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Monogamy, the Protective Fallacy: Sexual versus Emotional Exclusivity and the Implication for Sexual Health Risk

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The authors examined the hypothesis that many individuals define monogamy based on emotional rather than sexual fidelity. Participants, 373 heterosexual college students and 282 gay men, read three vignettes of decreasing mitigation in which they imagined committing an act of infidelity against a hypothetical partner and where half the participants were cued to their emotional attachment toward the partner. Despite the infidelity, relationships in the emotional attachment–cued vignettes were rated as monogamous to a greater degree than relationships in the vignettes where emotional attachment was not cued. In addition, over one-third of the participants in our study reported infidelity in their current self-defined monogamous relationships yet also reported feeling more protected from sexual health risks and reported less condom use than individuals who defined their relationship as nonmonogamous. The implications for monogamy as a protective fallacy are discussed.

The majority of sexual risk reduction campaigns for adults have focused on three ways to protect themselves from infection: (a) use a latex condom, (b) reduce their number of sexual partners, and (c) have sexual intercourse only in monogamous relationships. The first two reduction strategies have been studied extensively elsewhere (e.g., Belden, Park, & Mince, 2008; Derman & Thomas, 2011; see Lyles et al., 2007; Johnson, Carey, Chaudoir, Reid, 2006; see McKechnie, Bavinton, & Zablotska, 2013; Norton, Fisher, Amico, Dovidio, & Johnson, 2012) and are not the focus of this article. Our interest is to empirically examine the validity of monogamy as a risk reduction strategy. By establishing how individuals define it, we present how monogamy, as practiced in the real world, and as tied to the larger cultural mores, relates to its clinical efficacy for human immunodeficiency virus/sexually transmitted infection (HIV/STI) risk reduction.

Monogamy

As a way to reduce their risk of contracting HIV and other STIs, public policy and education campaigns have

encouraged individuals to engage in sexual intercourse only in monogamous relationships (Centers for Disease Control and Prevention [CDC], 2006; Warren, Harvey, & Agnew, 2012). In addition to its believed efficacy for reducing the risk of contracting an STI, monogamy also represents the sociocultural ideal of a relationship and signifies that the partners have reached a high level of commitment and trust (Baumgartner, Lugina, Johnson, & Nyamhanga 2010; Conley, Moors, Matsick, & Ziegler, 2013; Conley, Ziegler, Moors, Matsick & Valentine, 2013; Corbett, Dickson-Gomez, Hilario, & Weeks, 2009; Oswalt & Wyatt, 2011). Together these two factors should create a high degree of psychological and social pressure to form these dyadic relationships.

Among heterosexual college students and gay men, two groups at high risk of STIs (Trieu, Bratton, & Marshek, 2011; CDC, 2013), there is strong evidence that the monogamy message has been heard. Rates of monogamous-identified relationships have significantly increased over time for both populations (Gotta et al., 2011). A 20-year cross-sectional study of sexually active heterosexual college students found that, across all study points, the vast majority of students, 86% in the most recent observation, chose monogamy as their relationship style, and the majority of them stated they used monogamy as a safer-sex strategy, relying on love and fidelity for protection (Netting & Burnett, 2004).

Prior to the emergence of HIV, monogamy was not the norm in gay male relationships (Berger, 1990; Bolton,

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1992). However the pressure to conform to the perceived safety of the monogamous ideal has been great, and many gay men now define their relationships as monogamous (Gotta et al., 2011; LaSala, 2004b; Wirth, 2010).

Nevertheless, what many unmarried individuals have defined as monogamy is, at best, serial monogamy, the act of going from one relatively short-term monogamous relationship to another (Anderson, 2010; Netting & Burnett, 2004). Yet for many people, even that definition is highly suspect (Lenoir, Adler, Borzekowski, Tschann, & Ellen, 2006). For example, across studies of unmarried young adults in “monogamous” relationships, infidelity rates seem to average about 33%, with a range of 20% to 57% (Eyre, Flythe, Hoffman & Fraser, 2012; Netting & Burnett, 2004; Vail-Smith, Whetstone, & Knox, 2010; Warren et al., 2012). Further, research findings have suggested that many college students believe that monogamy is not breached by either short breakups, even if there is the opportunity for either partner to engage in extradyadic sex or one-night stands, especially if alcohol is involved (Anderson, 2010; Rehnberg & Barabasz, 1994).

