Exploring perceptions of online infidelity

BRANDEN H. HENLINE,[a] LEANNE K. LAMKE,[b] AND
MICHAEL D. HOWARD[a]
[a]Northcentral University and [b]Auburn University

Abstract

This study examines the similarities, differences, and potential linkages between perceptions of online infidelity and traditional infidelity using a sample of 123 individuals in committed relationships. Respondents nominated both sexually and emotionally based behaviors as unfaithful and expressed greater distress in response to hypothetical emotional, as compared to sexual, online infidelity. Unlike traditional infidelity, men generally were not more upset by sexual online infidelity than were women. Both men and women believed that emotional and sexual online infidelities were likely to co-occur. A face-to-face meeting was perceived to be more likely following emotional, as compared to sexual, online infidelity and men were viewed as more likely than women to engage in sexual intercourse, given a face-to-face meeting with the online contact.

The creation of the Internet has opened a new venue for the exploration and formation of extradyadic relationships. In an ongoing Internet-based study, Maheu (2001) found that 72% of respondents knew someone who had engaged in a cyber affair. Beyond these data, prevalence of this phenomenon has not been empirically established. It has been suggested that the frequency of involvement in Internet-based extradyadic relationships is likely to escalate (Merkle & Richardson, 2000). Many factors contribute to the growing opportunity for engaging in online infidelity including the increasingly common use of the Internet and e-mail services, the continual creation of chat rooms, online social networks, and sexual and pornography-related sites, and advancements in technology such as DSL (digital subscriber line) connections, and cable and satellite modems. However, although much is known about traditional infidelity, less is known about computer-mediated unfaithful behavior. As such, the purpose of this research is to explore the nature of online infidelity and to determine what, if any, connections exist between beliefs about traditional infidelity and beliefs about online infidelity.

In a recent study, Whitty (2003) sought to understand the nature of online infidelity by asking participants to rate the level of infidelity for 15 predetermined behaviors (11 sexual, 4 emotional). The behaviors were identified from existing literature regarding traditional infidelity and Internet sexuality. Participants rated each behavior on a 5-point scale ranging from *not considered as infidelity* to *extreme infidelity*. Using factor analysis, the 15 behaviors were divided into three groups and results showed that online infidelity was characterized by three types of behavior including sexual infidelity, emotional infidelity, and pornography use.

Whitty's (2003) study provides important information concerning the nature of online infidelity. A potential drawback, however, is that the options were given to participants based on behaviors the researchers believed would be pertinent to online infidelity. A more open-ended exploration of participant ideas regarding what constitutes online infidelity

Branden H. Henline, Director of MFT Training, School of Psychology, Northcentral University; Leanne K. Lamke, Department of Human Development and Family Studies, College of Human Sciences, Auburn University; Michael D. Howard, School of Psychology, Northcentral University.

Correspondence should be addressed to Branden H. Henline, Northcentral University, 505 W. Whipple st., Prescott, AZ 86301, e-mail: bhenline@ncu.edu.

could shed further light on the nature of this phenomenon with less potential bias. This concern was partially addressed in Whitty's later (2005) research in which participants completed stories from a stem that indicated that an online relationship had been created by one partner in a couple. Participant stories were analyzed to determine whether forming a relationship with someone else online was seen as infidelity or not, but participants were not asked what they believe constitutes unfaithful behavior over the Internet. Results indicated that a majority of participants saw Internet infidelity as very real and believed it to have as dramatic an influence on primary relationships as an offline affair. Common perceived consequences of online infidelity included hurting the offline partner, breaking up, and loss of trust. Another important finding was that the stories participants developed frequently reflected aspects of emotional infidelity. This finding is significant in that the research was based on a previous study of traditional (offline) infidelity (Kitzinger & Powell, 1995) that found that 90% of participants developed stories involving sexual acts. The marked difference in these studies indicates that the emotional component of infidelity may be a significant aspect of online infidelity that warrants further inquiry.

Related to Whitty's (2005) findings, Parker and Wampler (2003) found that involvement in online sex with someone outside of a primary relationship was seen as more emotionally focused, but less sexually charged, less distracting, and less of an affair than actual sex. Nevertheless, average participant ratings of the nature of online infidelity (emotional, sexual, distracting, and affair ratings) were all above the midpoint on a 7-point scale. Thus, while online relationships may not be perceived as unfaithful to the same degree as traditional infidelity, the perception of unfaithfulness still exists. Additionally, the work of both Whitty, and Parker and Wampler indicate that online infidelity includes both an emotional and a sexual component, which is consistent with research on traditional infidelity. The sexual versus emotional dichotomy associated with traditional infidelity frequently is explored with respect to the concept of extradyadic jealousy.

Jealousy is a complex emotion that is first experienced in childhood, yet remains to be reexperienced throughout the life span. Jealousy, as a feeling, can be either positive or negative, and can carry with it a host of negative consequences for those involved (Wehrly, 2002). Jealousy is an emotion that can be experienced in a variety of situations, and throughout history it has taken on different meanings. In the mid 1900s, jealousy was viewed as a sign of healthy love. By the 1960s, jealousy was viewed as blocking sexual freedom and self-love. More recently, jealousy has become something deserving of attention by relationship and mental health professionals (Wehrly, 2002).

Jealousy, as it pertains to a romantic relationship, is regarded as a fear of losing an important relationship to another person who is viewed as a rival (Parrott & Smith, 1993). Buss, Larsen, Westen, and Semmelroth (1992) developed professional interest in the evolutionary basis of heterosexual jealousy by contending that people of different genders face different reproductive fitness challenges. These researchers argue that men should become more jealous of their partners' sexual versus emotional infidelity. The basis for this belief is the idea that sexual infidelity could result in a man devoting resources to the offspring of another man. Women, although certain of their genetic link to their offspring, are faced with the possibility of their partners withdrawing resources from the offspring. Therefore, a male partner's attachment to another woman is perceived as being a precursor to this withdrawing of resources and a subsequent diversion of those resources to another woman and her offspring. Thus, women are likely to become more upset at signs of emotional infidelity.

