

# Sexual Regret: Evidence for Evolved Sex Differences

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**Abstract** Regret and anticipated regret enhance decision quality by helping people avoid making and repeating mistakes. Some of people's most intense regrets concern sexual decisions. We hypothesized evolved sex differences in women's and men's experiences of sexual regret. Because of women's higher obligatory costs of reproduction throughout evolutionary history, we hypothesized that sexual actions, particularly those involving casual sex, would be regretted more intensely by women than by men. In contrast, because missed sexual opportunities historically carried higher reproductive fitness costs for men than for women, we hypothesized that poorly chosen sexual inactions would be regretted more by men than by

women. Across three studies ( $Ns = 200, 395, \text{ and } 24,230$ ), we tested these hypotheses using free responses, written scenarios, detailed checklists, and Internet sampling to achieve participant diversity, including diversity in sexual orientation. Across all data sources, results supported predicted psychological sex differences and these differences were localized in casual sex contexts. These findings are consistent with the notion that the psychology of sexual regret was shaped by recurrent sex differences in selection pressures operating over deep time.

**Keywords** Evolutionary psychology · Sex differences · Parental investment theory · Sexual regret · Mating behavior

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## Introduction

Some of the most important decisions in people's lives involve whether to have sex, with whom to have sex, and in which social and relationship contexts to have sex. These decisions can result in a variety of consequences, including enhancing or damaging reputations, producing debilitating illness, bonding partners together, breaking up friendships and families, producing children, and leaving people wondering for decades about "the one who got away." Accordingly, romantic and sexual experiences provide some of people's fondest memories, but also some of their most common and poignant experiences of regret (e.g., Morrison & Roes, 2011; Roes & Summerville, 2005; Roes et al., 2006). In a series of three studies, we explored the potent experience of sexual regret and assessed the extent to which men's and women's experiences of sexual regret differed.

## Regrets: Romantic and Non-Romantic

The experience of regret is hypothesized to serve several functions. Regret about a recent event can motivate corrective

actions to undo the root cause of the regret (Beike, Markman, & Karadogan, 2009; Roese & Summerville, 2005). For example, regretting a conflict one had with a friend could motivate steps toward mending the relationship. Regret could also serve to improve future decisions when a similar situation arises again (Beike et al., 2009; Zeelenberg, 1999b). Simply anticipating regret about not using a condom, for instance, is associated with greater *anticipated* condom use and greater *actual* future condom use (Richard, De Vries, & van der Pligt, 1998; Richard, van der Pligt, & De Vries, 1996).

A recent study of a representative sample of U.S. adults demonstrates that regrets concerning love and sex play a major role in people's lives. When the participants were asked to describe one memorable regret in their lives, the most commonly cited form of regret involved "romance" (love, sex, dating or marriage; Morrison & Roese, 2011). Romantic regrets are likely to include many different experiences—getting a divorce, marrying the "wrong person," having an affair, not pursuing someone special, having casual sex with the wrong partner, losing one's virginity too early or too late, and so forth. Although the study found that women were more likely than men to describe a romantic regret, the differential consequences for women and men of a wide variety of sexual decisions throughout evolutionary history suggests that women and men will differ in the degree and manner to which they experience these varieties of romantic regrets. In the set of studies reported here, we sought to examine sex differences in romantic regret—and, in particular, sexual regret.

### Sex Differences in Sexual Psychology

Mirroring sex differences across other mammals, the amount of investment required for women to reproduce is greater than that required for men (Trivers, 1972). A woman's investment begins with 40 weeks of pregnancy in which caloric needs are elevated by 8–10 % (Dufour & Sauter, 2002) and is followed by a period of lactation in which caloric needs are elevated by 26 % (Dufour & Sauter, 2002). Because food resources were often scarce in ancestral environments, these investments by women were substantial and limited women's number of surviving offspring to perhaps as few as 2–3 children on average (Hewlett, 1991). Men often invest heavily in offspring (Geary, 2000; Marlowe, 2000, 2001), but their investments are not physiologically obligatory and not always required for offspring survival (Sear & Mace, 2008). Therefore, the minimal caloric investment from a father could be modest compared to the approximately half million additional calories required for the mother to create and raise a child to the age of weaning.

Although both sexes historically could have experienced reproductive benefits from short-term sexual encounters, including genetic benefits transmitted to offspring (Gangestad & Simpson, 2000; Greiling & Buss, 2000), the fitness benefits

of having a variety of sex partners were undoubtedly greater, on average, for men than for women. Each time a man had sex with a fertile sex partner, he could potentially produce a new offspring. In contrast, women in natural fertility conditions could only produce a new offspring after completing a prior pregnancy and weaning their child. Consequently, adding more sex partners could not result in a commensurate increase in offspring production for women as it could for men (Clutton-Brock & Parker, 1992; Trivers, 1972).

These sex differences in human reproductive biology suggest that the ancestral costs and benefits of sexual decisions differed for men and women (Buss & Schmitt, 1993; Symons, 1979; Trivers, 1972). These costs and benefits could have shaped a variety of psychological sex differences (Buss, 1995). For example, women are more selective than men in choosing sex partners (Kenrick, Groth, Trost, & Sadalla, 1993), men are more open than women to casual sex (Baumeister, Catanese, & Vohs, 2001; Buss & Schmitt, 1993; Clark & Hatfield, 1989; Gueguen, 2011; Simpson & Gangestad, 1991), and men desire more numerous sex partners than do women (Baumeister et al., 2001; Peplau, 2003; Schmitt et al., 2003). To the extent that actual or anticipated regrets shape future decisions (Sandberg & Conner, 2008; Zeelenberg, Inman, & Pieters, 2001; Zeelenberg & Pieters, 2009), they too are subject to evolutionary pressures.

### Sex Differences in Sexual Regret

The logic described above suggests that there will be sex differences in the regrets women and men have concerning their past sexual decisions and the regrets they anticipate having in hypothetical future decisions. We examined two hypothesized differences between men and women. First, women more than men will regret poorly chosen *sexual actions* (doing something and later wishing they had not). Second, men more than women will regret poorly chosen *sexual inactions* (not doing something and later wishing they had). We expected that these proposed sex differences in regret would be particularly large when the consequences of sexual decisions were linked with fitness costs (i.e., costs associated with decrements in reproductive success) that historically differed markedly for women and men. We also examined whether sex differences in sexual regret varied across sexual orientations, which allowed us to examine whether regrets are affected primarily by one's own sex or by the sex of one's partners.

For women, sexual actions in the ancestral past could have been costly in the currency of fitness. A casual sexual encounter could have led to an untimely pregnancy involving a man who was unwilling to invest in the woman and her child. Moreover, women sometimes engage in casual sex with the expectation that it could lead to a long-term committed romantic relationship (Buss & Schmitt, 1993). As a consequence, women could be more likely than men to regret engaging in

forms of casual sex that do not lead to committed relationships. For men, who are not obligated to invest in pregnancy and raising offspring, choosing the “wrong” sex partner might often have been associated with little negative impact on fitness. Although failing to invest may entail a decrement in offspring survival if the woman lacks kin or another investment partner, it nonetheless frees up the man’s resources and effort to devote to alternative uses, including securing additional mating opportunities. Thus, women on average have more to lose from casual sexual actions and consequently could regret them more than men do. This logic leads to our first hypothesis: Compared to men, women will have more numerous and stronger sexual action regrets, particularly those involving “casual” sex.