Finally, Warren and colleagues (2012) looked at explicit monogamy agreements among heterosexual young adults and found that when both partners were asked if they had discussed monogamy in their relationship, a full one-third of couples could not agree on whether they had discussed it; of those who did, 40% could not agree on whether they had agreed to be monogamous or not. Not surprisingly, nearly 30% of couples reported monogamy had not been maintained in their relationship.

Likewise, although most gay men indicate at the beginning of a relationship that they intend to be monogamous, over time many report at least some, if not recurrent, infidelity (Anderson, 2012; Bonello & Cross, 2010; LaSala, 2004a). Research shows that infidelity rates for gay male couples in committed monogamous relationships are 50% or higher (Gotta et al., 2011; LaSala, 2004b).

Monogamy and Condom Use

Unless individuals consistently use condoms with both their primary and nonprimary partners, these findings call into question monogamy’s efficacy as a safer-sex strategy. Paradoxically, however, the research literature has consistently shown that being in a monogamous relationship is negatively correlated with condom use (Bauman & Berman, 2005; Bolton, McKay, & Schneider, 2010; Bonello & Cross, 2010; Corbett et al., 2009; Duncan, 2011; Oswald & Wyatt, 2014; Netting & Burnett, 2004; Warren et al., 2012; Wright, 2009). In fact, individuals view not using condoms as a sign of trust and commitment, and even couples in high-risk relationships are willing to forgo condoms as a way to place their affective ties to their partner above their own physical health concerns (Corbett et al., 2009).

These beliefs are so powerful that one sexual risk reduction intervention found that the only group that did not lower its risky sexual behaviors following intervention consisted of individuals with a steady partner (Walsh, Senn, Scott-Sheldon, Venable, & Carey, 2012).

Similarly, among gay men, the perceived safety of a monogamous relationship has prompted many gay couples to forgo safer sexual practices. For gay men, as for college students, monogamy is predictive of less condom use (Bonello & Cross, 2010). Not only are gay men in monogamous relationships less likely to use condoms with their primary partner, they are also more likely to engage in high-risk sexual behaviors with this partner (i.e., unprotected anal intercourse) than are gay men in nonmonogamous relationships (Brady, Iantaffi, Galos, & Rosser, 2013; Davidovich, de Wit, & Stroebe, 2000).

In summary, many college students and gay men may believe that their monogamous relationships are protective against HIV, thus eliminating the need for condoms. However, many of these relationships are not sexually monogamous and are, at best, serially monogamous. If we assume that individuals understand the definition of monogamy, then the obvious question is this: How can individuals justify labeling a relationship as monogamous when in fact it is not?

Emotional Monogamy

In an in-depth qualitative study of gay men who were having sex outside their self-defined monogamous relationships, Bonello and Cross (2010) found that the majority of these men redefined the meaning of monogamy to include only the emotional connection they maintained with a partner and did not base it on sexual fidelity. Despite reporting very strong affective ties to their primary partner, having sex outside the relationship did not constitute cheating for these men as long as they did not form an emotional connection to the extradyadic partner. In fact, the study participants were able to describe in great detail the lengths to which they went and the “rules” they had established to maintain *emotional* monogamy in their primary relationships. This emphasis on the importance of emotional fidelity was echoed in a recent meta-analysis that showed both men and women would be more upset with emotional infidelity than sexual infidelity (Carpenter, 2012).

Perhaps outside the confines of clinical research it is this definition of monogamy that individuals are using to maintain consonance between their belief (“I am in a monogamous relationship”) and their behavior (“I am having sex with someone other than my monogamous partner”). This could lead to two distinct definitions of monogamy: the accepted paradigm, which emphasizes sexual exclusivity, and the one used in the real world, which emphasizes emotional exclusivity or, as one study put it, “monogamy of the heart” (LaSala, 2004b).