Research conducted by Nannini and Meyers (2000) on jealousy as it relates to sexual and emotional infidelity found that women experienced more distress over sexual and emotional infidelity than did men. Women also felt less responsibility for their partners' disloyalty than the men did. These researchers concluded that cognitive appraisals are an important factor in understanding the causes of jealousy stemming from infidelity. Research more specifically focused on the evolutionary-based propositions regarding infidelity has been

conducted in a variety of countries, including the United States (Buss et al., 1992), Germany and the Netherlands (Buunk, Angleitner, Oubaid, & Buss, 1996), and Korea and Japan (Buss et al., 1999). Overall, approximately two thirds of participants in these studies viewed emotional infidelity as more distressing than sexual infidelity. With regard to sex differences, however, results indicated that a significantly larger number of men than women believed they would be more upset by their partners' sexual infidelity than by their partners' emotional infidelity. The cross-cultural nature of these findings adds credence to an evolutionary explanation of sex differences in response to hypothetical sexual and emotional infidelity.

Most recently, Green and Sabini (2006) attempted to determine if the evolutionary explanation offered by Buss et al. (1992) would hold true in a national sample of adults. Looking to evaluate the relationship of gender, socioeconomic status, age, and jealousy in a sample of 777 adults matched to the U.S. age distribution, these researchers discovered that support for the evolutionary-based hypotheses proposed by Buss et al. was not clearly evident. They discovered that a majority of both male and female subjects were more upset by emotional, as compared to sexual, infidelity. More women, however, were upset by emotional infidelity and more men by sexual infidelity. These researchers also found no effect of age or socioeconomic status on men and women's views of whether emotional or sexual infidelity would be perceived as more upsetting.

The implications of using evolutionary theory as a conceptual basis for understanding online infidelity are less clear. By definition, online sexual behavior is "virtual" and not physical. As such, no danger of procreation exists. If sexual intercourse is to occur following a cyber affair, interlopers must make arrangements for a face-to-face meeting, which would mark the beginning of a traditional affair. It is possible, however, that evolutionary theory may be useful in guiding research on online infidelity if people believe that online affairs lead to traditional affairs. For example, if men believe online sexual infidelity is more likely to lead to traditional sexual infidelity than is online emotional infidelity, they may report more distress in response to online sexual infidelity. If perceptions of online and traditional infidelity are linked in this manner, sex differences in distress may be found in response to online sexual infidelity that are consistent with those reported for traditional infidelity. No research exists, however, concerning perceptions of the link between online and traditional infidelity.

Thus, the purpose of this study was to examine the similarities, differences, and potential linkages between online infidelity and traditional infidelity. The first goal was to further understand the nature of online infidelity via open-ended inquiry regarding individuals' beliefs about what constitutes online infidelity. The second goal was to examine the extent to which the sex differences found by Buss and his colleagues regarding distress generated by sexual and emotional traditional infidelity would be replicated in responses to hypothetical online sexual and emotional infidelity. The third goal was to identify the degree to which online sexual and emotional infidelity are perceived to co-occur. The final goal was to provide the first empirical exploration of individuals' beliefs about the likelihood of sexual and emotional online infidelity leading to face-to-face meetings and sexual intercourse with the online partner (i.e., traditional infidelity).

Method

Participants

The original sample included students at a large southeastern university in the United States. This sample included individuals who were currently involved in a committed relationship as well as people who had never dated or were only casually dating. Because we were interested in how people believed they would react to circumstances of betrayal in a committed relationship, our final sample consisted of the 123 participants (51 men and 72 women) who reported that they were either dating only one person (34.1%), had an understanding with their partners that they would marry someday (45.5%), were engaged (12.2%), or were married (8.1%). These individuals were predominantly

White or Caucasian (89%), while 9% of the participants were African American, and 1% reported various other ethnic backgrounds. The mean age was 21.03 years, with a range of 19–36 years of age. These sample characteristics are consistent with the demographic characteristics of the overall university population of students.

This sample of college students in committed relationships was sought due to existing research that asserts that there are generational differences in the use of the Internet and related technology. Technology use is a major component of the contemporary American lifestyle (Roberts, Foehr, & Rideout, 2005), particularly for adolescents and young adults. As such, young adults may have more exposure to opportunities themselves for online infidelity and to others who have experienced this phenomenon.

This study was approved for use with human subjects by the university's institutional review board. All participants completed an informed consent document and were specifically informed that they were not required to participate and could decline participation at any time without consequence.

Measures

Participants completed the Internet-Based Experience and Relationship Survey (IBERS), an anonymous, paper-pencil survey that was developed for the purposes of this study based on previous research by Roscoe, Cavanaugh, and Kennedy (1988) and Buss et al. (1999). The questionnaire included (a) a question concerning the nature of online infidelity, (b) questions about relative distress in response to sexual and emotional online infidelity, (c) questions about the connections between online sexual involvement and online emotional involvement, (d) questions that address beliefs about the potential links between online infidelity and traditional infidelity, and (e) demographic questions.

The nature of online infidelity.   The first section of the IBERS included a question that was patterned after Roscoe et al. (1988). Specifically, the question was, "What online behaviors or activities would you consider to be 'unfaithful' to a dating partner if the couple is in an exclusive dating relationship (in other words, they have assumed that they are to date only each other)?" Participants were asked to respond to the question "with as much detail and as many examples as you can think of." The purpose of this question was to gather descriptive information regarding the nature of online infidelity.

Coding of participant responses for the open-ended question was accomplished using a three-step process. First, the primary researcher took a subsample of 40 surveys from the total sample of completed questionnaires. Each behavior listed in the subsample was listed in a word-processing document and then categorized into the seven behavior categories (e.g., sexual interactions or flirting, keeping secrets from partners) used by Roscoe et al. (1988). It was clear by the magnitude of answers in the "other" category that additional categories were needed. Therefore, seven additional behavior categories (e.g., accessing Internet pornography) were added for a total of 14 behavior categories. Next, two research associates reviewed the final list of nominated behaviors independently. A discussion was conducted to address any disagreements in the coding until unanimity was achieved. The primary researcher then used the revised coding scheme to code each of the questionnaires. The coding categories with specific examples of participant responses can be found in Table 1.

