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Despite the increase in the scientific study of morality over the past decade, one important domain remains relatively underexplored—sexual morality. The current article begins to fill this gap by exploring its multidimensionality and testing several evolution-based hypotheses about sex differences in moralizing distinct components of sexual morality, including incest, sexual coercion, sexual infidelity, and short-term mating. Study 1 ($N = 920$) and Study 2 ($N = 543$) tested predictions derived from evolutionary psychological hypotheses and used factor analysis to identify seven core factors of sexual morality separately for male and female actors: *infidelity*, *short-term sex*, *sexual coercion*, *outgroup sex*, *long-term mating*, *same-sex sexuality*, and *paraphilic sex*. Study 3 ($N = 380$) provided an independent test of the evolution-based hypotheses and factor structure. Results strongly support sex-differentiated predictions about short-term sex, but not sexual coercion or incest (possibly owing to ceiling effects). Discussion centers around sexual morality as a complex domain not readily explained by more domain-general theories of morality and the necessity of comprehensive theories of morality to include sex-differentiated components in their formulations.

Public Significance Statement
The current article explores the multidimensionality of sexual morality, and tests evolution-based hypotheses about similarities and differences between men and women in their moral judgments of sexual behaviors. Across three studies, results revealed that sexual morality coalesces around 7 partially distinct, but not mutually exclusive factors: *infidelity*, *short-term sex*, *sexual coercion*, *outgroup sex*, *long-term mating*, *same-sex sexuality*, and *paraphilic sex*. Results support sex-differentiated predictions about short-term sex (more negatively moralized for women than for men), provide mixed results for sex-differentiated predictions toward infidelity, and do not support sex-differentiated predictions about sexual coercion or incest (possibly owing to clear ceiling effects on moralization of these clusters). Discussion centers around the utility of viewing sexual morality as a multidimensional psychological construct and suggests that theories of morality need to include sex-differentiated components in their formulations.

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Morality is a universal feature of human social life. No known peoples or cultures lack standards of morality (Brown, 1991). Moral standards, or prescriptive and proscriptive norms about right and wrong, specify behaviors that people should or should not engage in (Janoff-Bulman et al., 2009). These moral standards are hypothesized to serve at least two critical functions (Buss & Asao, 2014). First, internal moral standards provide a guide to people's conduct, influencing individuals to act in ways that accord with their principles and to avoid

acting in ways that violate their principles (Mazar et al., 2008; Sperber & Baumard, 2012). If one believes that it is immoral to cheat a business partner, for example, holding this value might deter cheating when the temptation arises. Second, socially imposed standards of morality may influence or constrain the behavior of others and act as evolved defenses against exploitation by others within one's social group (e.g., Petersen, 2013). People reward others who adhere to locally agreed upon principles of conduct and punish those who violate them (Algoe & Haidt, 2009; Tooby et al., 2006). Because of its universality and importance for individual and social behavior, there has been much scientific attention dedicated to the topic of morality over the past two decades.

Some theorists have argued that morality evolved to solve adaptive problems of cooperation and social coordination (Cosmides et al., 2019; Curry et al., 2019). Other researchers have focused on the philosophical and religious principles underlying morality (e.g., Gray & Wegner, 2009; McKay & Whitehouse, 2015). For example, McKay and Whitehouse (2015) argue that religion is a prerequisite for morality while others argue that morality exists in our evolved psychology, independent of religion or in the absence of religion (e.g., Gervais & Najle, 2018). Last, researchers have investigated the role of emotions in moral judgments, discovering that emotions such as moral disgust, rather than consciously principled calculations, sometimes drive moral judgments (e.g., Tybur et al., 2009). Despite these important developments, there is one domain of morality that has remained relatively underexplored—sexual morality, or judgments of approbation or condemnation of sexual conduct (Asao & Buss, 2016).

A Missing Link: The Study of Sexual Morality

Sexual behavior is a domain of human conduct that appears to be universally moralized (Weeden & Kurzban, 2013). In every known society there exist moral rules governing the sexual domain. Wherever there are written laws, they contain regulations about who can and cannot have sex with whom and who can and cannot marry whom. In the United States, for example, laws prohibit marriage between close genetic relatives and sexual intercourse with individuals below certain ages (ranging from 14 to 18, depending on the state; Office of the

Assistant Secretary for Planning and Evaluation, 2000). Around the world, as of the year 2020; there are currently 69 countries—including Somalia, Nigeria, Yemen, and Saudi Arabia—in which same-sex sexual behavior is a criminal offense (The International Lesbian, Gay, Bisexual, Trans and Intersex Association, 2020). Legal codes around the globe, in short, invariably contain clauses regulating sexual conduct. Although there appears to be a universal tendency to moralize sexual behavior, the empirical study of sexual morality has been sparse.

Researchers who have investigated sexual morality have examined moral prohibitions surrounding incest (e.g., Lieberman & Smith, 2012), individual differences in judgments surrounding same-sex sexual behavior (e.g., Pinsof & Haselton, 2016), the association between religious commitment and reproductive strategies (e.g., Hone et al., 2021), the association between disgust and moral judgments of sexual behaviors (e.g., Wang et al., 2019), similarities in sexual morality across cultures (e.g., White et al., 2020), and attitudes toward recreational drug use based on reproductive strategies (e.g., Kurzban et al., 2010). For example, Weeden and Kurzban (2013) and Hone et al. (2021) found that religious individuals provided harsher moral judgments toward atypical sexual behaviors (e.g., same-sex sexual behavior) than less-religious people.