Hypotheses

The present study had two main goals. First, we wanted to examine a question: If faced with an act of sexual infidelity, would emotional faithfulness mitigate the act? We predicted that two independent samples, college students and gay men, would continue to define a relationship as monogamous despite an act of infidelity if they were cued to their emotional attachment to their partner. We tested this hypothesis under three conditions with infidelity occurring during a short breakup; a one-night stand where the participant is highly intoxicated; and a simple one-night stand. Using as a guide Rehnberg and Barabasz's (1994) conclusion that circumstances mitigate an end to monogamy, we predicted that, regardless of attachment cue, individuals would rate the breakup vignette as monogamous to a greater degree than the other two vignettes. Further, because alcohol is presupposed to impair judgment, thus reducing personal responsibility (Simkins, 1995), we predicted higher monogamy ratings in the one-night-stand vignette where the participant is highly intoxicated than the one-night-stand vignette that does not involve alcohol. We expected this pattern of findings regardless of sample group. Therefore, we expected no differences in gay male and heterosexual college student response patterns.

Second, we wanted to reconfirm past findings on condom use, infidelity, and perceived sexual safety in the study of individuals' actual sexual relationships. To this end, participants were asked about their sexual behaviors and beliefs regarding their actual current relationship. Regarding participants' perceptions of their current relationships, we hypothesized, based on past research (Bauman & Berman, 2005; Bonello & Cross, 2010; Corbett et al., 2009; Netting & Burnett, 2004; Warren et al., 2012; Wright, 2009), that individuals who self-identified their current relationship as monogamous would use condoms less often than individuals in nonmonogamous relationships. We further predicted that participants in a self-defined monogamous relationship would feel less susceptible to contracting an STI or HIV from their partners and would believe that their current relationships provided safe sexual environments.

The study hypotheses were tested on heterosexual college students and gay men. We emphasize that the two samples were not drawn to make comparisons between them but rather for generalizability and to confirm the results of the study in two separate population samples.

Methods

Participants and Procedures

To reach a 95% confidence interval with less than a 5% margin of error, we concluded we would need a minimum total sample size of approximately 400. Participants responded to the study variables in a five-page

questionnaire that took approximately 15 minutes to complete.

College student sample. Students were recruited, with prior consent of the instructors, from classrooms at six university and community college campuses in and around Southern California. Participants received course extra credit, credit for a course research requirement, or \$1 monetary compensation. Participants filled out the questionnaire at home and returned it anonymously by mail in postage-paid envelopes. A total of 690 surveys were distributed and 393 were returned for a response rate of 57%. Mean age was 23 ($SD = 5.27$) years with 56% identifying as Caucasian/White, 17% Hispanic/Latino/Mexican, 13% Asian American, 4% African American, 2% Filipino/Pacific Islander, 3% multiracial, and 5% "other." In all, 82% of the sample reported being sexually active. One individual reported being HIV positive, and 13% ($n = 41$) of the sample reported having/having had an STI. Ten individuals self-identified their sexual orientation as gay/bisexual and were eliminated, leaving a final sample of 383 (148 males, 235 females) heterosexual college students.

Gay male sample. The mailing list of a Southern California-area gay and lesbian center was used to recruit participants. The survey and a cover letter from the center indicating their approval of the project were mailed to a random sample of 793 of the center's mailing list of 8,000 individuals. The mailing was sent directly from the center to maintain the confidentiality of the mailing list. Participants were told that a \$3 donation would be given to the center for each returned survey. A total of 76 surveys were returned with incorrect addresses and nine were marked "deceased" or returned uncompleted. A total of 352 completed surveys were returned for an acceptable response rate of 50%. Of these, 35 surveys were from women or heterosexual men and were eliminated from the study. The final sample consisted of 317 self-identified homosexual men. The mean age of the sample was 37 years ($SD = 10.83$) with 73% self-identifying as Caucasian/White; 13% Hispanic/Latino/Mexican, 4% Asian American, 2% African American, 1% Filipino/Pacific Islander, 5% multiracial, and 1% "other" (percentages do not add to 100 due to rounding). In this sample, 99% reported being sexually active, 40% reported having/having had an STI, and 11% ($n = 34$) were HIV positive or had acquired immunodeficiency syndrome (AIDS).

Measures

Manipulation of emotional versus nonemotional monogamy. To test the first set of hypotheses, we developed three relationship vignettes that each depicted a hypothetical act of infidelity committed by the study participant against a primary partner. The vignettes were

created by a group of graduate students in a health psychology seminar who were instructed to choose situations they thought would have the most hedonic relevance to the groups being sampled and the ability to tie the vignettes to previous research (Rehnberg & Barabasz, 1994). Participants were told: "Imagine that you are in a primary relationship. Based on this information, please read the following vignettes and answer the questions." Half of the participants received infidelity vignettes that contained a statement of their emotional attachment to the hypothetical partner; the other half received the same vignettes without an affective cue. The vignettes, varied by the two conditions, are presented in Table 1. Two questions followed each vignette. One asked, "Would you consider your relationship with your partner monogamous?" Respondents answered on a 5-point scale where 1 = *Definitely yes*, 2 = *Probably yes*, 3 = *Somewhat*, 4 = *Probably not*, and 5 = *Definitely not*. Responses were reverse coded for analyses so that a higher score indicated a greater degree of monogamy. The second question was open ended and asked participants to explain why they did or did not consider the relationship monogamous.