Interrater reliability.   In order to establish interrater reliability, a subsample of the cases ($n = 51$; 41%) were coded by a second coder. For this subsample, there was a 92.44% agreement in the coding of all participant responses. Cohen's kappa for the interrater reliability in coding for the subsample was $\kappa = .711$ overall. Individual kappa values for each behavior were generally high ($\kappa > .600$). For three nominated behaviors (keeping secrets from partner, betraying confidence of partner, and chatting with random people), there were so few nominations of the behavior as unfaithful that minimal disagreement resulted in kappa values that were quite low ($\kappa = .243, .311,$ and .196 respectively). Aside from percent

Table 1. *Frequency of nominations of "unfaithful" online behaviors*

Nominated "unfaithful" online behavior (example statements)	Percentage[a]	Roscoe %[b]
Cybersex or sexual chat	44.7	41.9
Cybersex; Internet sex; sex; online sex; masturbating while having cybersex; having a sexual relationship; the online equivalent of phone sex; simulated sexual activities		
Emotional involvement with online contact	39.0	10.2
Deep self-disclosure; getting way too deep with a person who you don't even know; having a serious emotional relationship with someone online; sharing intimate details of their lives with others; conversation that is higher than just on a friendship level; spending time with someone else with romantic or emotional interests in mind		
Online dating, plans to meet or meeting the online contact	37.4	56.9
Spending a lot of time talking to the person; chatting on several occasions; planning to meet someone in person; meeting the person you met online; online dates		
Sexual interactions or flirting	37.4	39.8
Any erotic description designed to sexually entice the other online party; talking "dirty" to others; making sexual connotations or suggestions that you would not make if your significant other was there; any sharing of sexual thoughts; any sexual content discussed in an inviting manner toward others; online flirting; XXX chat rooms		
Accessing Internet pornography	10.6	n/a
Online pornography; watching any type of pornography; looking at pornography; porn Web sites		
Nothing; no Internet-based behavior is unfaithful	8.1	n/a
If it's only online then it is not real and can't be unfaithful; nothing		
Betraying confidence of partner	7.3	3.3
Things they wouldn't want their partner to do with someone else; contacting someone else with the intent of cheating on me		
Chatting with random people	6.5	n/a
Any type of contact with a random person; if you're chatting with people you don't know		
Lying to online contact re: self, attributes, having a partner	4.9	n/a
Not telling the person online that you already have a girlfriend; the other person should be aware that they are in an exclusive relationship		
Unfaithful real-life behavior is unfaithful on the Internet also	4.9	n/a
If you're cheating; if it is unfaithful then it's still unfaithful if you do it online		

(continued)

Table 1. (*continued*)

Nominated "unfaithful" online behavior (example statements)	Percentage[a]	Roscoe %[b]
Other	4.1	1.2
Online marriage; you can't be unfaithful unless you are married; seeking relationship advice from someone online; if you know the person online		
Keeping secrets from partner	3.3	17.1
Lying about your online involvement; not telling your partner		
If the online relationship detracts from real-life relationship	3.3	n/a
If it interferes with the relationship; regular contact to the point where I am replaced		
Showing self to online contact (sending pictures, webcam)	3.3	n/a
Showing themselves to other people on the computer or Internet; sending personal pictures of nudity or sexual positions, etc. as an e-mail attachment; sending erotic pictures of themselves; webcam viewing		

[a]$N = 123$. [b]$N = 247$; n/a: nominated online behavior was not reported by Roscoe et al. (1988).

agreement and Cohen's kappa, correlations between the coding of the two raters were high and supportive of interrater reliability ($r = .734$, $p < .01$).

Distress in response to sexual and emotional online infidelity. Part two of the IBERS incorporated the four hypothetical infidelity dilemmas developed by Buss et al. (1999). The use of these hypothetical vignettes, rather than actual scenarios, was deemed essential in order to examine the comparability of findings for online and traditional infidelity. For each of the infidelity dilemmas, participants were asked to state which type of online infidelity, sexual or emotional, would be more distressing. The wording of the items was adapted to incorporate the online infidelity theme. For example, subjects were asked to respond to the following dilemma: Please think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you've been seriously involved became interested in someone else whom she or he met online. What would upset or distress you more (please circle only one response): (A) Imagining your partner forming a deep emotional attachment to that other person. (B) Imagining your part-

ner enjoying passionate online sex with that other person.

The other dilemmas asked participants whether sexual or emotional online infidelity would be more distressing in three additional contexts: (a) "falling in love" versus multiple online sexual encounters; (b) *both* sexual and emotional online infidelity have occurred, which aspect is most distressing; and (c) online sex occurs but specifically no emotional attachment is involved, versus emotional attachment occurs but specifically no online sex has occurred. Following the rationale of Buss et al. (1999), multiple scenarios were included to address the possibility that participants may select sexual or emotional infidelity based on the belief that if one type (sexual or emotional) is occurring, the other is likely to be occurring as well. The use of all four scenarios addresses this possibility and allows for differentiation of relative "upsetness" to both emotional and sexual online infidelity.

Perceived co-occurrence of emotional and sexual online infidelity. Following the infidelity dilemmas, participants were asked to rate the conditional probability of involvement in online sexual infidelity given prior involvement in online emotional infidelity, and vice versa. Specifically, based on Buss

et al. (1999), participants rated (a) the likelihood that a person would engage in online sex with an online emotional partner and (b) the likelihood that a person would form an emotional attachment to an online sexual partner. Both conditional probabilities were rated for each of three targets—a typical man, a typical woman, and the participants themselves. Thus, a total of six questions were asked. For example, participants were instructed as follows: assume that the letters C.G. refer to a typical man. If C.G. develops a deep emotional attachment to a woman whom he met online, how likely is it that C.G. and the woman are now, or soon will be, engaging in online sex? All questions were rated using a 9-point scale (1 = *unlikely*, 9 = *very likely*).

Linkages between online and traditional infidelity. Following the pattern used in the previous section, questions were included to determine whether participants believed that online infidelity is likely to lead to traditional infidelity. Six questions were asked (two for each of the three targets) that invited participants to rate the probability that participation in (a) sexual and (b) emotional online infidelity is likely to lead to a face-to-face meeting with the online partner. For example, if C.G. develops an emotional attachment to a woman whom he met online, how likely is it that C.G. and the woman will meet each other face-to-face? Finally, for each target, participants were asked to rate the likelihood that sexual intercourse would occur given a face-to-face meeting with (a) an online sexual partner and (b) an online emotional partner. For example, if they did meet face-to-face, how likely is it that C.G. and the woman will engage in sexual intercourse?