These studies, although making important advances, assess attitudes toward a limited set of sexual behaviors in isolation, often relying on indices such as the World Values Survey (e.g., Weeden & Kurzban, 2013; White et al., 2020). As a result, previous research does not cover the full range of adaptive problems that individuals may face within the realm of sexuality. Investigating a more comprehensive set of moral judgments toward sexual behaviors will allow researchers to (a) better understand the conceptual space of sexual morality; (b) identify important cultural and individual differences in sexual morality such as sex differences; and (c) understand the ways in which humans might have evolved adaptations specifically for more granular components of sexual morality. Thus, one goal of the current article was to map the conceptual domain space of sexual morality by sampling across a wide variety of sexual behaviors and conducting a Principal Components Analysis (PCA) to identify specific domains.

Another goal was to investigate each identified domain with greater granularity, testing specific hypotheses derived from evolutionary psychology

and biology. Human psychology is at least somewhat domain-specific or intrinsically tied to the *content* of human conduct (Barrett & Kurzban, 2006), from face perception (Kanwisher, 2000) to self-esteem (Kirkpatrick et al., 2002). We hypothesize that in few domains is this more true than in the sexual sphere. There are multiple distinct adaptive problems within the realm of sex (e.g., competition for mates; incest avoidance; partner retention; sexual coercion avoidance) that would have been partially solved by a moral psychology designed to influence one's own and other people's sexual behaviors. Furthermore, there are good theoretical reasons to hypothesize that some sexual behaviors are more or less costly for men and for women in the currency of reproductive fitness. Thus, the specifics of sexual morality that guide human behavior may differ by sex.

Evolutionary Hypotheses About Sexual Morality

Because differential reproductive success is the primary engine of evolution by selection, humans may have evolved adaptations that not only guide their own sexual behavior, but that also function to interfere with the sexual behavior of others (Symons, 1979). One suite of hypothesized adaptations centers on sexual morality. Perhaps the most obvious subdomain centers on *incest* (e.g., Lieberman & Patrick, in press). Others include sex*ual coercion*, which inflicts harm in the form of bypassing preferential mate choice; *sexual infidelity*, which can harm committed partners; and *casual sex or short-term mating*, which can interfere with group members who are pursuing a long-term mating strategy (Buss, 2016). Below we outline several hypotheses about these subdomains of sexual morality.

Incest

Sexual intercourse with close genetic relatives is an adaptive problem in mating because it increases the chances that offspring will inherit deleterious recessive alleles, thus lowering the reproductive success of both parents (Asao, in press). Studies in evolutionary biology have documented the negative fitness consequences of inbreeding (e.g., Charlesworth & Charlesworth, 1987; Crnokrak & Roff, 1999), and evolutionary psychologists have found compelling

evidence of incest avoidance mechanisms in humans (Fessler & Navarrete, 2004; Lieberman et al., 2007; Westermarck, 1981). Therefore, we hypothesized that (a) incest would be moralized negatively by both men and women for both male and female actors. Furthermore, we hypothesized that (b) incest would be judged to be *more* morally wrong for female actors than for male actors because of the greater potential costs women face (e.g., pregnancy, childbirth) after sex with a suboptimal partner (Trivers, 1972). Although incest is costly for men and women in terms of reproductive success, men do not bear the additional costs associated with internal gestation if conception occurs. Our moral psychology is hypothesized to track the relative costs of different sexual behaviors and condemn those that are more damaging to fitness.

Sexual Coercion

Sexual coercion is an exploitative mating behavior that is found across animal taxa and has likely been a recurrent problem faced by humans (Buss, 2021; McKibbin & Shackelford, 2011; Thornhill & Palmer, 2001). Researchers have begun to investigate counteradaptations in victims that are designed to minimize the negative fitness costs of sexual coercion, such as vaginal morphology to prevent forced insemination in ducks (Brennan et al., 2007) and psychological antirape adaptations in women (Bröder & Hohmann, 2003; Buss, 2021; McKibbin & Shackelford, 2011; Prokop, 2013). In humans, sexual coercion is a traumatic event that inflicts heavy psychological, physical, emotional, and social costs on victims (Apostolou, 2013; Burgess & Holmstrom, 1974; Perilloux et al., 2012; Resick, 1993). Moral condemnation of sexual coercion is one potential adaptive solution to the problem of rape. Therefore, we hypothesized that (c) sexual coercion would be heavily morally condemned by both men and women. Furthermore, we hypothesized that (d) sexual coercion would be *more* strongly morally condemned when perpetrated by male actors than by female actors, since rape of women by men is statistically more common than the reverse pattern (one in five women and one in 71 men; Basile et al., 2011) and rape inflicts greater harm in evolutionary currencies on women than on men (e.g., Perilloux et al., 2012). Additionally, sexual assault of a woman bypasses female choice, a fundamental process of sexual

selection documented in thousands of sexually reproducing species (e.g., Andersson, 1994).

Infidelity

Sexual infidelity by one's partner is another adaptive problem that humans have recurrently faced (Asao, in press; Buss, 2000). Infidelity is well documented among many socially monogamous species (e.g., Griffith et al., 2002; Peters et al., 2001). Infidelity is costly in terms of reproductive fitness for men and women because of the increased risk of dissolution of a valued romantic relationship and the costs associated with losing valuable reproductive resources to a rival. Thus, we hypothesized that (e) infidelity should be morally condemned by both men and women when judging both male and female actors. However, the costs of infidelity are not identical for men and women. Because of internal gestation, women are certain of their genetic relationship to their children, whereas men do not have direct evidence of genetic relatedness (Daly et al., 1982). This paternity uncertainty increases the potential costs associated with infidelity for men, because a man can be cuckolded into raising a child that he did not sire. Research on sexual jealousy has found consistent sex differences in which men are more upset by sexual infidelity in their partners while women are more upset by emotional affairs (Bendixen et al., 2015; Buss et al., 1992, 1999). Therefore, we hypothesized that (f) a purely sexual infidelity without emotional involvement would be *more* morally condemned in female actors by men than in male actors by men owing to paternity uncertainty.