Open-ended responses. We analyzed open-ended responses to the second question for each vignette from only those participants who responded anything other than *Definitely not* to the question of whether they considered their primary relationship monogamous. We reasoned that a response of *Probably not* indicated that the individual had left open, at least to some degree,

the possibility that the relationship was still monogamous. Open-ended responses were coded into categories by two researchers and a graduate student blind to the study hypotheses. Each response could be coded only into a single response category, and the interrater reliability was found to be good ($\alpha = .94$). Coding differences were resolved through discussion until consensus was reached. For the breakup vignette, a total of 403 open-ended responses were grouped into six categories. For the intoxicated vignette, 153 responses were coded into six categories. For the one-night stand vignette, 135 responses were coded into five categories.

Measures of Participants' Actual Current Relationship

Additional data were collected only from those participants who were currently involved in a primary relationship. A primary relationship was defined in the study as "a relationship where you consider yourselves lovers or a couple, and where you have had sex together at least sometime in the relationship. However, this does not necessarily mean you see only each other."

Sexual experience. Participants were classified as being currently sexually active if they responded affirmatively to a single item that asked, "Have you ever participated in anal or vaginal intercourse (in the current relationship)?"

Condom use. Condom use for participants currently involved in a relationship was measured by the open-ended question, "What percentage of the time

Table 1. *The Three Study Vignettes by Condition Type*

Vignette	Condition	
	Nonemotional	Emotional
Breakup	You and your partner have not been getting along well lately, so you both decide it is not working out and you break up. You date several other people and have sexual intercourse with one of them. However, after seeing "what's out there," you both realize that your relationship was as good as any, so you get back together.	Although you love your partner, the two of you aren't getting along. You both decide it is not working out and you break up. You date several other people and have sexual intercourse with one of them. After seeing "what's out there," you both realize that breaking up was a mistake and that you really love each other and the two of you get back together.
One-night stand	You meet an attractive law student named Chris at a party and the two of you really hit it off. You end up having sexual intercourse. Afterward, you confess to Chris that you are involved in a relationship and, because you don't want your partner to find out, you never see Chris again.	You meet an attractive law student named Chris at a party and the two of you really hit it off. You end up having sexual intercourse. Afterward, you confess to Chris that you are involved in a relationship and, because you really love your partner, you never see Chris again.
Intoxicated	You're out with friends drinking and dancing the night away. At one point your friends tell you it's time to go home and one of the people you danced with a couple of times offers to give you a ride home. The two of you end up having sex. Afterward, the two of you don't exchange numbers and never see each other again. Your partner never finds out.	You're out with friends drinking and dancing the night away. At one point your friends tell you it's time to go home and one of the people you danced with a couple of times offers to give you a ride home. The two of you end up having sex. Afterward, the two of you don't exchange numbers and never see each other again. Your partner never finds out, but you can't believe that you have risked hurting the person you love more than anything.

have you used condoms for vaginal or anal intercourse with this partner?"

Relationship commitment. A four-item scale was developed to measure commitment in a current actual relationship. The scale asked participants to rate commitment to partner, trust in partner, satisfaction with the relationship, and how "in love" they were with their partner. These variables have all been found to be correlated in previous research on relationship commitment (Heesacker, Smith, & Lawrence, 1998; Rusbult, Martz, & Agnew, 1998). Items were rated on a 5-point scale with a higher score indicating the participant felt a greater sense of the variable in their current relationship. The scale demonstrated acceptable reliability ($\alpha = .82$).

Relationship status. Respondents answered two dichotomous questions indicating whether they considered their current relationship monogamous and whether they had had sexual intercourse with someone else during this relationship.