All questions regarding each target were grouped together (conditional probabilities of sexual and emotional online infidelity, of online infidelity and face-to-face meetings, and of face-to-face meetings and sexual intercourse). The order of questions regarding a typical man, typical woman, and self was fully counterbalanced (e.g., typical man, typical woman, then self; typical man, self, then typical woman), as in Buss et al. (1999). Thus, six different versions of the IBERS were created.

Each version was completed by a comparable number of participants.

Results

The primary goals of the present study were to (a) describe the nature of online infidelity, (b) identify similarities and differences in beliefs about online and traditional infidelity, and (c) examine beliefs about the possibility that online infidelity will lead to traditional infidelity. To address the nature of online infidelity, frequency distributions were calculated for each of the online behaviors that were nominated as unfaithful. The second goal of the study was accomplished by comparing the results of this study with those of similar studies on traditional infidelity. Specifically, the frequency distributions from the open-ended question were compared with the distributions in the Roscoe et al. (1988) study. Also, chi-square analyses were conducted to determine whether men, relative to women, were more distressed by hypothetical sexual, as compared to emotional, online infidelity. These results were compared with the findings regarding traditional infidelity in the Buss et al. (1999) study. Finally, repeated-measures multivariate analysis of variance (MANOVA) was used to examine the extent to which men and women believed that sexual infidelity implies emotional infidelity and vice versa, for the typical man, typical woman, and for themselves. These results also were compared with the traditional infidelity findings from Buss et al. (1999). The third goal of the study was accomplished by conducting MANOVAs regarding participant beliefs about the likelihood that online infidelity will lead to a face-to-face meeting and sexual intercourse for the typical male, typical female, and for themselves.

The nature of online infidelity

The four most frequently nominated behaviors that participants considered "unfaithful" were online sex, emotional involvement with an online contact, online dating (including making plans to meet and actually meeting), and other online sexual interactions. These behaviors parallel the three most frequently described

unfaithful traditional behaviors (i.e., sexual intercourse, dating or spending time together, and sexual interactions) reported by Roscoe et al. (1988). In contrast to these similarities, participants were nearly four times more likely (39.0%) to describe emotional involvement with an online contact as unfaithful, as compared to the participants (10.2%) who identified this behavior as an example of traditional infidelity in the Roscoe et al. (1988) study. In addition, several behaviors were nominated as unfaithful online behaviors that were not listed by Roscoe et al. (1988). These behaviors and other comparative results for the frequencies of nominations for each behavior can be seen in Table 1.

Distress in response to sexual and emotional online infidelity

Responses to all four hypothetical sexual versus emotional infidelity scenarios revealed that participants (60%–82%) consistently identified emotional online infidelity as more distressing than online sexual infidelity (see Table 2). The greater perceived distress associated with online emotional infidelity reflected in these results is consistent with existing findings in that a larger number of individuals report greater distress in response to traditional emotional infidelity, relative to sexual infidelity (e.g., Buss et al., 1999).

Table 2. *Chi-square analyses for upset dilemmas (*N = 123)

Upset dilemma	Gender			Chi square		
	Female	Male	Total	Value	df	Significance
"Deep emotional attachment" versus "passionate online sex"				7.20	1	.007*
Emotional						
Count	59	30	89			
% Within gender	82	60	73			
Sexual						
Count	13	20	33			
% Within gender	18	40	27			
"Falling in love" versus "various online sexual fantasies"				3.30	1	.069
Emotional						
Count	58	33	91			
% Within gender	81	66	75			
Sexual						
Count	14	17	31			
% Within gender	19	34	25			
Both occurred, upset re: sexual aspect versus emotional aspect				2.13	1	.144
Emotional						
Count	54	32	86			
% Within gender	75	63	70			
Sexual						
Count	18	19	37			
% Within gender	25	37	30			
Sexual and not emotional versus emotional and not sexual				3.56	1	.059
Emotional						
Count	54	30	84			
% Within gender	76	60	69			
Sexual						
Count	17	20	37			
% Within gender	24	40	31			

*$p < .05$.

In contrast to these similarities between online and traditional infidelity, the Buss et al. (1999) finding that men, relative to women, were more distressed by hypothetical sexual, as compared to emotional, infidelity was not supported. As can be seen in Table 2, in three of the four scenarios, no significant sex differences were found regarding distress in response to a partner's hypothetical involvement in online sex as opposed to emotional involvement with an online partner. In the first online infidelity dilemma, however, a significant sex difference emerged. Only 18% of women, as compared to 40% of men, indicated that they would be more upset in response to a partner's sexual involvement than to an emotional attachment to an online partner.

Perceived co-occurrence of emotional and sexual online infidelity

The conditional probability of deep emotional attachment leading to online sex and the conditional probability of online sex leading to deep emotional attachment were analyzed using repeated-measures MANOVA, with sex of target as the within-subjects factor and sex of participant as the between-subjects factor. Self-ratings were analyzed with initial condition (emotional or sexual involvement) as the within-subjects factor and sex of participant as the between-subjects factor. Specific participant ratings (means and standard deviations) of the conditional probabilities of online sex and online emotional involvement, for a typical man, typical woman, and self, are listed in Table 3.