Short-Term Mating

Casual or uncommitted sex is one category of mating strategies that people can implement. Because the potential costs of indiscriminate sex (e.g., pregnancy, childbirth) are higher on average for women than for men, and the reproductive benefits are greater for men than for women, research has consistently found large sex differences in willingness to pursue a short-term mating strategy (e.g., Baranowski & Hecht, 2015; Bendixen et al., 2017; Buss & Schmitt, 1993; Clark & Hatfield, 1989; Schmitt, 2005). Studies have also found a sexual double standard, such that engaging in casual sex harms women's future mate value and social reputation more than men's (Buss, 1989, 2021), but this effect may be changing over time (Stewart-Williams et al., 2017). On balance of evidence,

we hypothesized that (g) short-term sex would be more negatively moralized for female actors than for male actors by men and women.

Because individuals are in competition with others over mates, other people's mating strategies can interfere with one's own sexual behaviors. From the perspective of a woman looking to pursue a long-term partnership, other women who engage in short-term mating increase the intensity of intrasexual mate competition. Men often become reluctant to commit to a long-term mate to the degree that there exist women in the mating market willing to engage in uncommitted sex, thus creating "strategic interference" (Buss, 1989). Because most women pursue a long-term mating strategy most of the time, we hypothesized a sex difference in the moral judgements of men and women participants such that (h) women more than men would morally condemn short-term mating for both male and female actors.

Recent research suggests that individual differences in mating strategy play a role in sexual double standards about casual sex (Stewart-Williams et al., 2017). There exist large individual differences in the degree to which people dispositionally pursue a short-term or long-term mating strategy (i.e., sociosexual orientation; Penke & Asendorpf, 2008), allowing us to make even more nuanced predictions about condemnation of casual sex. People who are more oriented toward a short-term mating strategy could increase their sexual opportunities if they changed the social norms surrounding casual sex. We therefore hypothesize that (i) individuals who dispositionally pursue a short-term mating strategy will condemn casual sex less than those who dispositionally pursue a long-term mating strategy— a specific prediction about individual differences in sexual morality that we test in Study 3.

Conclusions

We have outlined several predictions derived from evolutionary psychology and biology for four domains of sexual morality: incest, sexual coercion, infidelity, and short-term mating. These domains were generated by reviewing the relevant adaptive problems within the realm of sex that could be partially solved by an evolved moral psychology. For other types of sexual behavior, for example samesex sexual behavior, we did not have strong a priori predictions about the strength of moral convictions, universality of moralization, or sex differences. We have therefore not included these sexual behaviors

in the evolutionary hypotheses above but will discuss findings concerning them below. Additionally, there were some domains of moralized sexual behavior that we did not anticipate prior to conducting our studies. Instead of limiting our investigation of sexual morality to what we deemed conceptually relevant a priori, we began our investigation using an act nomination procedure to gain a more diverse and comprehensive set of sexual domains to explore.

Preliminary Study: Nominating Moralized Sexual Actions

We initially created a list of items that correspond to each of the four subdomains of sexual morality for which we had specific predictions. Sample items included having sex with one's parent (incest); physically forcing someone to have sex against their will (sexual coercion); while involved in a steady relationship, having a sexual affair with someone else (infidelity); and having a one-time sexual encounter without commitment (short-term sex).

To supplement these hypothesis-based items, we used an act nomination procedure to identify the sample space of sexual acts that might become targets of moralizing, a procedure that has been used in the past to capture domains of personality dispositions (Buss & Craik, 1983) evolution-based constructs such as acts of mate retention (Buss, 1988), dimensions of sexual disgust (Crosby et al., 2020), and the many reasons people cite for why they have sex (e.g., Meston et al., 2019).

Method

Participants

Participants (161; 76 women) were recruited from Amazon's Mechanical Turk and ranged in age from 20 to 72 ($M = 39.80$; $SD = 12.30$). Location was limited to the United States. All participants provided informed consent before participation began and were compensated \$.15 for their participation in the 10-minute survey. All procedures were approved by our institution's IRB.

Act Nominations

Each participant was asked to provide their age and biological sex, and then was asked to nominate acts across four conditions: (a) list at least five acts that men might perform within the sexual realm that they considered to be morally bad; (b) list at least five acts that men might perform within the sexual realm that they considered to be morally good; (c) list at least five acts that women might perform within the sexual realm that they considered to be morally bad; (d) list at least five acts that women might perform within the sexual realm that they considered to be morally good. The order of the conditions was randomized.

Results and Discussion

Two researchers independently examined the nominations and compiled the items that were not conceptually redundant into a list of 44 unique items. These items were then added to the initial list of items generated from evolutionary theorizing. This resulted in a total of 70 initial acts.

Study 1: Tests of Evolutionary Hypotheses and Identifying the Multidimensional Space of Sexual Morality

The key goals of Study 1 were (a) to test predictions from the evolution-based hypotheses described in the Introduction and (b) to examine the underlying structure of sexual morality using factor analytic techniques.

Method

Participants

Participants ($N = 920$; 564 women) were recruited from Amazon's Mechanical Turk to participate in a study on judgments of events and behaviors. Participants ranged in age from 18 to 87 ($M = 40.80$; $SD = 13.30$). Location was limited to the United States. Participants were compensated \$.25 for their participation in the 15-minute survey. All procedures were approved by our institution's IRB.

Materials and Procedure

After providing informed consent, participants were asked to provide their personal moral judgments of the 70 sexual behaviors separately for male and female actors using a scale ranging from -3 (extremely morally bad) to $+3$ (extremely morally good; see Appendix for instructions). This scale was chosen to allow for the capturing of both positive and negative impacts of each act on morality.

After completing the moral judgments, participants filled out a brief demographic questionnaire providing their age, biological sex, religiosity, political orientation, and sexual orientation. Participants were then debriefed, compensated, and thanked for their participation.