Because every sexual encounter with a fertile woman in the ancestral past could have led to a viable offspring, sexual inactions for men amounted to missed opportunities to reproduce. Along the same lines, the time that a man spent in a relationship without having sex could have been spent on a different, sexually active relationship in which reproduction was more likely. The cost of delaying sex was not necessarily as high for a woman, who could actually have benefitted from some additional time spent assessing a man’s value as a reproductive partner, including his long-term commitment to her and her potential children (Wachtmeister & Enquist, 1999). These differences in costs suggest that men will tend to regret missed sexual encounters and “delayed” sex more than women do. This logic leads to our second hypothesis: Compared to women, men will have more numerous and stronger sexual inaction regrets, particularly those involving missed opportunities for casual sex or not leaving a sexually inactive relationship.

We emphasize that these hypotheses concern on-average sex differences. For instance, the first hypothesis predicts that women are more likely than men to regret uncommitted casual sex encounters, but it does not predict that women universally regret or men universally prize all such encounters. Under certain conditions throughout evolutionary history, women could have received fitness benefits from short-term encounters (e.g., Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Pillsworth & Haselton, 2006a, b). For example, highly physically attractive short-term partners could have provided heritable benefits to offspring that compensated for reduced material investment in the woman and her offspring (Gangestad & Simpson, 2000; Haselton & Gangestad, 2006). Indeed, women raise their standards for physical attractiveness and testosterone-linked traits, hypothesized indicators of high fitness genes, when evaluating men as short-term affair partners (Frederick & Haselton, 2007; Kenrick et al., 1993; Li & Kenrick, 2006). Alternatively, women sometimes secure material benefits or potential back-up mates from short-term encounters (Greiling & Buss, 2000; Symons, 1979).

Several lines of evidence provide preliminary support for the hypotheses we have advanced. In samples of adolescents

(Wight et al., 2002) and college students (Sawyer & Smith, 1996), women were more likely than men to regret their first act of sexual intercourse. In U.S. adult samples, women were more likely than men to regret losing their virginity too early and having premarital sex whereas men were more likely than women to regret not losing it early enough and not having premarital sex (Dickson, Paul, Herbison, & Silva, 1998; Klassen, Williams, & Levitt, 1989). Further, college women regretted having had casual sex (Eshbaugh & Gute, 2008; Fielder & Carey, 2010) more so than college men (Campbell, 2008; Paul & Hayes, 2002; Townsend & Wasserman, 2011; but see Oswalt, Cameron, & Koob, 2002, who did not find such a sex difference except in instances of feeling pressured by a partner to have sex).

More direct evidence for these hypotheses was provided by two studies of undergraduates asked to list up to three of their most vivid romantic and non-romantic regrets (which were not limited to sexual regrets) (Roese et al., 2006). In the romantic domain, women were more likely than men to report action regrets whereas men more often reported inaction regrets. No sex differences emerged in other domains. In a third study by the same authors, undergraduate participants responded to three sexual action and three sexual inaction prompts, such as “I should have tried harder to sleep with \_\_\_” and “I wished I hadn’t slept with \_\_\_” (Roese et al., 2006). Men in the study reported regretting the listed sexual inactions more frequently and more strongly than did women, but there was no sex difference for sexual action regrets.

## Overview of Current Research

The existing findings are consistent with evolutionary logic concerning sex differences, but there are notable limitations in this literature. First, studies have not compared women’s and men’s regret reactions to identical events. Because women’s and men’s sexual histories might diverge in relevant ways (e.g., women could receive more opportunities for unwanted sex), differences in their regrets could arise partly because of differences in opportunity to experience certain events rather than differences in their psychological responses to those events. Although such differences in opportunity are themselves products of evolved sex differences in sexuality, it is also important to know whether men and women would anticipate different levels of regret about the same actions and inactions.

Second, almost all prior research has focused on the frequency but not the intensity of sexual regret. This is a significant omission, because frequency-based sex differences in some regrets could be either masked or enhanced by differences in the base rates of opportunity for the relevant sexual experiences. For instance, if men perceive having fewer opportunities for casual sex than women do, men might report fewer total instances of inaction regret, even if they are more

likely to regret each particular instance of sexual inaction. Measuring the intensity of regret does not pose the same problem; unlike a frequency measure, an intensity measure is not subject to the alternative explanation of differing opportunities. Also, if intensity of regret influences future behavior (Zeelenberg, 1999a), then intensity of regret could add crucial information about underlying psychological sex differences. Finally, little is known about sexual regrets in a non-heterosexual sample. Assessment of whether non-heterosexuals differ from heterosexuals in their pattern of regrets is important for disentangling the effects of one's own sex from the effects of the sex of one's partners, which helps to pinpoint the factors affecting differences in regrets between individuals.

The current research was designed to address these gaps in the literature. Study 1 measured the intensity of women's and men's anticipated regret in response to detailed vignettes describing sexual and romantic actions and inactions. These measures allowed for comparison of women's and men's reactions to the same scenarios as well as for a separate analysis of sexual and non-sexual relationship regrets. In accordance with the logic outlined above, these vignettes were written to convey experiences hypothesized to be associated with particularly large sex differences in fitness cost (e.g., casual sex followed by never seeing the partner again, which should be regretted more intensely by women, and a missed opportunity for casual sex with an attractive partner, which should be regretted more intensely by men).

Study 2 provides the most detailed and comprehensive examination to date of the specific sexual actions and inactions that adult men and women have experienced, including a total of 88 different regret experiences and an assessment of how intensely people regretted their actions and inactions. Study 3 again employed a regret intensity measure and expanded the investigation to a large online sample of U.S. adults. This sample included a substantial non-heterosexual subsample, allowing us to separate the influence of sex of the participant and sex of the partner on sexual regret. To address the concern that some sex differences in reports of regret could be due to different base rates in the opportunity to experience certain regrets, Study 3 also measured sex differences in the base rates of sexual actions and inactions.

## Study 1

The primary goal of Study 1 was to examine differences in men's and women's anticipated regret intensity in response to hypothetical scenarios of sexual versus romantic (non-sexual) actions and inactions. The sexual scenarios focused on events that women (one-night stand) and men (missing a one-night stand opportunity) were predicted to regret more strongly compared to the other sex. The primary goal was to

examine differences between men and women and not differences across scenarios, so the scenarios were allowed to vary in ways that permitted a vivid and specific depiction of casual sex actions and inactions. A secondary goal of this study was to collect free-response reports of participants' past sexual action and inaction regrets, the purpose of which is explained in more detail in Study 2.

## Method

### Participants

Male ( $n = 78$ ) and female ( $n = 122$ ) college students responded to advertisements for a study and completed a survey in a lab setting in exchange for entry into a lottery or for research credit in psychology or communication studies courses. Participants ( $M$  age = 19.7 years,  $SD = 2.2$ ) identified as Asian American (40%), White (33%), Latino/a (16%), or biracial, multi-racial, or another ethnicity (11%).

### Procedure

Participants were first asked about their top five life regrets, top five regrets from the past few years, top five action and inaction regrets, and top five romantic/sexual action and inaction regrets. These data are described in more detail in Study 2. Participants then read and rated four vignettes. In the first two vignettes, an actor either capitalized on an unexpected opportunity to have sex (sexual action) and later regretted it or passed up an unexpected opportunity to have sex (sexual inaction) and later regretted it (see Appendix 1).