In the analysis of the conditional probability of deep emotional attachment occurring given online sex for a typical man versus a typical woman, a main effect was found for sex of target, $F(1, 118) = 30.504, p < .001$. A typical woman was considered more likely than a typical man to form a deep emotional attachment to an online sexual partner. Although sex of participant was not significant, $F(1, 118) = 0.172, p > .05$, a significant interaction effect

Table 3. *Means and standard deviations for the co-occurrence of online sex, online emotional attachment, face-to-face meetings, and sexual intercourse for a typical man, typical woman, and self (*N = 123*)*

Behavior	Rater	Typical man	Typical woman	Self
Online sex leads to online emotional attachment	Male	4.35 (2.19)	5.02 (2.29)	3.02 (2.06)
	Female	3.59 (1.87)	5.53 (2.18)	3.39 (2.55)
	Total	3.90 (2.06)	5.32 (2.23)	3.24 (2.35)
Online emotional attachment leads to online sex	Male	6.04 (2.20)	5.22 (1.94)	3.92 (2.70)
	Female	6.18 (2.11)	4.79 (1.94)	1.94 (1.68)
	Total	6.12 (2.14)	4.97 (1.94)	2.76 (2.36)
Online sex leads to face-to-face meeting	Male	5.29 (2.55)	5.16 (2.19)	3.14 (2.38)
	Female	4.28 (2.08)	4.46 (2.06)	2.04 (1.90)
	Total	4.69 (2.33)	4.75 (2.13)	2.49 (2.17)
Online emotional attachment leads to face-to-face meeting	Male	6.21 (2.39)	6.06 (1.98)	4.43 (2.63)
	Female	6.03 (2.09)	5.92 (2.01)	4.28 (2.82)
	Total	6.10 (2.21)	5.98 (1.99)	4.34 (2.73)
Online sex + face-to-face meeting leads to sexual intercourse	Male	6.90 (2.31)	6.22 (2.38)	5.02 (3.09)
	Female	6.71 (2.11)	5.92 (2.13)	2.13 (1.96)
	Total	6.79 (2.19)	6.04 (2.23)	3.33 (2.86)
Online emotional attachment + face-to-face meeting leads to sexual intercourse	Male	6.37 (2.41)	5.76 (2.26)	4.90 (2.92)
	Female	6.54 (1.81)	5.74 (2.05)	2.54 (2.15)
	Total	6.47 (2.07)	5.75 (2.13)	3.52 (2.75)

Note. Cells display means and (in parentheses) standard deviations. Each conditional probability was rated on a 9-point scale (1 = *unlikely*, 9 = *very likely*).

(Sex of Participant × Sex of Target) was found, $F(1, 118) = 6.849, p < .01$. The difference between the ratings of the likelihood that a typical woman versus a typical man would form a deep emotional attachment to an online sexual partner was greater for women than for men. All findings concerning the conditional probability of forming deep emotional attachment given online sexual involvement were consistent with Buss et al.'s (1999) study of traditional infidelity.

Regarding the conditional probability of engaging in online sex given deep emotional attachment to the online partner, a main effect was found for sex of target, $F(1, 119) = 26.488, p < .001$. In this case, a typical man was seen as more likely than a typical woman to engage in online sex with a person with whom he had formed a deep emotional attachment. This result was consistent with the findings of Buss et al. (1999). Additionally, an interaction effect (Sex of Participant × Sex of Target) was not found, $F(1, 119) = 2.127, p > .05$, which also is consistent with Buss et al. Finally, although Buss and colleagues found a main effect for sex of participant, no significant difference was found in the responses of men and women for this scenario, $F(1, 119) = 0.281, p > .05$.

In the self-reports of the conditional probabilities of online sexual and emotional involvement, a main effect manifested for sex of participant, $F(1, 120) = 6.094, p < .05$. Men generally rated each type of involvement as more likely to lead to the other than did women. An interaction effect (Conditional Probability × Sex of Participant) was found, $F(1, 120) = 24.733, p < .001$. The nature of the interaction was such that men and women rated the likelihood of online sexual involvement leading to deep emotional attachment to the online partner similarly but men rated themselves as more likely to engage in online sex given deep emotional attachment than did women. To this point, the results for self-reports of conditional probabilities of sexual and emotional infidelity are consistent with Buss et al. (1999). In contrast to Buss et al., participants in this study did not believe that, for themselves, online sexual involvement was any more likely to lead to emotional

involvement than the inverse, $F(1, 120) = 1.004, p > .05$.

Linkages between online and traditional infidelity

Ratings for the likelihood that online sexual and emotional involvements will lead to a face-to-face meeting and to sexual intercourse are presented in Table 3. For all repeated-measures MANOVAs, sex of participant was used as the between-subjects factor. For the typical man versus typical woman ratings, sex of target was used as the within-subjects factor. For the self-ratings, initial sexual versus emotional online involvement was used as the within-subjects factor.

Results regarding the likelihood that online sexual infidelity will lead to a face-to-face meeting revealed that there was a main effect for participant sex, $F(1, 119) = 5.994, p < .05$, but not for sex of target, $F(1, 119) = 0.064, p > .05$, and no significant interaction, $F(1, 119) = 0.448, p > .05$. Men generally rated both a typical man and a typical woman as more likely to meet the online sexual partner face-to-face than did women. Results regarding the likelihood of emotional online infidelity leading to a face-to-face meeting revealed no significant main effects for sex of target, $F(1, 118) = 0.162, p > .05$, or sex of participant, $F(1, 118) = 0.391, p > .05$. There also was no significant interaction effect, $F(1, 118) = 0.033, p > .05$. Thus, men and women agreed that both a typical man and a typical woman were equally likely to meet an online contact face-to-face when the initial relationship was emotionally centered.

Results for participants' beliefs about their own likelihood of engaging in a face-to-face meeting following emotional and sexual online infidelity revealed main effects for type of online infidelity, $F(1, 120) = 64.467, p < .001$, as well as a significant interaction effect, $F(1, 120) = 4.767, p < .05$, but not a main effect for sex of participant, $F(1, 120) = 2.468, p > .05$. As can be seen in Table 3, the probability of a face-to-face meeting was thought to be higher following emotional, as compared to sexual, online infidelity. The significant interaction indicates that men's and women's

perceptions regarding the likelihood of a face-to-face meeting occurring following emotional infidelity was similar, but men believed their own probability of a face-to-face meeting was higher than women believed their own probability was, following online sexual infidelity.

The likelihood that a face-to-face meeting following sexual and emotional online infidelity will lead to sexual intercourse, for both a typical man and a typical woman, was examined using sex of target as the within-subjects factor and sex of participant as the between-subjects factor. In rating the likelihood that sexual intercourse will follow a face-to-face meeting with an online sexual partner, a main effect was found for sex of participant. A typical man was seen as more likely than a typical woman to engage in sexual intercourse under the given conditions, $F(1, 119) = 11.074$, $p < .001$. No main effect was found for sex of participant, $F(1, 119) = 0.672$, $p > .05$, and there was no significant interaction, $F(1, 119) = 0.231$, $p > .05$.