Results and Discussion

Factor Analysis of Sexual Morality Judgments

To identify how the judgments of the 70 items generated from the act nomination procedure best coalesced together, we performed a PCA using promax rotation separately for judgments of male and female actors. We ran PCA analyses separately for male and female actors because we did not want to assume that individuals moralize behavior equally for male and female actors, and because we did not want to miss out on any potential nuances in moral judgments of sexual behavior. All analyses were conducted in R (R Core Team, 2019) with the lavaan package (Rosseel, 2012).

Factor Structure for Judgments of Male Actors' Sexual Behavior

A scree plot and an examination of eigen values indicated a seven-factor solution best fit the data after removing items that did not load at .50 or higher on one of the factors. Our final factor solution consisted of 35/70 items and seven factors, with the factors accounting for 64.40% of the total variance (see Table 1 for final items and factor loadings). We chose to use .50 as a cutoff threshold because we wanted to ensure that the items were highly consistent with the individual factors, and because we wanted to reduce the items down to as few as possible while still ensuring the adequate coverage of the sample space (see Hair et al., 1998 for discussion of cutoff thresholds). We labeled the seven factors according to the content of the items that loaded on them: (a) infidelity (α = .89), (b) short-term sex (α = .88), (c) sexual coercion (α = .87), (d) outgroup sex (α = .81), (e) long-term mating (α = .77), (f) same-sex sexuality (α = .92), and (g) paraphilic sex (α = .78). A Bartlett's test of sphericity indicated sufficient collinearity to run the factor analysis, $\chi^2(595) = 17,471, p < .001$.

Factor Structure for Judgments of Female Actors' Sexual Behavior

A scree plot and an examination of eigen values indicated that a seven-factor solution best fit the data after removing items that did not load at .50 or higher on at least one factor. A final factor solution of seven proved optimal, accounting for 64.10% of the total variance. We used the same cutoff thresholds that were used for judgments of male sexual behavior. There were 35/70 items that passed the quantitative and theory-driven criteria for inclusion (see Table 2 for the final items and factor loadings). We labeled the seven factors of according to the content of the items that loaded on them: (a) infidelity (α = .89), (b) short-term sex (α = .87), (c) sexual coercion (α = .87), (d) outgroup sex (α = .82), (e) long-term mating (α = .77), (f) same-sex sexuality (α = .91), and (g) paraphilic sex (α = .78). A Bartlett's test of sphericity indicated sufficient collinearity to run the factor analysis, $\chi^2(595) = 17,319, p < .001$.

Tests of Evolution-Based Predictions

Prior to analyses, we coded biological sex as a factor (sex going forward) and created separate factor scores for each factor by actor sex (e.g., sexual coercion for male actors; sexual coercion for female actors). We next conducted a series of t-tests and analysis of covariance (ANCOVA) tests to examine sex-differences among factors (e.g., male actors vs. female actors on the Incest subfactor) as well as the effect of participant sex on judgments of male and female actors after controlling for participant age. All reported ANCOVA results are after conducting post hoc analyses with Bonferroni corrections.

Incest. Female actors ($M = -2.33, SD = .92$) were not judged more harshly on the incest subfactor than male actors ($M = -2.32, SD = .92; t(919) = 1.71, p = .087$; Cohen's $d = .06$) by all participants. These results did not support our predictions but can possibly be attributed to ceiling effects because incestual sex was among the most morally condemned of all acts. Male participants had slightly higher variance than female participants in their judgment of the incest factor toward male and female actors (see Table 3 for factor-level results by participant and actor sex).

ANCOVAs revealed that female participants ($M = -2.45$) judged male actors more harshly for engaging in the incest factor than male participants did ($M = -2.12$), $F(1, 917) = 28.55, p < .001$. Additionally, female participants ($M = -2.13$) judged female actors more harshly for engaging in the incest factor than male participants did ($M = -2.47$), $F(1, 917) = 31.08, p < .001$. This

Table 1

Factor Loadings for Study 1's Moral Judgments of Male Actors

Items	Infidelity	Short-term sex	Sexual coercion	Outgroup sex	Long-term mating	Same-sex sexuality	Paraphilic sex
1. Having an ongoing emotional affair with someone who is already in a steady relationship with someone else	0.94						
2. While involved in a steady relationship, having an emotional affair with someone else	0.91						
3. While involved in a steady relationship, having a sexual affair with someone else	0.84						
4. Having an ongoing sexual affair with someone who is already in a steady relationship with someone else	0.83						
5. Having a brief sexual encounter with a married person when their spouse is out of town	0.70						
6. Having sex with a friend's romantic partner	0.68						
7. Paying someone money to have sex with them		0.86					
8. Having sex with someone because they offered to pay money		0.82					
9. Having a one-time sexual encounter without commitment		0.76					
10. Having a reputation as an easily accessible sexual partner		0.74					
11. Having sex with someone without being in love with them		0.73					
12. Watching pornography		0.60					
13. Drugging a person to have sex with them			0.91				
14. Physically forcing someone to have sex against their will			0.86				
15. Having sex with someone who is mentally disabled so they cannot give consent			0.85				
16. Having sex with someone who is too intoxicated to know what is going on			0.70				
17. Verbally pressuring someone into having sex against their will			0.55				
18. Marrying someone from a very different social class				0.83			
19. Having sex with someone of a very different ethnic group				0.81			
20. Having sex with someone of a different race				0.80			

(table continues)

Table 1 (*continued*)

Items	Infidelity	Short-term sex	Sexual coercion	Outgroup sex	Long-term mating	Same-sex sexuality	Paraphilic sex
21. Marrying someone from a different religious group				0.69			
22. Marrying someone whose political views are strongly opposed to one's own				0.61			
23. Cuddling with one's romantic partner after sex					0.84		
24. Telling one's romantic partner "I love you" during sex					0.76		
25. Making sure one's romantic partner is sexually satisfied					0.72		
26. Having sex with one's romantic partner to have a baby					0.68		
27. Being honest about one's sexual history (e.g., the number or identity of one's previous sexual partners)					0.52		
28. Remaining sexually faithful to one's romantic partner					0.52		
29. Marrying someone of the same sex						0.92	
30. Having sex with someone of the same sex						0.91	
31. Passionately kissing someone of the same sex						0.90	
32. Having sex with someone who is dead							0.82
33. Having sex with an animal							0.79
34. Having sex with one's sibling or one's parent							0.73
35. Having sex with one's cousin							0.63

Note. The factor loadings reported above are for Study 1 using principal components analysis with varimax rotation.