The sexual action vignette emphasized that the protagonist never saw his or her sex partner again—a scenario that is hypothesized to have had more negative fitness consequences for women than for men (i.e., the potential for an unintended pregnancy without an investing partner). The sexual inaction vignette emphasized the sexual interest of the person the protagonist could have had sex with, thereby indicating a short-term mating opportunity that could have enhanced reproductive fitness for men more so than for women. In the other two vignettes, an actor entered a relationship that did not turn out well (romantic action) and later regretted it or passed up an opportunity to enter a relationship (romantic inaction) and later regretted it. The order of the vignettes was counterbalanced across participants.

The actor in the scenario matched the sex of the participant and participants rated their beliefs regarding the regret experienced by the actor, followed by their own anticipated regret if they found themselves in this scenario on a 9-point scale (1 = No Regret at All; 5 = Moderate Regret; 9 = Extreme Regret).

## Results and Discussion

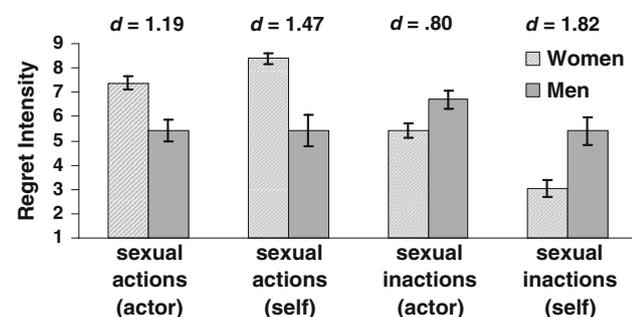
Throughout this article, when the main effects or lower-order interactions in an ANOVA were qualified by significant higher-order interactions, we report only the higher-order interactions. Results for the sexual regret vignettes are summarized in Fig. 1. These results confirmed the hypotheses that men anticipated more intense regret for casual sex inactions whereas women anticipated more intense regret for casual sex actions, even when these actions and inactions were identical for women and men.

### Omnibus Tests

To examine the effects of scenarios described in the vignettes, we conducted a 2 (Sex: Male vs. Female)  $\times$  2 (Scenario Type: Sexual vs. Romantic)  $\times$  2 (Regret Type: Action vs. Inaction)  $\times$  2 (Perspective: 3rd person vs. Self) mixed model ANOVA. There were significant three-way interactions of Sex  $\times$  Regret Type  $\times$  Scenario Type,  $F(1, 190) = 45.67, p < .001$ , and Sex  $\times$  Regret Type  $\times$  Perspective,  $F(1, 190) = 28.74, p < .001$ . Because the evolutionary logic guiding this work predicts sex differences that go in opposite directions for casual sex actions and inactions but not for romantic actions and inactions, the result of central importance is the three-way interaction of sex, regret type, and scenario type. We next turn to the specific comparisons of interest within this interaction.

### Sexual Action Regrets

As predicted by Hypothesis 1, women anticipated finding the casual sex action scenarios more regrettable than did men when rating their own anticipated regret,  $t(193) = 9.89, p < .001$ , and the presumed regret of the actor,  $t(192) = 7.95, p < .001$ .



**Fig. 1** Sex differences in regret intensity in sexual action and inaction scenarios (Study 1). *Note.* Participants rated the intensity of regret for the actor in the vignette (actor) and their own anticipated regret if they were the actor in the scenario (self). The error bars represent 95 % confidence intervals

### Sexual Inaction Regrets

As predicted by Hypothesis 2, men anticipated finding the casual sex inaction scenarios more regrettable than did women when rating their own anticipated regret,  $t(192) = 7.40, p < .001$ , and the presumed regret for the actor,  $t(192) = 5.41, p < .001$ . Although the action and inaction vignettes in this study differed in a number of ways, such as overall length, these differences did not confound the critical comparison by sex of rater because men and women rated identical scenarios. Such factors therefore cannot account for the sex differences observed here.

As shown in Fig. 1, the effect sizes for these sex differences were very large (ranging from .80 to 1.82), as is expected given that women and men are thought to have faced substantially different evolutionary selection pressures in these particular domains (Buss, 1995; Symons, 1979). These sex differences were larger than those documented in earlier sexual regret research that did not emphasize casual sex to the same extent as the vignettes used here (Roese et al., 2006; range of  $d$  reported = .21–.94). In sum, the findings suggest that regrets concerning casual sex are a locus of particularly robust sex differences.

### Romantic Regrets

In contrast to the casual sex vignettes, the romantic opportunity vignettes largely showed no sex differences, underscoring the fact that sex differences in regrets vary by domain, even within the overall category of mating-relevant regrets. Ratings of one's own anticipated inaction regret (female  $M = 6.0$ , male  $M = 6.5, t(193) = 1.56, p = .12$ ), presumed inaction regret for the actor (female  $M = 6.4$ , male  $M = 6.7, t(193) = 1.45, p = .15$ ), and presumed action regret for the actor (female  $M = 5.2$ , male  $M = 5.0, t(191) < 1$ , did not statistically differ between women and men. Women did rate their own anticipated action regret—getting involved in a relationship they later regretted—higher than did men (female  $M = 4.8$ , male  $M = 3.7, t(192) = 3.43, p = .001; d = .50$ ). These predominantly null results differ from those of Roese et al. (2006), who found sex differences in both romantic actions and inactions, possibly because their romantic measure included a combination of sexual and non-sexual regrets related to relationships.

The goal of Study 2 was to extend these findings in two ways. First, we moved beyond the undergraduate sample to consider action and inaction regrets among other adults. Second, we examined a variety of regrets where sex differences were expected and also a variety of regrets where no differences were expected. The goal of this design was to examine whether sex differences are particularly strong in domains that relate to hypothesized fitness costs and benefits that historically differed for men and women.

## Study 2

In Study 2, participants were presented with a checklist of regrets and were asked to indicate which regrets they had experienced. This procedure allowed us to assess whether women had experienced more sexual action regrets than men and whether men had experienced more sexual inaction regrets than women. Based on Hypothesis 1, we expected that women would be more likely than men to regret casual sex encounters. Based on Hypothesis 2, we also expected that men would be more likely than women to regret not pursuing or not engaging in casual sex as well as delaying sex in an existing committed relationship. In other cases, such as contracting an STD or having sex with a coworker, which can carry high costs for both women and men, we did not advance predictions about sex differences.

## Method

### Participants

Heterosexual male ( $n = 156$ ) and female ( $n = 239$ ) participants responded to advertisements for the study posted to the volunteers section of craigslist.org, an Internet website that is currently ranked as the seventh most visited English language website (Craigslist fact sheet, 2011). Men were somewhat older than women ( $M = 40$  years,  $SD = 14$  vs.  $M = 33$  years,  $SD = 12$ ),  $t(393) = 5.02$ ,  $p < .001$ . Participants identified as White (70 %), Asian American (7 %), Latino/a (6 %), Black (6 %), or another ethnicity (11 %).

### Procedure

In the free-response portion of Study 1, participants were asked about their top five life regrets, top five regrets from the past few years, top five action and inaction regrets, and top five romantic/sexual action and inaction regrets. Participants listed a total of 3,478 regrets, 348 of which were sex-related. Redundancies from these 348 regrets were eliminated by classifying similar regrets into the same category. We also added categories to include the logical converse of regrets that were nominated (e.g., “being paid to engage in a sexual activity with someone” was added to complement “paying someone to engage in a sexual activity with me”). The final list consisted of 88 unique sexual regrets, including 39 action regrets, 30 inaction regrets, and 19 regrets that were not easily classified as action or inaction (see Appendix 2 for the complete list).