When participants were asked to assume that an individual had formed a deep emotional attachment to an online partner and had met the person face-to-face, and were then asked to rate the likelihood that the individual and the online partner would engage in sexual intercourse, a main effect was found for sex of target. A typical man was considered more likely to engage in sexual intercourse, $F(1, 119) = 10.953$, $p < .001$. No main effect was found for sex of participant, $F(1, 119) = 0.002$, $p > .05$, and no significant interaction was found, $F(1, 119) = 0.651$, $p > .05$.

Self-ratings of likelihood of sexual intercourse following emotional and sexual online infidelity were analyzed using basis of the online relationship (sexual vs. emotional) as the within-subjects factor and sex of participant as the between-subjects factor. Results indicated that there was a significant main effect for participant sex, $F(1, 121) = 36.198$, $p < .001$. Men perceived that they would be more likely to engage in sexual intercourse following emotional and sexual online infidelity than did women. No main effect was found for type of online infidelity, $F(1, 121) = 1.288$, $p > .05$, but there was a significant interaction, $F(1, 121) = 4.112$, $p < .05$. The interaction effect indicated that the discrepancy between men's and women's ratings of the likelihood of engaging in sexual intercourse was greater in the case of a prior online sexual relationship than when the individual was emotionally involved with an online partner.

Discussion

The results of this study indicate that college students in committed relationships perceive online infidelity to be a multifaceted phenomenon that includes both a sexual component (e.g., online sex, flirting, sex chat) and an emotional component (e.g., talking to people online about deeply personal things, saying "I love you" to someone online). As such, this study supports the findings of Whitty (2003) who also found evidence of both sexual and emotional online infidelity. The open-ended format of this study, however, also invited and resulted in a broader description of this phenomenon. As an example, participants in this study included chatting with random people, keeping secrets from your partner, showing yourself to the online contact, and betraying the confidence of your partner in their descriptions of what should be considered unfaithful behaviors in a committed relationship.

Additionally, the results included comments that provide richness to our understanding of online infidelity. One interesting contrast that emerged was that some participants (5%) indicated that anything that is unfaithful in "real life" would be unfaithful when occurring online; yet, other participants (8%) asserted that online interactions are not real and, as such, nothing online could be considered unfaithful. In the end, this study has resulted in a broad characterization of what constitutes online infidelity. Using this description, additional research could be conducted in which the suggested online behaviors are rated for unfaithfulness to provide an even more comprehensive definition of the phenomenon.

Beyond the descriptions of various behaviors that constitute online infidelity, an interesting finding emerged in this study regarding the sexual and emotional dichotomy of infidelity. While dating (i.e., spending time in contact with another person), sexual relations (i.e., cybersex), and engaging in other sexual

interactions (e.g., cyber flirting) were all frequently nominated as unfaithful behaviors, these nominations may have been expected based on similar findings in traditional infidelity studies (e.g., Roscoe et al., 1988). A much larger proportion of participants in this study, however, listed emotional involvement as an unfaithful online behavior as compared to percentages found in Roscoe et al.'s study of traditional infidelity. This finding is consistent with previous research (Whitty, 2005) that highlights the salience of emotional online infidelity.

Consistent with these descriptive findings, a majority of participants chose emotional online infidelity as more distressing than sexual online infidelity. Perhaps the emphasis on the emotional aspects of online infidelity involves people's perceptions of intimacy. It is believed that online interaction allows people to develop a strong sense of intimacy with others in a relatively brief amount of time:

> Electronic communication apparently allows at least some individuals to subjectively feel less inhibited. Consequently, in the expression of their emotions, people are more likely to be open, honest, and forthright in revealing personal truths. As a result, the appearance of intimacy that might take months or years in an offline relationship may only take days or weeks online. (Young, Griffin-Shelley, Cooper, O'Mara, & Buchanan, 2000, p. 60)

This assertion regarding intimacy development intensity is also supported by the research of Walther and his colleagues (e.g., Tidwell, & Walther, 2002; Walther, Loh, & Granka, 2005). Such intense intimacy with others could be both highly rewarding and captivating to involved persons and deeply betraying to the uninvolved partner. As such, the development of intimacy with online contacts may help explain why emotionally based online interactions with others may elicit more attention and concern than sexual interactions. It may be that online sexual behaviors are seen as less threatening due to the fact that they do not necessitate continuing involvement with another individual, whereas emotional involvement with an online contact is thought to

involve persistent and increasing attachment to a specific person. Thus, the resultant betrayal due to online infidelity may be perceived to be more intense and lasting for emotional, as compared to sexual, unfaithfulness.

Regarding the sexual versus emotional distinction in online infidelity, it should be noted that online sexual infidelity is virtual by nature (i.e., actual intercourse with another person does not occur), whereas emotional interactions with an online partner are more similar to such interactions in a face-to-face relationship. As such, the increased attention to the emotional component of online infidelity over the sexual aspects may be a result of differences in the perceived realness of sexual and emotional online infidelity.

Are online emotional and sexual infidelity perceived to co-occur?

The findings of this study substantially support the pattern of linkages found for traditional infidelity. Specifically, when it comes to perceptions of typical men and women, from a gender socialization perspective, the more unanticipated the type of infidelity (online sex for women, online emotional infidelity for men), the greater was the perceived likelihood that the other type of online infidelity also would occur. When it came to perceptions of self, however, online sexual involvement was not perceived to be any more likely to lead to emotional involvement than emotional infidelity was likely to result in online sex. These findings indicate that online sexual and emotional infidelities are clearly linked in people's minds in ways that are very similar to perceptions of traditional sexual and emotional infidelity.

Do sex differences exist in response to a partner's hypothetical sexual versus emotional online infidelity?

Traditional infidelity studies consistently have found that more men than women indicate greater distress in response to sexual infidelity as compared to emotional infidelity. Although a higher percentage of men were more upset by online sexual infidelity than were women across the hypothetical scenarios, no significant

sex differences were found in response to three of the four scenarios. One potential explanation for these muted gender effects lies in evolutionary theory. For men, paternity certainty is believed to underlie their greater distress in response to sexual infidelity than to emotional infidelity. As such, the most parsimonious explanation for why men were not relatively more upset by online sexual infidelity than were women is that online sex is virtual. Online infidelity, whether sexual or emotional, is necessarily based on written communication and is not inherently physical. As long as a partner's behavior remains online, men should have no reason to be more concerned with a partner's involvement in online sex than with online emotional involvement because procreation cannot occur via online interaction.