Table 2
Factor Loadings for Study 1's Moral Judgments of Female Actors

Items	Infidelity	Short-term sex	Sexual coercion	Outgroup sex	Long-term mating	Same-sex sexuality	Paraphilic sex
1. Having an ongoing emotional affair with someone who is already in a steady relationship with someone else	0.90						
2. While involved in a steady relationship, having an emotional affair with someone else	0.90						
3. Having an ongoing sexual affair with someone who is already in a steady relationship with someone else	0.79						
4. While involved in a steady relationship, having a sexual affair with someone else	0.79						
5. Having a brief sexual encounter with a married person when their spouse is out of town	0.75						
6. Having sex with a friend's romantic partner	0.64						
7. Paying someone money to have sex with them		0.87					
8. Having sex with someone because they offered to pay money		0.83					
9. Having sex with someone without being in love with them		0.74					
10. Having a one-time sexual encounter without commitment		0.70					
11. Having a reputation as an easily accessible sexual partner		0.70					
12. Watching pornography		0.57					
13. Physically forcing someone to have sex against their will			0.86				
14. Drugging a person to have sex with them			0.83				
15. Having sex with someone who is too intoxicated to know what is going on			0.78				
16. Having sex with someone who is mentally disabled so they cannot give consent			0.77				
17. Verbally pressuring someone into having sex against their will			0.75				
18. Marrying someone from a very different social class				0.84			
19. Having sex with someone of a very different ethnic group				0.81			
20. Having sex with someone of a different race				0.80			

(table continues)

Table 2 (*continued*)

Items	Infidelity	Short-term sex	Sexual coercion	Outgroup sex	Long-term mating	Same-sex sexuality	Paraphilic sex
21. Marrying someone from a different religious group				0.70			
22. Marrying someone whose political views are strongly opposed to one's own				0.60			
23. Cuddling with one's romantic partner after sex					0.82		
24. Telling one's romantic partner "I love you" during sex					0.75		
25. Making sure one's romantic partner is sexually satisfied					0.72		
26. Having sex with one's romantic partner to have a baby					0.71		
27. Being honest about one's sexual history (e.g., the number or identity of one's previous sexual partners)					0.54		
28. Remaining sexually faithful to one's romantic partner					0.51		
29. Marrying someone of the same sex						0.92	
30. Having sex with someone of the same sex						0.92	
31. Passionately kissing someone of the same sex						0.89	
32. Having sex with someone who is dead							0.87
33. Having sex with an animal							0.78
34. Having sex with one's sibling or one's parent							0.71
35. Having sex with one's cousin							0.58

Note. The factor loadings reported above are for Study 1 using principal components analysis with varimax rotation.

Table 3

Independent Samples t Test of Sex Differences in Judgments of Sexual Morality, Study 1

Factor	Male participant M	Male participant SD	Female participant M	Female participant SD	T statistic	p value	Cohen's d
Judgments of male actors							
Outgroup sex	0.30	0.85	0.28	0.82	0.27	.79	0.02
Long-term mating	1.72	0.99	1.85	0.92	−2.10	.04	−0.14
Short-term sex	−0.58	1.00	−1.07	1.06	6.86	<.001	0.46
Economics subfactor	−1.11	1.28	−1.61	1.29	5.80	<.001	0.39
Casual sex subfactor	−0.32	1.03	−0.79	1.09	6.53	<.001	0.44
Sexual coercion	−2.52	0.85	−2.73	0.60	4.55	<.001	0.31
Same-sex sexuality	−0.46	1.40	−0.43	1.51	−0.30	.77	−0.02
Paraphilic sex	−2.35	0.87	−2.64	0.60	6.00	<.001	0.41
Incest subfactor	−2.11	1.04	−2.45	0.81	5.60	<.001	0.38
Deviant subfactor	−2.58	0.87	−2.82	0.55	5.13	<.001	0.35
Infidelity	−1.94	0.95	−2.22	0.86	4.56	<.001	0.31
Judgments of female actors							
Outgroup sex	0.29	0.86	0.28	0.85	0.15	.88	0.01
Long-term mating	1.72	1.01	1.87	0.92	−2.37	.02	−0.16
Short-term sex	−0.68	1.00	−1.15	1.03	6.90	<.001	0.47
Economics subfactor	−1.17	1.25	−1.68	1.28	5.90	<.001	0.40
Casual sex subfactor	−0.43	1.02	−0.89	1.05	6.53	<.001	0.44
Sexual coercion	−2.51	0.83	−2.73	0.62	4.49	<.001	0.30
Same-sex sexuality	−0.39	1.37	−0.42	1.51	0.29	.77	0.02
Paraphilic sex	−2.35	0.88	−2.65	0.59	6.18	<.001	0.42
Incest subfactor	−2.11	1.06	−2.47	0.79	5.87	<.001	0.40
Deviant subfactor	−2.58	0.86	−2.82	0.54	5.16	<.001	0.35
Infidelity	−1.98	0.93	−2.25	0.84	4.52	<.001	0.31

Note. Results reveal significant sex-differences in perceptions of the *sexual coercion*, *short-term sex*—casual and economics, *paraphilic sex*—incest and deviant, and *infidelity* pillars such that female participants consider these behaviors more morally wrong than male participants regardless of who is commiting the act (e.g., male or female actor). On the contrary, female participants consider long-term mating as more morally good than male participants regardless of who is commiting the act (e.g., male or female actor).

previously undiscovered sex difference in participant judgments of sexual morality may reflect a feature of women's sexual morality that evaluates the costs of incest as more severe.