Safety of current sexual environment. Belief in a safe sexual environment was measured by asking individuals the following: "If you have ever had sexual intercourse without using a condom [with your current partner], please indicate the extent to which each of the following are reasons why you chose not to use condoms." The five items were "believed that my partner was HIV negative," "knew my partner's sexual history," "we're in a monogamous relationship," "my partner was not the sort of person who would be HIV positive," and "believed that I was HIV negative." Responses ranged from 1 (*Not at all*) to 4 (*A great deal*). This scale was developed by Thompson, Anderson, Freedman, and Swan (1996) and was found to have good internal consistency and to be negatively correlated with condom use. In the present study, the scale had an alpha reliability of .75. Participants were also asked to separately rate their risk of contracting HIV and their risk of contracting an STI from their current partner on two 4-point scales ranging from 1 (*No risk*) to 4 (*High risk*).

Results

Combining Samples

Although our study included two population samples, heterosexual male and female college students and gay males, we made no prediction expecting to find differences between or among them on the study hypotheses. To verify that we could combine the genders and sample groups for the study analyses, we first conducted $2 \times 2 \times 3$ mixed design analyses of variance (ANOVAs) on the monogamy ratings. In the college student sample, the analysis of gender \times scenario

type \times vignette on monogamy rating showed no main effect of gender, $F(2, 354) = 2.52$, n.s., or interaction, $F(2, 354) = .175$, n.s. The second analysis of sample group \times scenario type \times vignette revealed no main effect for sample group, $F(1, 650) = .162$, n.s., or interaction of sample group by scenario type, $F(2, 649) = .908$, n.s., on monogamy rating. We concluded that participants could be combined as a single group for the first set of analyses.

Scenario Type, Vignettes, and Ratings of Monogamy

We conducted a split-plot ANOVA, scenario type (emotional versus nonemotional) by vignette type (breakup, intoxicated, one-night stand) with monogamy rating as the dependent variable. As predicted, an overall main effect for scenario type was found, Wilkes-Lambda = .60, $F(2, 651) = 218.36$, $p < .001$, $\eta_p^2 = .402$. Univariate ANOVAs revealed significant differences in monogamy ratings for each of the three vignettes. In each instance, despite an act of infidelity, the emotional vignettes were given higher monogamy ratings than the nonemotional vignettes: breakup, $F(1, 656) = 8.66$, $p < .01$, $r = .11$; intoxicated, $F(1, 655) = 16.63$, $p < .001$, $r = .16$; and one-night stand, $F(1, 656) = 4.88$, $p < .05$, $r = .09$. Table 2 presents the means and standard deviations for each vignette by scenario type.

As hypothesized, planned comparisons confirmed that, regardless of scenario type, participants rated the relationship in the breakup vignette as monogamous to a higher degree than the relationship in the other two vignettes, $t(654) = 20.83$, $p < .001$, $r = .63$, and they rated the intoxicated vignette relationship as monogamous to a greater degree than the one-night-stand vignette relationship, $t(654) = 2.75$, $p < .01$, $r = .11$.

The open-ended questions following the vignettes were analyzed for differences in response patterns by scenario condition (emotional versus nonemotional). First, we conducted chi-square goodness-of-fit tests for each scenario condition by vignette. Results showed a significant

Table 2. Means and Standard Deviations for Heterosexual College Students and Gay Men on the Hypothetical Vignettes by Emotional and Nonemotional Scenario Types

Vignette		Scenario Type	
		Emotional	Nonemotional
Breakup	<i>M</i>	3.10 ^a	2.76 ^b
	<i>SD</i>	1.54	1.41
Intoxicated	<i>M</i>	1.93 ^c	1.57 ^d
	<i>SD</i>	1.28	.97
One-night stand	<i>M</i>	1.77 ^e	1.58 ^d
	<i>SD</i>	1.19	1.00

Note. Higher means indicate higher monogamy rating. Scenario totals with different superscripts are significantly different at $p < .05$.