This explanation, however, does not help us understand why a sex difference was found in the first infidelity scenario. The majority of men still chose emotional infidelity as more upsetting than sexual online infidelity, but more men than women chose sexual involvement as more upsetting than emotional attachment. Evolutionary theory does suggest that a man's concern about a partner's sexual infidelity may be motivated by evolved psychology (Buss et al., 1992). As such, more men than in the other scenarios may have selected online sexual infidelity as more upsetting than emotional online infidelity in this case because in the first scenario, the wording is more explicit than in the other scenarios. The first dilemma describes the sexual component as "passionate online sex," whereas the other scenarios refer to the sexual component as "multiple online sexual encounters," "*both* sexual and emotional online infidelity," and "online sex," respectively. It may be that the use of the word *passionate* results in a slightly more visceral response than the more generic terms used in the other scenarios, which may have led to more distress among men.

Do individuals believe that online infidelity is likely to lead to traditional infidelity?

Perhaps the most important contribution made by this study is the findings regarding beliefs that online infidelity may lead to traditional infidelity. In general, the findings indicate individuals believe that online interaction has moderate potential to lead to a face-to-face meeting and sexual intercourse. Ratings of the likelihood of both online sex and online emotional involvement leading to a face-to-face meeting fell at about the midpoint of a 9-point scale. The likelihood that emotional attachment to an online contact would lead to meeting the online contact was rated significantly higher than the likelihood that online sexual interactions would lead to a face-to-face meeting. As such, the greater perceived distress in response to emotional than to sexual online infidelity may be due to a perception that there is greater potential for emotional involvement to lead to face-to-face contact.

In order for actual sexual intercourse to occur between one's partner and an online contact, the two individuals must meet face-to-face. In this study, both men and women thought that, for a typical woman, an emotional online relationship is more likely than a sexual online relationship to lead to a face-to-face meeting. Therefore, the most likely route for a woman to have sex with an online partner is for her to have an emotional online relationship. Accordingly, individuals may be more distressed by a female partner's online emotional relationship than by her having online sex with someone because they believe it may lead to traditional infidelity.

Men's self-ratings and both male and female ratings for a typical man indicated that men were believed to be more likely to meet an online contact face-to-face based on an emotional attachment to the contact than by having had online sex with the online contact. Women may have been more distressed by a partner's emotional online infidelity than by online sex because an online emotional relationship is believed to be more likely to lead to more intensive interaction (i.e., face-to-face meeting and possibly sexual intercourse), which increases the probability that further resources will be taken from the couple system. Thus, the perceived links between online and traditional infidelity may help explain why both men and women were consistently more distressed by a partner's hypothetical emotional versus sexual online infidelity.

Finally, an interesting picture is painted by the existence of several sex differences in the ratings of the perceived likelihood of online sex and emotional attachment to an online partner leading to a face-to-face meeting and sexual intercourse. First, male participants showed a greater propensity than women toward higher ratings for the likelihood of meeting an online contact face-to-face. This was true for men's rating of self and for their ratings of a typical man and a typical woman. Of additional interest, regardless of initial condition (sexual or emotional), men were believed to be more likely than women to engage in sexual intercourse after meeting face-to-face. This perception was true based on both male and female ratings of a typical man, typical woman, and self. As such, there may be a greater likelihood that men may extend an online relationship into face-to-face and physical interactions with an online partner. Taken together, these findings suggest that people perceive there may be more reason to be concerned about the online infidelity of a male partner than a female partner.

Conclusions and implications

Overall, the results of this study reveal several similarities between online infidelity and traditional infidelity. Based on the use of an open-ended question, this study supports previous research that has shown that, similar to traditional infidelity, online infidelity involves sexual behaviors and emotional involvements outside of a primary relationship. Further, whether online or traditional, emotional infidelity is consistently nominated by both men and women as more distressing than sexual infidelity. While there is reason to be concerned about sexual online infidelity in committed relationships, it appears that emotional online infidelity elicits more distress and has greater potential to lead to face-to-face contact and sexual intercourse with the online partner.

This research has several implications for professionals and laypersons. Specifically, the results support previous research, which asserts that online infidelity is a multifaceted phenomenon involving many online behaviors that are seen as unfaithful within committed relationships. Given the wide range of behav-

iors that were described as unfaithful, it is important that practitioners be aware that individuals within a relationship may have very disparate views of what constitutes online infidelity, including the possible belief that nothing online is unfaithful because the relationship is not viewed as "real." In addition, based on the perception that sexual and emotional online infidelity are likely to co-occur and the perceived link between online and traditional infidelity, it is important to explore the possibility that the acknowledgment of one type of infidelity may indicate the presence, or at least perceived presence, of other types of infidelity. As such, professionals who study infidelity or work with couples who have been affected by infidelity should purposefully include discussions of and inquiry into multiple forms of online infidelity within their work. In doing so, particular attention should be focused on the salience of the emotional aspects of online infidelity.

Limitations and future directions

While these findings reveal substantive overlap between traditional and online infidelity, it is important to note that the current methodology was patterned after the methodology used in studies of traditional infidelity. The disadvantage of this deliberate decision is that this study carries with it the same limitations of existing traditional infidelity studies. In particular, limitations include the sample, the hypothetical nature of the infidelity, and the heterosexual bias. The sample for this study came from one student population in the Southeastern United States. Additionally, participants were not asked about their sexual orientation. As such, the general applicability of the findings is not known. In that this is an exploratory study, the results still provide a meaningful contribution to the progression of knowledge on this topic. Further, it is important to note that this research was based on existing studies of traditional infidelity that have found consistent results across a broad spectrum of international samples, including participants from across the United States, Germany, the Netherlands, Korea, and Japan (Buss et al., 1992, 1999; Buunk et al., 1996).

Further studies are needed that include samples from other areas of the United States and abroad in order to increase the general applicability of the findings regarding online infidelity. It may be that more extensive studies that include samples from other regions within the United States as well as international samples would vary somewhat in availability of the technology that is used to facilitate online interactions. More research would allow further illumination in this regard.