Sexual Coercion. Male actors ($M = -2.65$, $SD = .71$) were not judged more harshly on the *sexual coercion* factor than female actors ($M = -2.64$, $SD = .72$), $t(919) = .58$, $p = .561$; Cohen's $d = .02$, by all participants. These results did not support our predictions but can possibly be attributed to ceiling effects since sexual coercion emerged as one of the most morally condemned forms of sex by nearly all participants (see Table 3).

Importantly, ANCOVAs revealed that female participants ($M = -2.72$) judged male actors more harshly for engaging in sexual coercion than male participants did ($M = -2.53$), $F(1, 917) = 17.51$, $p < .001$. Female participants ($M = -2.72$) also judged female actors more harshly for engaging in the *sexual coercion* factor than male participants did ($M = -2.53$), $F(1, 917) = 16.38$, $p < .001$.

Infidelity. Men judged female actors ($M = -1.98$, $SD = .93$) more harshly on the *infidelity* factor than they judged male actors ($M = -1.94$, $SD = .95$), $t(354) = -2.63$, $p = .009$; Cohen's $d = .14$. At the item level, the largest sex difference was men's judgment of female actors ($M = -2.13$, $SD = 1.10$) for "having a brief sexual encounter with a married person when their spouse is out of town" compared with male actors ($M = -2.07$, $SD = 1.18$) for the same behavior, $t(355) = 2.42$, $p = .016$; Cohen's $d = .13$ (see Table 3).

ANCOVAs revealed that women ($M = -2.21$) judged male actors more harshly for engaging in infidelity than men did ($M = -1.95$), $F(1, 916) = 19.34$, $p < .001$. Female participants also judged female ($M = -2.25$) actors more harshly for engaging in the *infidelity* factor than male participants did ($M = -1.99$), $F(1, 916) = 18.59$, $p < .001$. These results support our outlined predictions about infidelity.

Short-Term Sex. Female actors ($M = -.97$, $SD = 1.04$) were moralized more harshly on the *short-term sex* factor than male actors ($M = -.88$, $SD = 1.06$), $t(919) = 6.17$, $p < .001$; Cohen's $d = .22$, by all participants, as predicted. At the item-level, the largest sex difference was toward female actors "having a reputation as an easily accessible sexual partner" ($M = -1.14$, $SD = 1.35$) compared with male actors ($M = -.97$, $SD = 1.39$), $t(919) = -6.53$, $p < .001$; Cohen's $d = .22$ (see Table 3).

ANCOVAs revealed that women ($M = -1.06$) judged male actors more harshly for engaging in short-term sex than men did ($M = -.60$; $F(1, 917) = 43.01$, $p < .001$). Female participants also judged female ($M = -1.14$) actors more harshly for engaging in the *short-term sex* factor than male participants did ($M = -.70$), $F(1, 917) = 42.92$, $p < .001$. These results support our prediction that women more than men would morally judge *short-term sex* more harshly when engaged in by either sex.

In sum, factor analysis yielded seven core factors of sexual morality for men and women. This seven-factor solution of morality in the sexual domain is more pluralistic, contains a larger number of dimensions, and is more content-saturated (as opposed to content-free) than existing theories that purport to span the entire domain of morality. The current set of studies is part of a larger program of research highlighting the multidimensionality of sexual morality (Asao, 2017). Regarding our evolution-based hypotheses, the two predictions for *short-term sex*—that female actors would be judged more harshly than male actors for engaging in it and that female participants would be more morally judgmental of it—were robustly confirmed. Similarly, our prediction that female, more than male, actors would be morally condemned more for infidelity was also confirmed. Two of our predictions were not borne out by the data—that female actors would be more harshly judged than male actors for incest and that male actors would be more harshly condemned than female actors for sexual coercion. Importantly, however, we found powerful main effects for sex of participant—women more than men judged both incest and sexual coercion more harshly. One unanticipated finding was that women judged sexual actions more harshly than men across several domains of sexual morality. Future research should seek to replicate and explain this finding from a theoretical perspective. Moreover, both incest and sexual coercion were strongly condemned by both sexes, supporting the notion that these forms of sexual conduct might be universal standards of morality—a hypothesis that requires cross-cultural studies to test properly.

Study 2: A Second Test of Evolution-Based Predictions and the Factor Structure of Sexual Morality

The primary goal of Study 2 was to replicate tests of the evolution-based predictions. A secondary goal was to retest the seven-factor structure

uncovered in Study 1 after adding content-representative items to factors that had fewer than five items to ensure adequate content-sampling and good internal-consistency reliability.

Method

Participants

After removing participants who failed attention checks, we recruited 543 participants ($n = 344$ women) from Amazon's Mechanical Turk to give judgments of events and behaviors separately for male and female actors. Participants ranged in age from 19 to 87 ($M = 41.70$; $SD = 13.80$). All participants gave informed consent before participation began and were compensated $.50 for their participation in the 30-minute survey. All procedures were approved by our institution's IRB.

Materials and Procedure

The materials and procedure were the same as in Study 1, except that participants provided moral judgments on the 35 items retained in Study 1. Two additional items were added to the *same-sex sexuality* dimension: (a) "Having sexual relations with both men and women (e.g., bisexuality)" and (b) "Having sexual relations exclusively with someone of the same sex." One item within the *incest* subfactor ("Having sex with one's sibling or one's parent") was split into two items: (a) "Having sex with one's sibling" and (b) "Having sex with one's parent" to avoid confounds associated with double-barreled questions.

Results and Discussion

Factor Analysis of Sexual Morality Domain

We ran an exploratory factor analysis (EFA) to reinvestigate the seven-factor structure of sexual morality that was found in Study 1 separately for judgments of male and female actors. We thought this was necessary because we used PCA rather than EFA in Study 1, which can inadvertently lead to higher factor loadings (Snook & Gorsuch, 1989) and because we added several new items.