Table 3. Analysis of Responses to the Open-Ended Question “Do You Consider Your Relationship With Your Primary Partner to Be Monogamous? Why or Why Not?” by Scenario Type

Vignette	Response Category	Number of Responses		Z Score
		Emotional	Nonemotional	
Breakup	We're still emotionally monogamous	24	7	2.99**
	We were broken up at the time/We were faithful during the relationship	119	81	2.83**
Intoxicated	It was a mistake/Unintentional/I would feel guilty or remorseful	24	2	4.21***
	We're still emotionally monogamous	14	1	3.26**
One-night stand	Not responsible due to alcohol	12	4	2.00*
	We're still emotionally monogamous	17	2	3.33**
	It was a mistake/Unintentional	13	2	2.90**
	It was only once	11	24	-2.26*

Note. Only significantly different responses are included. Responses could be classified into only one category. A positive value indicates that those receiving the emotional vignettes were more likely to give this answer. Examples of open-ended responses placed in the “we’re still emotionally monogamous” category include “because I love my partner,” “because you only love each other,” and “we’re still emotionally monogamous.” * $p < .05$; ** $p < .01$; *** $p < .001$.

difference in overall open-ended response patterns for each scenario type by vignette: breakup, $\chi^2(5, N=403) = 21.87, p < .01$; intoxicated, $\chi^2(5, N=153) = 27.41, p < .05$; one-night stand, $\chi^2(4, N=135) = 24.72, p < .01$. Percentages were transformed into z scores to test for significant differences in response patterns within each open-ended response category. Table 3 presents the results of only those responses that were significantly different between groups. As shown in the table, individuals receiving the emotional scenarios were more likely to indicate that the hypothetical relationship was monogamous at least to some degree due to maintained emotional attachment to the imaginary partner. Respondents in the emotionally cued condition were also more likely to state that the act of infidelity was a mistake or that they would feel remorseful, that the relationship was monogamous because they had been faithful during the relationship, and that the act occurred because they were not in their right mind/not responsible for their actions because they were drunk. On the other hand, individuals who received the nonemotional scenarios were more likely than those who received the emotional scenarios to indicate that the relationship was monogamous to some degree because the act of infidelity occurred only once.

Monogamy, Infidelity, Condom Use, and Sexual Safety

Of the 476 participants currently involved in a primary sexual relationship, 72% self-defined this relationship as monogamous. Means and standard deviations of the following analyses based on participants’ actual self-defined monogamous relationships are reported in Table 4. Those reporting greater commitment to their partner were more likely to label their relationship as monogamous, $F(1, 474) = 98.90, p < .001, r = .42$, than those reporting less relationship commitment. However, over 36% of participants who defined their

relationship as monogamous indicated at least one act of infidelity. In this study gay male participants in self-defined monogamous relationships reported having more partners during this relationship than college students in monogamous relationships, $t(119) = 4.572, p < .001, r = .39$. In addition, 45% of gay men in self-defined monogamous relationships reported having more than one partner versus 30% of college students. As predicted, participants in a monogamous relationship used condoms less consistently with their current primary partner than participants in nonmonogamous relationships, $F(1, 426) = 5.67, p < .05, r = .11$, and they felt protected from sexual health risks in a variety of ways. They perceived less risk of contracting an STI, $F(1, 466) = 21.53, p < .001, r = .21$, or HIV, $F(1, 463) = 23.95, p < .001, r = .22$, from their current

Table 4. Differences Between Respondents Currently in a Self-Defined Monogamous versus Nonmonogamous Primary Relationship on Commitment, Infidelity, Condom Use, and Perceived Sexual Safety Variables

Measure	Primary Relationship Label	
	Monogamous	Nonmonogamous
Commitment ^a		
<i>M</i>	4.47**	3.72
<i>SD</i>	.61	.87
Condom use ^b		
Mean percent	50.81%*	63.51%
<i>SD</i>	43.31	40.25
HIV risk ^a		
<i>M</i>	1.78**	2.29
<i>SD</i>	.86	1.02
STI risk ^a		
<i>M</i>	1.78**	2.25
<i>SD</i>	.86	.98

^aScale range 1 to 5.
^bScale range 0 to 100.
* $p < .05$; ** $p < .001$.

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partner; and college students, but not gay men, in monogamous relationships were more likely to believe that their relationship provided a safe sexual environment than college students in nonmonogamous relationships, $t(206) = -2.776$, $p < .007$, $r = .19$; in the gay male sample, $t(118) = -1.104$, n.s. In the college student sample the mean was 3.49 ($SD = .56$) for those who labeled their relationship as monogamous and 3.20 ($SD = .74$) for those who identified their relationship as nonmonogamous. In the gay male sample the means and standard deviations, respectively, were 3.10 ($SD = .80$) and 2.92 ($SD = .95$).