In contrast to the disadvantages associated with replicating the methodologies of previous studies of offline infidelity (Buss et al., 1999; Roscoe et al., 1988), the advantage is that inconsistencies in findings, in this case, the lack of sex differences in distress associated with emotional and sexual online infidelity, cannot be attributed simply to methodological differences. As such, we have greater confidence in the finding that men and women are likely to respond similarly to emotional and sexual online infidelity, in contrast to their more distinct responses to traditional emotional and sexual infidelity.

One possible limitation of this study involves the wording of the emotional versus sexual online infidelity scenarios. Participants were asked forced-choice questions regarding whether sexual or emotional online infidelity would be more distressing. In each of the four scenarios, it seems clear that the sexual component was strictly online. A review of the emotional component, however, revealed that the scenarios do not explicitly state that no offline interaction has occurred. It is clear that the interaction with the online partner was initiated online, but ''forming a deep emotional attachment'' and ''falling in love'' with the other person could be interpreted as occurring face-to-face. Although this possibility cannot be ruled out, the focus of the study was clearly on online infidelity, which should minimize this potential interpretation.

As an additional concern related to the wording of the items, the scenarios were hypothetical and, as such, participants answered the questions based on how they think they would feel or respond as opposed to answering based on responses to actual experiences. In this regard, both quantitative and qualitative research with persons who have experienced online infidelity, either through self- or partner involvement, would clearly add much richness to our understanding of this phenomenon. Future research with samples of individuals who have experienced online infidelity could provide a broad understanding of how such persons dealt with the infidelity, how it affected them personally, and how it affected their original relationship. Such research also could elicit information regarding specific intrapersonal and interpersonal dynamics such as the process of discovery, the emotions related to the experience (e.g., betrayal, guilt, rejection, inadequacy), efforts of justification, and both short- and long-term effects of the infidelity. While this study clarifies the nature of infidelity, emphasizes the salience of emotional aspects of involvement with an online partner, and has implications for the perceived potential of online infidelity to result in offline infidelity, the next step in research on online infidelity is to conduct more research with involved and betrayed partners. To date, it appears that no empirical studies have been conducted with participants that have specifically experienced online infidelity.

Research also is warranted that builds upon the linkages that were uncovered between online and traditional infidelity. For example, the possibility of online infidelity leading to ongoing face-to-face interaction and emotional infidelity needs to be explored. Additionally, while this study focused on identifying the extent to which individuals believe online infidelity is likely to lead to traditional infidelity, it is important to also explore the likelihood that traditional infidelity may lead to online infidelity. The possibility that both traditional and online betrayal may occur simultaneously in a relationship deserves greater attention as we strive to more fully understand the impact of technology on the development and maintenance of close relationships.

References

Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science*, *3*, 251–255.

Buss, D. M., Shackelford, T. K., Kirkpatrick, L. A., Choe, J. C., Lim, H. K., Hasegawa, M, et al. (1999). Jealousy

and the nature of beliefs about infidelity: Tests of competing hypotheses about sex differences in the United States, Korea, and Japan. *Personal Relationships*, *6*, 125–150.

Buunk, B. P., Angleitner, A., Oubaid, V., & Buss, D. M. (1996). Sex differences in jealousy in evolutionary and cultural perspective: Tests from the Netherlands, Germany, and the United States. *Psychological Science*, *7*, 359–363.

Green, M. C., & Sabini, J. (2006). Gender, socioeconomic status, age, and jealousy: Emotional responses to infidelity in a national sample. *Emotion*, *6*, 330–334.

Kitzinger, C., & Powell, D. (1995). Engendering infidelity: Essentialist and social constructionist readings of a story completion task. *Feminism and Psychology*, *5*, 345–372.

Maheu, M. M. (2001). SHPM cyber-affairs survey results. Retrieved October 29, 2001, from http://www.selfhelpmagazine.com/cgibin/cyber_survey.cgi?results=go&start=go

Merkle, E. R., & Richardson, R. A. (2000). Digital dating and virtual relating: Conceptualizing computer mediated romantic relationships. *Family Relations*, *49*, 187–192.

Nannini, D. K., & Meyers, L. S. (2000). Jealousy in sexual and emotional infidelity: An alternative to the evolutionary explanation. *Journal of Sex Research*, *37*, 117–122.

Parker, T. S., & Wampler, K. S. (2003). How bad is it? Perceptions of the relationship impact of different types of Internet sexual activities. *Contemporary Family Therapy: An International Journal*, *25*, 415–429.

Parrott, W. G., & Smith, R. H. (1993). Distinguishing the experiences of envy and jealousy. In P. Salovey (Ed.), *The psychology of jealousy and envy* (pp. 3–30). New York: Guilford.

Roberts, D. F., Foehr, U. G., & Rideout, V. J. (2005). *Generation M: Media in the lives of 8-18 year olds*. Menlo Park, CA: Kaiser Family Foundation.

Roscoe, B., Cavanaugh, L. E., & Kennedy, D. R. (1988). Dating infidelity: Behaviors, reasons, and consequences. *Adolescence*, *23*(89), 35–43.

Tidwell, L. C., & Walther, J. B. (2002). Computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations: Getting to know one another a bit at a time. *Human Communication Research*, *28*, 317–348.

Walther, J. B., Loh, T., & Granka, L. (2005). Let me count the ways: The interchange of verbal and nonverbal cues in computer-mediated and face-to-face affinity. *Journal of Language and Social Psychology*, *24*, 36–65.

Wehrly, B. (2002). Dealing with jealousy issues. *Counseling and Human Development*, *34*(9), 1–11.

Whitty, M. T. (2003). Pushing the wrong buttons: Men's and women's attitudes toward online and offline infidelity. *CyberPsychology & Behavior*, *6*, 569–579.

Whitty, M. T. (2005). The realness of cybercheating: Men's and women's representations of unfaithful Internet relationships. *Social Science Computer Review*, *23*, 57–67.

Young, K. S., Griffin-Shelley, E., Cooper, A., O'Mara, J., & Buchanan, J. (2000). Online infidelity: A new dimension in couple relationships with implications for evaluation and treatment. *Sexual Addiction and Compulsivity*, *7*, 59–74.