), how relevant is this question to your relationship situation right now (i.e. does there exist someone other than your current partner to whom you are attracted?)? Inclusion of such an item could help resolve an important issue arising from the results of the present study. Although significant results were found in relation to many of the predictor variables, it must be acknowledged that participants' mean inclination scores remained low for each of the extradyadic activities. On a 6-point scale of likelihood, mean scores were 2.51 and 1.37 for kissing and sex, respectively. These mean scores suggest that participants are actually only 'slightly' or 'very slightly' inclined towards extradyadic activity. However, it is possible that the scores were underestimated by data obtained from individuals who were unable to imagine being attracted to a partner other than their own. Incorporation of this 'reality-check' item could be used to determine whether inclination scores are higher for participants who are currently attracted to someone else. Results revealed that inclination towards each of the two activities was highly correlated. However, the importance of using separate analyses to determine factors that influence inclination to engage in different extradyadic activities was highlighted by the finding that participants attribute significantly different levels of intimacy to each of the activities assessed in the present study. We therefore recommend that future studies continue to separate analyses pertaining to distinctly different extradyadic activities.

We hope that future research may advance the aims of the present study by identifying a complete set of 'risk-factors' for dating infidelity that facilitate preventative approaches to dealing with behaviours that may result in long-term negative consequences. Armed with this knowledge, professionals may be in a better position to address such behaviours, which some researchers suggest are enduring and may carry over into marriage.

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