To identify whether they had experienced these regrets, participants in Study 2 checked each regret they had experienced from this list. To identify the actions and inactions they

regretted most, they subsequently nominated up to five events from the list that they regretted most strongly.

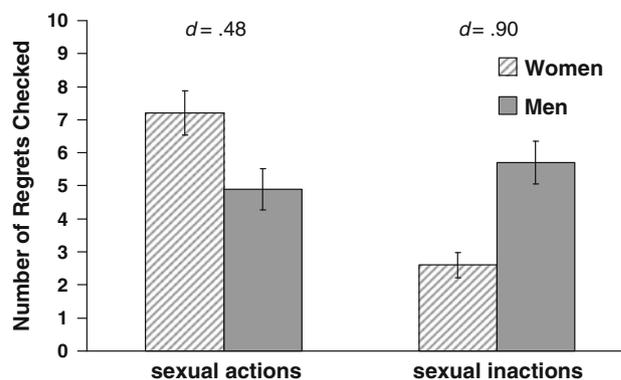
## Results and Discussion

### Overall Number of Regrets

On average, participants had more sexual action regrets ( $M = 6.3$  out of 39,  $SD = 4.9$ ) than inaction regrets ( $M = 3.8$  out of 30,  $SD = 3.7$ ), paired-samples  $t(394) = 7.78$ ,  $p < .001$ ,  $d = .55$ . As shown in Fig. 2, women reported more action regrets than did men,  $t(394) = 4.56$ ,  $p = .001$ , and men reported more inaction regrets than did women,  $t(394) = 8.67$ ,  $p < .001$ . These effects broadly support Hypotheses 1 and 2, respectively, and they remained significant when controlling for age.

Notably, none of the 39 sexual action regrets were more common for men than for women and only one of the 30 sexual inaction regrets was more common for women than for men. This regret was “not engaging in sexual activity with someone only because I did not want to appear promiscuous”; 16 % of women in comparison to 8 % of men reported this regret,  $\chi^2(1, N = 395) = 6.23$ ,  $p = .014$ . This difference possibly reflects the fact that women are more likely than men to worry about appearing promiscuous (Crawford & Popp, 2003). Because women are more likely than men to face negative consequences to their reputation for engaging in casual sex, they may make more sexual decisions in which reputational concerns are an issue.

The sex difference in the number of action regrets contrasts with Study 3 conducted by Roese et al. (2006), which did not find such a sex difference. A possible reason for this is that many of the specific action regrets on our list corresponded to clear reproductive fitness costs that historically differed by sex (e.g., uncommitted casual sex). In contrast, Roese et al. asked their participants more general questions, such as whether they regretted having sex with someone.



**Fig. 2** Sex differences in the number of sexual action and inaction regrets (Study 2). *Note.* The error bars represent 95 % confidence intervals

## Top Regrets

We highlight the regrets that were most often reported in the “top five” by women (Table 1) and by men (Table 2). Few of the top regrets overlapped between women and men and the top regrets that showed no sex difference (e.g., having unprotected sex) were those for which we did not have predictions about sex differences. A noteworthy and common regret that showed no significant sex difference was cheating on one’s partner, with 23 % of women and 18 % of men listing it as one of their five strongest regrets. Possibly, the lack of a sex

difference here is a consequence of the fact that discovered infidelity carries extremely high costs for both sexes, including the possibility of relationship dissolution (Betzig, 1989).

As shown in Table 1, action regrets in the context of uncommitted sex dominated women’s top five lists. These included having a one-night stand, having sex with a stranger, and having sex with someone who falsely promised commitment. These results provide additional fine-grained support for Hypothesis 1, which states that sexual actions involving a lack of commitment will be those that women are particularly likely to regret.

**Table 1** Most common regrets in women’s “top five” lists in Study 2

Top-five rank	Regret	Type	Women (%)	Men (%)	$\chi^2$	<i>p</i>	<i>d</i>
1	<i>Lost virginity to “wrong” partner</i>	Action	<b>24</b>	10	9.22	.002	.35
2	<i>Cheated on past or present partner</i>	Action	23	18	1.31	ns	.12
3	Relationship progressed “too fast” sexually	Action	<b>20</b>	10	6.68	.009	.28
4	<i>Unsafe sex (worried about getting STD)</i>	Action	20	14	1.91	ns	.16
5	<i>Unsafe sex (worried about getting pregnant)</i>	Action	19	n/a	–	–	–
6	Sex with a stranger	Action	<b>20</b>	6	10.1	.001	.39
7	<i>Sex with an unattractive person</i>	Action	<b>17</b>	10	3.12	.08	.20
8	Sex with someone who faked commitment	Action	<b>17</b>	3	15.0	<.001	.43
9	Lost virginity too early	Action	<b>15</b>	1	18.1	<.001	.47
10	Sex with someone who is in another relationship	Action	14	10	1.19	ns	.12
11	One-night stand	Action	<b>12</b>	4	5.73	.016	.26
12	Sex that made me feel dirty	Action	<b>11</b>	2	9.57	.001	.35

*Note.* Italicized regrets appear in both women’s and men’s tables. Bolded percentages indicate sex differences. The regret descriptions are condensed; The verbatim wording that participants saw is presented verbatim in Appendix 2

**Table 2** Most common regrets in men’s “top five” lists in Study 2

Top-five rank	Regret	Type	Women (%)	Men (%)	$\chi^2$	<i>p</i>	<i>d</i>
1	Too shy to indicate sexual attraction to someone	Inaction	10	<b>27</b>	17.3	<.001	.47
2	Was not more sexually adventurous when young	Inaction	7	<b>23</b>	18.4	<.001	.49
3	Was not more sexually adventurous when single	Inaction	8	<b>19</b>	9.49	.003	.35
4	Did not experiment enough sexually	Inaction	8	<b>18</b>	7.47	.009	.30
5	<i>Cheated on past or present partner</i>	Action	23	18	1.31	ns	.12
6	<i>Unsafe sex (worried about getting STD)</i>	Action	20	14	1.91	ns	.16
7	Missed sexual opportunities by staying in bad relationship	Inaction	9	14	2.07	ns	.16
8	Invested too much effort trying to attract someone who never had sex with me	Other	5	<b>14</b>	9.09	.004	.35
9	Faked commitment in order to get sex	Other	4	<b>13</b>	9.14	.004	.35
10	<i>Unsafe sex (worried about getting partner pregnant)</i>	Action	n/a	12	–	–	–
11	<i>Lost virginity to “wrong” partner</i>	Action	<b>24</b>	10	9.22	.002	.20
12	<i>Sex with an unattractive person</i>	Action	<b>17</b>	10	3.12	.08	.26
13	Did not lose virginity early enough	Inaction	4	<b>10</b>	5.52	.03	.10
14	Relationship progressed “too slowly” sexually	Inaction	8	10	<1	ns	.04
15	Sex with a coworker	Action	9	10	<1	ns	.03

*Note.* Italicized regrets appear in both women’s and men’s tables. Bolded percentages indicate sex differences. The regret descriptions are condensed; The verbatim wording that participants saw is presented verbatim in Appendix 2

Women's top regrets also included having sex with a physically unattractive partner and women (17 %) were more likely than men (10 %) to list this as one of their strongest regrets. This result might seem somewhat counterintuitive, given the expectation that men place a greater premium than do women on physical attractiveness in potential mates (Buss & Schmitt, 1993). However, this result is consistent with two other replicable findings. First, women substantially increase their standards for attractiveness for casual sex partners (Buss & Schmitt, 1993; Kenrick et al., 1993; Li & Kenrick, 2006), possibly to gain genetic benefits for offspring. Second, men dramatically lower their standards in short-term mating contexts, including standards for physical attractiveness, and hence are less likely to regret casual sex with an unattractive partner. Although men do value physical appearance in potential mates, a low-cost sexual encounter with an unattractive partner historically would have still afforded a valuable reproductive opportunity that might offset collateral costs such as reputational damage.