Post Hoc Analyses

We wanted to see if we could tie the hypothetical findings regarding emotional commitment, monogamy, and condom use consistency to individuals' actual relationships. To test this, we selected only those individuals who were currently in a self-identified monogamous relationship and who had had sexual intercourse with someone else during this time ($N = 168$). We found that those who labeled their relationship monogamous but had had sex outside their current relationship used condoms significantly less frequently with their primary partner than those who had had sex outside their nonmonogamous relationship, $t(134) = 3.889$, $p < .001$, $r = .32$. Mean condom use for those labeling their relationship monogamous was 47.18 ($SD = 41.75$) versus 74.25 ($SD = 32.63$) for those labeling their relationship nonmonogamous. Figure 1 presents a complete picture of condom use by relationship and fidelity status. A one-way ANOVA of relationship commitment and monogamy rating revealed that individuals who felt more committed to their current partner were more likely to label their relationship monogamous despite having had sexual intercourse outside of the relationship, $F(1, 166) = 8.76$, $p < .01$, $r = .22$. Mean commitment scores (with standard

deviations in parentheses) for participants reporting infidelity and labeling their relationship monogamous were 4.07 (.67) compared to 3.72 (.88) for individuals reporting infidelity and labeling their primary relationship nonmonogamous. We believe these results provide further support for our assertion that individuals use emotional rather than sexual criteria in deciding whether to identify their relationship as monogamous.

Discussion

This study empirically establishes that the meaning of monogamy can extend beyond sexual exclusivity for heterosexual college students and gay men. Individuals who are cued to their emotional attachment to a hypothetical partner are more likely to consider the relationship monogamous despite an act of infidelity. We also confirmed the hypothesis that circumstantial factors predict whether infidelity signals an end to perceived monogamy. In other words, the setting in which infidelity occurs appears to affect whether or not it "counts" as a break in monogamy.

The findings of the hypothetical infidelity vignettes are made more convincing by the examination of the measures of infidelity, commitment, and monogamy in participants' actual primary relationships. We found that among individuals who had sexual intercourse outside their current relationship, those who reported greater emotional attachment to their partner were more likely to continue to label the relationship monogamous. These data provide evidence that the findings using the hypothetical vignettes have validity for understanding people's actual behaviors and beliefs. Thus, emotional attachment appears to be a convincing explanation as to why individuals may continue to label a sexually nonexclusive relationship as monogamous.

Monogamy: The Protective Fallacy

In addition, we found that people in monogamous labeled relationships used condoms less consistently, even if there was infidelity in the relationship, than those who had had sex outside a nonmonogamous relationship, a finding echoed by previous research (Conley, Moors, Ziegler, & Karathanasis, 2012). These results, combined with the finding that individuals perceive their self-identified monogamous relationships as providing safety from sexual health threats, seem to clearly indicate that monogamy, as practiced by many individuals, is really a protective fallacy. If individuals define a relationship as monogamous even when it is not and then use the perceived safety of monogamy to forgo condom use, monogamy could actually *increase* an individual's risk of HIV infection and thus, could be seen as a potential HIV risk factor (Crosby, Yarber, & Meyerson, 1999). As a case in point, research finds that

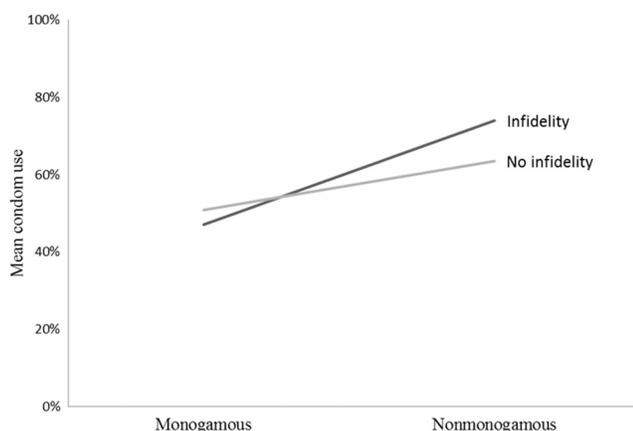


Figure 1. Condom use by fidelity and relationship status: Average condom use as a function of self-identified relationship type (monogamous versus nonmonogamous) and fidelity status.

the majority of gay men and heterosexual women who contract HIV are infected by a primary partner (Brady et al., 2013; O'Leary, 2000). If, as this study suggests, people are using emotional attachment when they say they are monogamous, then advocating monogamy to reduce HIV and STI transmission is an ineffective and irresponsible public health message. We need a realistic public discussion about this.