Factor Structure for Judgments of Male Actors' Sexual Behavior

Parallel analysis and a scree plot indicated a seven-factor solution best fit the data. A factor solution of seven proved optimal, accounting for 59.40% of the cumulative variance. All items loaded at .50 or higher on one of the seven factors (see Table 1, Supplemental Materials for final items and factor loadings), and the items grouped together similarly to how they did in Study 1. This factor solution resulted in 38/70 items and seven factors: (a) *infidelity* ($\alpha = .91$), (b) *short-term sex* ($\alpha = .86$), (c) *sexual coercion* ($\alpha = .87$), (d) *out-group sex* ($\alpha = .86$), (e) *long-term mating* ($\alpha = .77$), (f) *same-sex sexuality* ($\alpha = .95$), and (g) *paraphilic sex* ($\alpha = .84$). A Bartlett's test of sphericity indicated sufficient collinearity to run the factor analysis, $\chi^2(703) = 13{,}517, p < .001$.

Factor Structure for Judgments of Female Actors' Sexual Behavior

Parallel analysis and a scree plot indicated a seven-factor solution best fit the data. A factor solution of seven proved optimal, accounting for 57.70% of the cumulative variance. All items loaded at .50 or higher on one of the seven factors (see Table 2, Supplemental Materials for final items and factor loadings), and the items grouped together similarly to how they did in Study 1. This factor solution resulted in 38/70 items and seven factors: (a) *infidelity* ($\alpha = .90$), (b) *short-term sex* ($\alpha = .85$), (c) *sexual coercion* ($\alpha = .85$), (d) *out-group sex* ($\alpha = .84$), (e) *long-term mating* ($\alpha = .75$), (f) *same-sex sexuality* ($\alpha = .96$), and (g) *paraphilic sex* ($\alpha = .84$). A Bartlett's test of sphericity indicated sufficient collinearity to run the factor analysis, $\chi^2(703) = 12{,}960, p < .001$.

Tests of Evolution-Based Hypotheses

We conducted the same analyses outlined in Study 1 to test our evolution-based hypotheses in this study. Briefly, we coded biological sex as a factor, created separate factor scores for each factor by actor sex, and conducted a series of t-tests and ANCOVAs. All reported ANCOVA results are after conducting post hoc analyses with Bonferroni corrections.

Incest. Female actors ($M = -2.48$, $SD = .84$) were not judged more harshly on the *incest* subfactor than male ($M = -2.48$, $SD = .84$) actors by all participants, $t(542) = -.40, p = .686$; Cohen's $d = .02$. However, women more than men judged both sexes more harshly for engaging in the incest, replicating the findings from Study 1 (see Table 4 for factor-level results by participant and actor sex). Specifically, women ($M = -2.65$) judged male actors more harshly toward the *incest* subfactor

Table 4
Independent Samples t Test of Sex Differences in Sexual Morality, Study 2

Factor	Male participant M	Male participant SD	Female participant M	Female participant SD	T statistic	p value	Cohen's d
Judgments of male actors							
Outgroup sex	0.19	0.87	0.38	0.91	−2.36	.02	−0.21
Long-term mating	1.60	1.00	1.96	0.86	−4.46	<.001	−0.40
Short-term sex	−0.58	0.97	−1.06	1.01	5.37	<.001	0.48
Economics subfactor	−1.00	1.26	−1.70	1.21	6.36	<.001	0.57
Casual sex subfactor	−0.37	0.96	−0.74	1.07	3.96	<.001	0.35
Sexual coercion	−2.49	0.90	−2.75	0.58	4.10	<.001	0.37
Same-sex sexuality	−0.51	1.38	−0.41	1.54	−0.77	.44	−0.07
Paraphilic sex	−2.35	0.86	−2.73	0.56	6.18	<.001	0.55
Incest subfactor	−2.19	1.00	−2.65	0.68	6.35	<.001	0.57
Deviant subfactor	−2.60	0.85	−2.86	0.50	4.46	<.001	0.40
Infidelity	−1.81	1.07	−2.22	0.86	4.91	<.001	0.44
Judgments of female actors							
Outgroup sex	0.20	0.87	0.37	0.89	−2.21	.03	−0.20
Long-term mating	1.62	0.96	1.96	0.85	−4.24	<.001	−0.38
Short-term sex	−0.65	0.98	−1.15	0.96	5.85	<.001	0.52
Casual sex subfactor	−0.44	0.97	−0.85	1.01	4.73	<.001	0.42
Economics subfactor	−1.08	1.26	−1.74	1.18	6.19	<.001	0.55
Sexual coercion	−2.49	0.81	−2.74	0.61	4.07	<.001	0.36
Same-sex sexuality	−0.47	1.36	−0.38	1.55	−0.65	.52	−0.06
Paraphilic sex	−2.34	0.89	−2.73	0.58	6.08	<.001	0.54
Deviant subfactor	−2.58	0.90	−2.83	0.58	4.06	<.001	0.36
Incest subfactor	−2.19	1.02	−2.65	0.66	6.43	<.001	0.57
Infidelity	−1.84	1.02	−2.28	0.77	5.66	<.001	0.50

Note. Results reveal significant sex-differences in perceptions of the *sexual coercion*, *short-term sex*—casual and economics, *paraphilic sex*—incest and deviant, and *infidelity* pillars such that female participants consider these behaviors more morally wrong than male participants regardless of who is committing the act (e.g., male or female actor). On the contrary, female participants consider the *long-term mating* and *outgroup sex* pillars as more morally good than male participants regardless of who is committing the act (e.g., male or female actor).

than men ($M = -2.19$), $F(1, 540) = 40.12, p < .001$. Women also judged female ($M = -2.65$) actors more harshly toward the *incest* subfactor than men ($M = -2.19$), $F(1, 540) = 41.12, p < .001$.