In contrast to the women's list, Table 2 shows that men's aggregated "top five" list largely consisted of regrets predicted by Hypothesis 2. These include missing casual sex opportunities, not having sex early enough in a relationship, staying in a bad relationship and missing sexual opportunities as a result, and expending effort in pursuing someone whom they thought would have sex with them but did not (Table 2, Item 8). This last regret is a notable juxtaposition to the result that women regretted having sex with someone who they thought would enter into a relationship with them but did not (Table 1, Item 8). In essence, whereas women regretted being "led on" romantically, men regretted being "led on" sexually. This is consistent with sex differences observed in earlier work on levels of upset in response to being deceived by a member of the other sex (Buss, 1989; Haselton, Buss, Oubaid, & Angleitner, 2005).

Men's regret about unsuccessfully pursuing sexual opportunities is noteworthy for another reason. In contrast to the majority of regrets that men experienced more often than did women, this was not an inaction regret; yet, its greater prevalence for men follows from the logic of Hypothesis 2. According to Hypothesis 2, men regret sexual decisions that result in lost sexual opportunities. In this case, a poorly chosen action resulted in an opportunity cost, such that men were unable to pursue sexual opportunities with other women.

One reason why this regret is more prevalent for men than women could be simply because of sex differences in the base-rates of sexual pursuit. As in other species in which females are the slower-reproducing sex that acts as a "limiting resource" for male reproduction (Symons, 1979), human males are more likely than human females to be the initiators of sexual relationships. Therefore, relative to women, men are more likely to have more opportunities to regret pursuing sexually unsuccessful relationships. This last possibility

highlights a limitation of Study 2. Although the study assessed whether or not people regret a given experience, it did not measure the base rates of these experiences, which might contribute to the sex differences. For example, more women than men regretted having sex with a partner who feigned long-term commitment, but this finding might simply be due to the fact that women have this experience more often because of men's higher propensity to feign interest in commitment to curry favor with a potential sex partner (Haselton et al., 2005). Thus, accounting for base rates is important in investigating sex differences in frequency of regret, which we do in Study 3 for a targeted set of regrets.

A second limitation of Study 2 is that it was restricted to heterosexual men and women. The difficulty in recruiting large sample sizes of non-heterosexual participants limited our ability to examine whether sex differences in regret were robust across sexual orientations in Study 2. Nonetheless, examining whether similar sex differences exist between non-heterosexual women and men can inform our understanding of whether sexual psychology is linked primarily with the participant's own sex or with the sex of the target of the participant's attractions (Bailey, Gaulin, Agyei, & Gladue, 1994). If sex differences exist across sexual orientation categories, this strengthens the conclusion that certain classes of regrets are more typical of men or women. Therefore, in Study 3, we utilized a methodology that allowed us to recruit large samples of individuals with different sexual orientations.

### Study 3

Study 3 had two goals. The first goal was to separate the base rates of the occurrence of regrettable events from the frequency of regret about these events. The second goal was to replicate our basic findings in a much larger sample that included non-heterosexual participants. We accomplished the first goal by asking participants whether they had the relevant experience, and, if so, to what extent they regretted it. To achieve our second goal, we surveyed a large online sample of adults on the popular news website msnbc.com. We focused the survey on two specific behaviors: having casual sex (Hypothesis 1: women will regret more so than men) and passing up casual sex (Hypothesis 2: men will regret more so than women).

### Method

#### Participants

Participants were individuals who responded to a "Stress, Sex, and Success Survey" advertised in a banner ad on msnbc.com. Survey software prevented repeat participation from any given

computer. The sample of participants ( $N = 24,230$ ) included 11,203 heterosexual men, 11,612 heterosexual women, 334 gay men, 215 lesbian women, 359 bisexual men, and 507 bisexual women between the ages of 18–65 years. For regression analyses, sex was coded: 0 = men, 1 = women.

The average ages were: heterosexual men ( $M = 45$  years,  $SD = 12$ ), heterosexual women ( $M = 38$  years,  $SD = 12$ ), gay men ( $M = 40$  years,  $SD = 12$ ), lesbian women ( $M = 41$  years,  $SD = 12$ ), bisexual men ( $M = 45$  years,  $SD = 13$ ), and bisexual women ( $M = 33$  years,  $SD = 11$ ). The majority of participants were in committed long-term relationships: heterosexual men (85 %), heterosexual women (75 %), gay men (56 %), lesbian women (68 %), bisexual men (77 %), and bisexual women (76 %). For regression analyses, relationship status was coded: 0 = not in a committed relationship, 1 = in a committed relationship. We also collected data on participants' education (high school or less, some college, college degree, or advanced degree), coded 0–3 for regression analyses. Information on ethnicity was not collected.

### Sexual Regret Measures

Participants were asked: “Think about the *last time* you had each of the experiences listed below. How do you feel about your action or decision?” The experiences were “I had casual sex with someone” and “I passed up a chance to have casual sex with someone.” The response options were “Not applicable—I haven’t done this; 0 = I’m glad I did it; 1 = Neutral—neither glad nor have regrets; 2 = I regret it somewhat; and 3 = I regret it very much.” These response options allowed us to assess the level of regret separately from the base rate of the regrettable behavior. The regret variables were analyzed as a continuous 0–3 scale.

## Results and Discussion

The percentage of men and women regretting each experience is shown in Table 3. Due to large sample sizes, even small effects were statistically significant. Consistent with other research using these large online data sets (e.g., Frederick, Peplau, & Lever, 2006; Peplau et al., 2009), we emphasize effect sizes and highlight when effects pass the thresholds of  $\beta > .10$ ,  $d = .30$ , or an 8–10 percentage point difference. We first report omnibus tests and follow them with targeted tests of the sex differences predicted by our hypotheses.

### Baselines

Men and women reported similar rates (56 %) of having engaged in casual sex. Men (66 %) were somewhat more likely to report passing up a casual sex opportunity than were women (59 %),  $\chi^2(1, N = 24,230) = 148, p < .001$ , a counterintuitive

**Table 3** Regrets concerning most recent sexual actions and inactions reported in Study 3

	Glad I did it (%)	Neutral (%)	Regret somewhat (%)	Regret very much (%)
<b>Had casual sex</b>				
Heterosexual men ( $n = 6,264$ )	52	25	15	7
Gay men ( $n = 284$ )	51	26	16	7
Bisexual men ( $n = 284$ )	61	19	14	5
Heterosexual women ( $n = 6,470$ )	27	26	27	20
Lesbian women ( $n = 136$ )	36	24	26	14
Bisexual women ( $n = 376$ )	44	25	20	11
<b>Passed up casual sex</b>				
Heterosexual men ( $n = 7,351$ )	36	21	30	13
Gay men ( $n = 276$ )	35	27	28	10
Bisexual men ( $n = 285$ )	23	20	36	21
Heterosexual women ( $n = 6,784$ )	61	23	13	3
Lesbian women ( $n = 125$ )	51	23	22	4
Bisexual women ( $n = 361$ )	47	26	19	8

*Note.* The percentages are calculated for participants who reported having had the experience. For example, of the men who had casual sex, 52 % of them were glad they had done so. Because the percentages in each cell are rounded to the nearest whole percent, not every row adds up to exactly 100 %

result that could stem from a reporting bias rooted in other evolved sex differences: men’s misperception of women’s sexual interest or sex differences in defining what constitutes an “opportunity.” Evidence indicates that men tend to overestimate women’s interest (Haselton & Buss, 2000; La France, Henningsen, Oates, & Shaw, 2009). In addition, women might consider some situations in which they technically could have had sex so undesirable that these situations do not register as sexual “opportunities,” whereas the same situations might “count” as such for men. Men could therefore perceive casual sex opportunities in circumstances where women do not, leading to the biased result of men providing higher estimates than women of opportunities they passed up or did not act on.