Implications for Future Research

We suggest that research focus on developing risk reduction programs targeted specifically to individuals in steady relationships (Baumgartner et al., 2010; Corbett et al., 2009; Vail-Smith et al., 2010) and to the particular psychosocial factors that impede sexual risk interventions with this population. First, interventions should specifically address what constitutes monogamous sexual behavior as well as the assumptions individuals make about a monogamous relationship. Individuals should be informed that they can maintain an emotionally committed relationship as long as this is not confounded with a belief that attachment is equivalent to monogamy. For example, a one-night stand may not constitute a break in the emotional commitment of a relationship but does violate the assumptions of a monogamous sexual relationship and, therefore has implications for sexual risk.

Further, research has long focused on sexuality solely as a physical behavior and ignored that it is first and foremost a social behavior, and that for most people the emotional needs sex fulfills (love and belonging) appear to be paramount. Our study highlights the importance of divorcing emotional attachment from sexual health risk protection. For example, heterosexual men in steady relationships are more likely to maintain higher rates of risky sexual behavior following a sexual risk reduction intervention than men who are not in a steady relationship at the time of intervention (Walsh et al., 2012). One explanation for this might be the meaning condom use implies within an ongoing relationship and the belief that relationship status itself confers a safe sexual environment. Therefore, research must begin to study ways to combat the perception that condom use implies a mistrust of one's partner (Baumgartner et al., 2010; Corbett et al., 2009) or that willingness to engage in unprotected sexual intercourse is indicative of an individual's commitment to or love of his or her partner (Bauman & Berman, 2005; Corbett et al., 2009; Rosenthal, Gifford, & Moore, 1998). Individuals seem to have obscured the line between trusting their partners emotionally and trusting that they would not infect them with an STI, something over which "trust" has no control.

Limitations

Finally, it is important to note some limitations and considerations in the current study. First, both samples

were convenience samples from a single geographical area, thus limiting the generalizability of the results. Further, the gay male participants responded to an anonymous mail survey and were subject to self-selection bias. Individuals who returned the questionnaire may have differed in some fundamental way from those who did not participate. A further limitation of mail surveys for both samples is that we were unable to determine that the individual filling out the survey was the same individual for whom the survey was intended or under what conditions the survey was completed.

In addition, it may be argued that the generally low monogamy ratings on the vignettes are an indication that people did not really consider the hypothetical relationship to be monogamous after an act of infidelity occurs (see Table 2). However, in its clinical definition, monogamy is a dichotomous variable; a relationship either is or is not monogamous. Thus, even a response of *Probably not* to a vignette indicates that individuals are using some criterion other than sexual exclusivity in making their response. Stating that the relationship is *Probably not* monogamous means that the individual is leaving open the possibility that, to some subjective degree, it still is. We would argue, given the relationship between self-reported monogamy and condom use, that this distinction holds scientific value.

Finally, it might be argued that although there were few statistical differences between the groups studied, they are not equivalent in risk. Gay men who use monogamy as a risk reduction strategy are at higher risk than college students who use monogamy, because the prevalence of HIV is higher among gay men compared to heterosexual college-attending men and women. However, our study aimed to determine whether monogamy was a viable protective strategy for either group. We believe that the findings strongly support our original supposition that monogamy is a protective fallacy. Regardless of prevalence in the population, monogamy as practiced in the real world is a risk factor for both groups. Both college students and gay men were less likely to use condoms in their monogamous identified relationships. Because most people who contract HIV sexually in the United States do so in the context of an ongoing relationship (Brady et al., 2013; O'Leary, 2000), and because over one-third of all new cases of gonorrhea and chlamydia occur in college-aged individuals (CDC, 2013), the study's findings are highly relevant to both groups studied.

Despite these limitations and concerns, the study has a number of strengths. It is the first study that we know of to experimentally establish that individuals use emotional criteria in defining monogamy. We were also able to extend the empirical findings to actual behavior in the participants' current relationships to strengthen our assertion that monogamy is a protective fallacy. Further, we achieved these results in two separate population samples increasing the validity of the

findings. We believe that the results of this study have an important role in developing interventions targeted specifically to individuals in monogamous relationships.

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