All of the following analyses were conducted on the set of individuals who had the relevant experience. Thus, the sex differences in regrets reported below exist above and beyond any differences in the base frequency of the potentially regretted behaviors. The parametric analyses below were conducted using the continuous 0–3 regret scale. All sex

**Table 4** Summary of linear regression analysis for variables predicting the degree of regrets for men and women in Study 3

	Heterosexual	Gay/Lesbian	Bisexual
<b>Regret having casual sex</b>			
Age $\beta$	.00	-.16**	-.06
Education $\beta$	-.02	-.07	-.05
Relationship status $\beta$	.06**	.09	.05
Sex $\beta$	.30**	.17**	.14**
df	(4, 12729)	(4, 415)	(4, 655)
Model $F$	304.04**	8.26**	6.26**
$R$	.30	.27	.19
Adj. $R$	.09	.07	.03
<b>Regret passing up casual sex</b>			
Age $\beta$	-.01	.14*	-.04
Education $\beta$	-.04**	.04	-.05
Relationship status $\beta$	-.08**	-.16*	.05
Sex $\beta$	-.32**	-.14*	.16**
df	(4, 14128)	(4, 396)	(4, 640)
Model $F$	408.68**	7.74**	17.08**
$R$	.32	.27	.31
Adj. $R$	.10	.06	.09

\*\*  $p < .001$ ; \*  $p < .05$

differences listed below are also reflected in the percentages of women and men experiencing each regret (Table 3) and remained strong even when controlling for other factors (see Table 4).

#### Omnibus Tests

We conducted a 2 (male vs. female)  $\times$  3 (sexual orientation) between subjects ANOVA for each of the two sexual regrets. For casual sex action regrets, there was a significant Sex  $\times$  Sexual Orientation interaction,  $F(2, 13808) = 7.88, p < .001$ . Simple effects comparisons revealed that, compared to heterosexual women, both lesbian ( $p = .05$ ) and bisexual women ( $p < .001$ ) reported less regret,  $F(2, 6979) = 28.64, p < .001$ . There were no significant differences by sexual orientation category within men,  $F(2, 6829) = 2.93$ .

For casual sex inaction regrets, there was likewise a significant Sex  $\times$  Sexual Orientation interaction,  $F(2, 15176) = 3.66, p = .026$ . Simple effects revealed that, compared to heterosexual women, both lesbian ( $p = .014$ ) and bisexual women ( $p < .001$ ) reported more regret,  $F(2, 7267) = 28.29, p < .001$ . Bisexual men reported more regret than both heterosexual ( $p < .001$ ) and homosexual men ( $p < .001$ ),  $F(2, 7909) = 15.49, p < .001$ .

In order to test hypotheses about sex differences in regret, we next conducted specific comparisons of women and men

within each sexual orientation category for the two types of casual sex regrets.

#### Casual Sex Action Regrets

Heterosexual women regretted casual sex actions more than did heterosexual men (female  $M = 1.40, SD = 1.09$  vs. male  $M = .78, SD = .96$ ),  $t(12732) = 34.13, p < .001, d = .60$ . This was also true to a lesser extent for lesbian women in comparison to gay men (female  $M = 1.18, SD = 1.07$  vs. male  $M = .79, SD = .95$ ),  $t(418) = 3.71, p < .001, d = .39$ , and for bisexual women in comparison to bisexual men (female  $M = .98, SD = 1.04$  vs. male  $M = .64, SD = .92$ ),  $t(658) = 4.40, p < .001, d = .35$ . Therefore, within each sexual orientation category, women regretted casual sex actions more than did men. Overall, across sexual orientation groups, more women (46 %) than men (23 %) regretted their most recent experience of casual sex,  $\chi^2(2, N = 13,814) = 1060, p < .001, d = .58$ . In sum, consistent with Hypothesis 1, there was a substantial sex difference in the degree of casual sex action regret.

#### Casual Sex Inaction Regrets

Heterosexual men regretted casual sex inactions more than did heterosexual women (male  $M = 1.20, SD = 1.07$  vs. female  $M = .57, SD = .82$ ),  $t(14133) = 38.60, p < .001, d = .73$ . This was also true to a lesser extent for gay men in comparison to lesbian women (male  $M = 1.13, SD = 1.01$  vs. female  $M = .78, SD = .92$ ),  $t(399) = 3.23, p < .001, d = .36$ , and to a similar extent (in terms of effect size) for bisexual men in comparison to bisexual women (male  $M = 1.54, SD = 1.06$  vs. female  $M = .89, SD = .99$ ),  $t(644) = 8.03, p < .001, d = .63$ . Thus, within each sexual orientation category, men regretted casual sex inactions more than did women. Overall, across all sexual orientation groups, fewer women (16 %) than men (43 %) regretted their most recent experience of passing up casual sex,  $\chi^2(2, N = 15,182) = 1397, p < .001, d = .64$ . Consistent with Hypothesis 2, there was a substantial sex difference in the degree of casual sex inaction regret.

Overall, in this large and diverse sample of adults, the patterns of sex differences replicated Studies 1 and 2 and replicated across sexual orientations as well, although the sex difference was sometimes smaller among non-heterosexual participants. Compared to each of the three groups of men, each of the three groups of women reported higher sexual action regret and lower sexual inaction regret. Nevertheless, sexual orientation did predict the magnitude of the regrets: lesbian and bisexual women had lower casual sex action regrets and higher casual sex inaction regrets compared to heterosexual women. It is

possible that these differences by sexual orientation may result from the fact that the reproductive and social consequences differ between sexual encounters with other women versus with men, as we discuss below.

## General Discussion

The three studies revealed that regrets concerning sexual actions and inactions were common for both men and women, but we found striking sex differences in the types of sexual experiences that led to regrets. Consistent with the first hypothesis, women reported more numerous and more intensely felt sexual action regrets than men did, particularly regrets involving “casual” sex. Consistent with the second hypothesis, men reported more numerous and stronger sexual inaction regrets than women did, particularly regrets involving failure to engage in casual sex or the pursuit of a relationship that delayed sexual activity or precluded better sexual opportunities. It is noteworthy that we did not find marked sex differences in other regrets, including romantic nonsexual regrets (Study 1) and various other regrets (Study 2). Likewise, the extant literature on regret has not found sex differences in regretting actions and inactions in general (Gilovich & Medvec, 1994; Landman, 1987). Therefore, regret concerning sexual actions and inactions in the context of casual sex appears to be a special case in which there are marked sex differences in regret, supporting the two central evolutionary psychological hypotheses advanced.

## Strengths and Limitations

This project had notable strengths. First, we found converging evidence of robust sex differences in regretting sexual actions and inactions, whether the regrets were anticipated or recalled. Second, in addition to examining theoretically relevant sexual regrets, we also relied on qualitative reports of past regrets that were generated by participants. These free responses resulted in an extensive list of sexual regrets. Study 2 was, therefore, the most detailed study yet of sexual regret, and it further reinforced the specificity of sex differences in regret. Specifically, we found that sex differences were most robust in the domain of casual sex. Third, in Study 3, we recruited a sizeable sample of participants who were diverse in terms of age, sexual orientation, and educational status. In addition, in this last study, we were able to establish that sex differences in regrets concerning casual sex were not merely explained by sex differences in the base rates of occurrence of casual sex or by the sex of people’s sexual partners.

This project also had several limitations that should be addressed by future research. First, we relied on people’s reports of their current regrets in response to specific prompts, which could differ from how people felt just after a decision

occurred or may bring to mind regrets that would not otherwise become activated in daily life. This limitation could be addressed via experience sampling methodology to assess regrets in the contexts in which they emerge in people’s daily lives. Second, in Studies 2 and 3, we relied on volunteers who completed Internet surveys, which offer few controls over the testing conditions. The advantage of these studies, however, is that Internet research enables the participation of people from a broad range of backgrounds and geographic locations (Gosling, Vazire, Srivastava, & John, 2004). Further, the privacy and anonymity provided by the Internet may have encouraged a wider range of people to participate and provide honest answers to sensitive questions related to past sexual behavior and sexual orientation.

## Explanations for Sex Differences

Our primary hypotheses involved distal causes occurring over evolutionary time that were produced by biological reproductive differences between women and men and the psychological adaptations modern women and men currently possess as a result of those causes. Women, according to Hypothesis 1, evolved to regret mistaken sexual actions, which helped them avoid reproductive costs. Men, according to Hypothesis 2, evolved to regret mistaken sexual inactions, which helped them avoid missing reproductive opportunities. These hypotheses almost certainly do not exhaust the many distal forces affecting the evolved psychology of regret. Humans are likely to also possess evolved sensitivities to mistakes involving the welfare of their children, lapses in status, and the loss of resources. It is possible that some of these are sex differentiated. This is a fruitful area for further theoretical development in the psychology of regret.

In addition, there are likely social factors that might moderate or exacerbate evolved dispositions in each sex to regret certain sexual experiences. For example, women in the modern world are consciously aware of the risk of pregnancy as a result of having sex, which could lead women to worry about casual sex experiences and regret them more than do men. Another possible factor is that, whereas casual sex will typically be physically gratifying for men, many men and women might lack knowledge of how to make the experience as gratifying for women (e.g., producing orgasm) (Wade, Kremer, & Brown, 2005) and may not consider it important as part of a sexual encounter. This could contribute to a less favorable casual sex experience for women than for men (Armstrong, England, & Fogarty, 2010), also feeding into sex differences in sexual regret.

The finding in Study 3 that lesbian and bisexual women regretted casual sex actions less and regretted inactions more than did heterosexual women is consistent with at least two of these factors affecting regret: women who have sex with women do not worry about pregnancy and women who have



## Sexual Action Scenario (Male Version)

Please read the following statements and answer *each corresponding question accordingly*.

William went to a dance club with some of his friends on a Saturday night. While there he met an extremely attractive and sexy woman named Linda. She had thick and beautiful hair, a gorgeous face, and was wearing very fashionable clothes. William wasn't the only man there interested in her. It seemed as though men throughout the club were admiring her.

After talking a bit and enjoying each other's company, William left the club with Linda and went back to his place. Once they arrived, they quickly began to passionately kiss and later had sex. The next morning William awoke feeling uncomfortable. The sex with Linda was disappointing and he felt awkward about having sex with someone he did not know very well. William dropped Linda off at her place. They never saw each other again.

Please complete each of the following statements using the scale below.

1-----2-----3-----4-----5-----6-----7-----8-----9  
 Very Little Moderate Extreme  
 Regret Regret Regret

- How much regret do you think William feels over his decision to have sex with Linda?  
\_\_\_\_\_.
- Imagine you are William.* How much regret would you feel over your decision to have sex with Linda? \_\_\_\_\_.

## Appendix 2 Complete list of regrets from Study 2

Type	Regret	Women %	Men %	$\chi^2$	<i>p</i>	<i>d</i>
Action	Engaging in a sexual activity with someone other than my partner while I was in a relationship...	37	35	<1	ns	.03
Action	...because my partner found out and I felt bad	9	10	<1	ns	.01
Action	...because my partner found out and it hurt or ruined our relationship	8	11	1.32	ns	.12
Action	...simply because I felt bad, even though my partner hadn't found out	28	27	<1	ns	.02
Action	...for some other reason	7	3	2.28	ns	.15
Action	Engaging in a sexual activity with a friend...	28	22	1.33	ns	.12
Action	...because it negatively affected our friendship	22	19	<1	ns	.07
Action	...for some other reason	10	6	2.25	ns	.15
Action	Engaging in a sexual activity with a coworker...	22	29	2.56	ns	.16
Action	...because it made things awkward between us	16	20	1.03	ns	.10
Action	...because it had negative professional consequences	8	10	<1	ns	.08
Action	...for some other reason	5	5	<1	ns	.00
Action	Going "too fast" or engaging in too much sexual activity with my (past or present) relationship partner...	<b>43</b>	26	11.0	.001	.34
Action	...because it negatively affected our relationship	<b>26</b>	16	5.40	.03	.24
Action	...because it violated my morals or religious convictions	<b>16</b>	8	5.27	.03	.23
Action	...for some other reason	<b>16</b>	6	9.2	.002	.31
Action	Engaging in a sexual activity with someone only because I was trying to "get back" at an ex-partner	<b>21</b>	10	8.24	.005	.29
Action	Engaging in a sexual activity with an ex-partner	22	15	3.01	ns	.17
Action	Engaging in a sexual activity with someone who had a long-term partner at the time (i.e., that person was cheating and I was their affair partner)	27	19	2.97	ns	.17

## Appendix 2 continued

Type	Regret	Women %	Men %	$\chi^2$	<i>p</i>	<i>d</i>
Action	Engaging in a sexual activity that damaged my reputation in the eyes of another potential partner whom I was really interested in	21	19	<1	ns	.05
Action	Engaging in a sexual activity with a friend's partner or with someone my friend was interested in	12	10	<1	ns	.08
Action	Being paid to engage in a sexual activity with someone	9	9	<1	ns	.01
Action	Paying someone to engage in a sexual activity with me	2	9	9.76	.003	.32
Action	Engaging in a sexual activity with someone only because my friends put pressure on me	7	3	2.28	ns	.15
Action	Engaging in a sexual activity with someone who I barely knew	36	20	8.89	.003	.33
Action	Engaging in a sexual activity with someone who turned out to be bad in bed	35	22	6.17	.01	.28
Action	Engaging in a sexual activity with someone I really disliked	16	15	<1	ns	.00
Action	Engaging in a sexual activity with someone I <u>did not</u> find attractive	37	40	<1	ns	.05
Action	Engaging in a sexual activity with someone, because it made me feel promiscuous or "dirty"	33	9	30.4	<.001	.56
Action	Engaging in a sexual activity with someone, because it caused my family to be ashamed or disappointed in me	9	10	<1	ns	.03
Action	Engaging in a sexual activity with someone, because it violated my morals or religious convictions	24	15	4.85	.03	.22
Action	Engaging in a sexual activity with someone, because it damaged my reputation with my friends	13	8	1.73	ns	.13
Action	Engaging in a sexual activity before marriage	16	6	7.41	.007	.28
Action	Engaging in a sexual activity in public	5	0	7.39	.004	.28
Action	Having a one-night stand	34	15	16.6	<.001	.42
Action	Engaging in a sexual activity with someone who led me to believe he/she was interested in a relationship but really just wanted to have sex	37	15	22.8	<.001	.49
Action	Losing my virginity to the wrong person	41	18	23.1	<.001	.50
Action	Losing my virginity when I was too young	27	4	34.9	<.001	.62
Action	Engaging in a sexual activity that gave me an STD (sexually transmitted disease) or made me worry that I had gotten an STD	27	21	1.85	ns	.14
Action	Engaging in a sexual activity that gave my partner an STD (sexually transmitted disease) or made me worry that I gave my partner an STD	5	10	2.50	ns	.16
Action	Engaging in a sexual activity that got me pregnant or made me worry that I had become pregnant	35	–	–	–	–
Action	Engaging in a sexual activity that got my partner pregnant or made me worry that I had gotten my partner pregnant	–	27	–	–	–
Action	Engaging in a sexual activity with multiple partners at the same time	8	11	<1	ns	.08
Inaction	Not engaging in a sexual activity with someone other than my dating partner or spouse while I was in a relationship...	8	26	26.1	<.001	.53
Inaction	...because my relationship partner was not very physically attractive	1	1	<1	ns	.00
Inaction	...because my relationship partner was not good in bed	2	5	2.76	ns	.17
Inaction	...because my relationship partner had already slept with someone else	1	7	9.28	.004	.31
Inaction	...because the person I could have had sex with was attractive	3	16	19.8	<.001	.46
Inaction	...because I was not happy in my relationship overall and this would have been a way out of it	3	6	2.04	ns	.14
Inaction	...for some other reason	3	5	1.16	ns	.11
Inaction	Not engaging in a sexual activity with someone who spent a lot of effort trying to attract me...	15	35	22.8	<.001	.49
Inaction	...because I feel that I "led him/her on"	7	14	4.38	.05	.21

## Appendix 2 continued

Type	Regret	Women %	Men %	$\chi^2$	<i>p</i>	<i>d</i>
Inaction	...because it hurt their feelings	8	14	3.84	ns	.20
Inaction	...for some other reason	5	<b>14</b>	11.1	.001	.34
Inaction	Going “too slowly” or not engaging in enough sexual activity with my (past or present) relationship partner...	20	<b>36</b>	12.9	<.001	.37
Inaction	...because I wanted to engage in more sexual activity	8	<b>24</b>	18.0	<.001	.44
Inaction	...because my partner wanted to engage in more sexual activity	7	10	1.61	ns	.13
Inaction	...because it negatively affected our relationship	8	<b>16</b>	7.02	.01	.27
Inaction	...for some other reason	4	4	<1	ns	.00
Inaction	Not engaging in a sexual activity with someone who had high social status	4	<b>11</b>	6.68	.01	.26
Inaction	Not engaging in a sexual activity with an attractive person	9	<b>37</b>	44.1	<.001	.71
Inaction	Not engaging in a sexual activity with someone only because I did not want to appear promiscuous	<b>16</b>	8	6.25	.01	.25
Inaction	Not engaging in a sexual activity with someone who would have been good in bed	8	<b>25</b>	21.9	<.001	.48
Inaction	Not engaging in a sexual activity with someone who could have been a good long-term relationship partner	11	<b>24</b>	13.6	<.001	.38
Inaction	Not engaging in a sexual activity with someone only because my friends put pressure on me not to do it	2	6	3.73	ns	.19
Inaction	Not engaging in a sexual activity with someone, because doing so would have enhanced my reputation with my friends	0	<b>3</b>	4.90	.04	.22
Inaction	Not engaging in a sexual activity before marriage	2	6	3.73	ns	.19
Inaction	Passing up sexual opportunities by staying in a bad or mediocre relationship	21	<b>30</b>	4.32	.04	.21
Inaction	Not indicating my sexual attraction to a particular person because I was too shy or nervous	30	<b>55</b>	24.6	<.001	.51
Inaction	Not engaging in a sexual activity because I was nervous about how good I would be in bed	14	<b>27</b>	9.79	.003	.32
Inaction	Not losing my virginity to a partner I really liked	18	13	1.61	ns	.13
Inaction	Not losing my virginity early enough	6	<b>26</b>	31.0	<.001	.58
Inaction	Not experimenting more sexually when I had the opportunity	21	<b>47</b>	29.5	<.001	.57
Inaction	Not being more sexually adventurous when I was young	18	<b>48</b>	42.1	<.001	.69
Inaction	Not being more sexually adventurous when I was single	17	<b>42</b>	31.4	<.001	.59
Inaction	Passing up on an opportunity to engage in a sexual activity with multiple partners at the same time	8	<b>26</b>	26.1	<.001	.53
Neither	Not calling a person in the next few days after we engaged in a sexual activity...	11	<b>24</b>	13.6	<.001	.39
Neither	...because I felt bad about it later	5	<b>12</b>	5.71	.02	.24
Neither	...because it hurt their feelings	4	<b>17</b>	20.9	<.001	.47
Neither	...for some other reason	2	3	<1	ns	.07
Neither	Masturbating...	11	<b>26</b>	17.0	<.001	.42
Neither	...because I did it too much	2	<b>20</b>	36.0	<.001	.63
Neither	...because I got caught doing it	0	<b>5</b>	9.40	.003	.31
Neither	...because I felt bad or dirty about it afterwards	10	10	<1	ns	.01
Neither	...for some other reason	2	<b>6</b>	4.97	.04	.23
Neither	Watching pornography...	13	<b>33</b>	22.3	<.001	.49
Neither	...because I did it too much	3	<b>21</b>	30.6	<.001	.58
Neither	...because I got caught doing it	0	<b>6</b>	11.0	.001	.34
Neither	...because I felt bad or dirty about it afterwards	10	11	<1	ns	.04
Neither	...because it caused relationship problems later on	1	<b>8</b>	14.5	<.001	.39

## Appendix 2 continued

Type	Regret	Women %	Men %	$\chi^2$	<i>p</i>	<i>d</i>
Neither	...because it negatively affected my sexual functioning later on	2	<b>14</b>	21.4	<.001	.48
Neither	...for some other reason	3	5	1.16	ns	.11
Neither	Leading someone to believe that I was interested in a relationship with him/her when I really just wanted to have sex	10	<b>28</b>	23.1	<.001	.50
Neither	Leading someone to believe that I was interested in having sex with him/her when I really wasn't	<b>23</b>	14	5.18	.03	.23
Neither	Investing too much effort trying to attract someone who never had sex with me	18	<b>36</b>	16.1	<.001	.41
Neither	Breaking up with someone who was a good lover	12	17	1.62	ns	.13
Neither	Having a homosexual (same-sex) sexual experience	4	8	3.74	ns	.19
Neither	Not having a homosexual (same-sex) sexual experience	<b>12</b>	5	6.11	.02	.25

*Note.* Bolded percentages indicate sex differences. For regrets with subcategories, participants were instructed to check off all of the subcategories that applied to their regret. Therefore, the subcategory percentages often add up to a higher total than the main categories. So as not to duplicate the counts, the main categories were omitted when calculating both the number of different types of regrets in the list as well as the total number of action and inaction regrets for each individual

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