Sexual Coercion. Male actors ($M = -2.65$, $SD = .72$) were not judged more harshly on the *sexual coercion* factor than female actors ($M = -2.64$, $SD = .70$) by all participants ($t(542) = -.75, p = .455$; Cohen's $d = .03$). However, women more than men judged both sexes more harshly for engaging in sexual coercion, again replicating the findings of Study 1 (see Table 4). Specifically, women ($M = -2.75$) judged male actors more harshly toward the *sexual coercion* factor than men ($M = -2.49$), $F(1, 540) = 16.73, p < .001$. Women also judged female ($M = -2.73$) actors more harshly toward the *sexual coercion* factor than men ($M = -2.49$), $F(1, 540) = 16.53, p < .001$.

Infidelity. Male participants did not judge female actors ($M = -1.84, SD = 1.02$) more harshly on the *infidelity* factor than male actors ($M = -1.81$, $SD = 1.07$), $t(198) = 1.02, p = .310$; Cohen's $d = .07$. However, at the item level, men judged female actors ($M = -2.07, SD = 1.10$) more harshly than did women "while involved in a steady relationship, having a sexual affair with someone else" ($M = -1.99, SD = 1.19$), $t(198) = 2.43, p = .016$; Cohen's $d = .17$; see Table 4.

Women judged male and female actors more harshly on the *infidelity* factor than men. Specifically, women ($M = -2.22$) judged male actors more harshly toward the *infidelity* factor than men ($M = -1.81$), $F(1, 540) = 23.89, p < .001$. Women also judged female ($M = -2.28$) actors more harshly toward the *infidelity* factor than men ($M = -1.84$), $F(1, 540) = 31.74, p < .001$.

Short-Term Sex. Women actors ($M = -.97$, $SD = .99$) were moralized more harshly on the *short-term sex* factor than male actors ($M = -.88$, $SD = 1.02$) by all participants, $t(542) = 4.47, p < .001$; Cohen's $d = .19$. At the item level, the largest sex difference was between female participants ($M = -1.76, SD = 1.24$) and male participants ($M = -1.04, SD = 1.38$) toward "a man having sex with someone because they offered to pay money," $t(541) = 6.28, p < .001$; Cohen's $d = .56$.

As in Study 1, women more than men judged *short-term sex* more harshly regardless of the sex of actor. Specifically, women ($M = -1.06$) judged male actors more harshly toward the *short-term sex* factor than men ($M = -.59$), $F(1, 540) = 28.70, p < .001$. Women also judged female ($M = -1.15$) actors more harshly toward the *short-term sex* factor than men ($M = -.65$), $F(1, 540) = 34.10, p < .001$.

In sum, we replicated the seven-factor structure of sexual morality uncovered in Study 1 using EFA separately for men and women. Study 2 provided an independent test of our evolution-based predictions. As with Study 1, we found that women judged incest and sexual coercion more harshly than did men, but there were no significant sex differences in these factors based on sex of actor. Also replicating Study 1, Study 2 confirmed predictions based on sex of actor and sex of participant for engaging in *short-term sex*—women judged casual sex more harshly than did men, and women who engaged in casual sex were judged more harshly than men who engaged in casual sex. As in Study 1, women judged several domains of sexual behavior more negatively than did men.

Study 3: A Third Test of Evolutionary Hypotheses and Factor Structure

Given the replicability crisis in psychology, Study 3 sought a third test of the evolution-based predictions about sex differences in sexual morality. Study 3 also sought to replicate the seven-factor structure of the sexual morality domain, and to explore how men and women inclined toward unrestricted mating differed in their moral judgments of the *short-term sex* factor for male and female actors compared with their long-term oriented counterparts.

Method

Participants

A total of 380 participants ($n = 224$ women) were recruited from Amazon's Mechanical Turk to participate in a study on judgments of events and behaviors. Participants ranged in age from 20 to 72 ($M = 39.80$; $SD = 12.30$). All participants were compensated $.25 for completion of the 15-minute survey. All procedures were approved by our institution's IRB.

Measures

Sexual Morality. Participants were asked to provide their personal moral judgments of the 38 Sexual Morality Inventory items on a -3 to $+3$ Likert scale (-3: *extremely morally bad*; $+3$: *extremely morally good*) separately for male and

female actors. For a complete list of items see the Appendix.

Sociosexual Orientation-Revised. This questionnaire assesses individual differences in sociosexual orientation, or the tendency to engage in uncommitted sexual relationships among three facets: behaviors, attitudes, and desires (SOI-R; Penke & Asendorpf, 2008) We used a composite score of all nine items ($\alpha = .84$) to examine how men and women inclined toward unrestricted mating differed in their moral judgments of the *short-term sex* factor for male and female actors compared with their long-term oriented counterparts.

Procedure

After providing informed consent and completing the above individual differences questionnaires, participants completed a brief demographics questionnaire providing their age, biological sex, political orientation, religiosity, and sexual orientation. All participants read a debriefing statement, were thanked for their participation, and were provided with a randomized code to receive compensation.

Results and Discussion

Confirming the Factor Structure of Sexual Morality

Confirming the Factor Structure for Judgments of Male Actors' Sexual Behavior. We ran a CFA to test the seven-factor structure that was found in Study 2 for the moral judgments of male actors' behaviors. The CFA indicated that a seven-factor structure adequately fit the data, $\chi^2(644, N = 380) = 1,668$, $p < .001$, CFI = .884, RMSEA = .0647. All items loaded at .30 or higher onto one of the seven factors.

Confirming the Factor Structure for Judgments of Female Actors' Sexual Behavior. We ran a CFA to test the seven-factor structure that was found in Study 2 for the moral judgments of female actors' behaviors. The CFA indicated that a seven-factor structure adequately fit the data, $\chi^2(644, N = 380) = 1,641$, $p < .001$, CFI = .878, RMSEA = .0638. All items loaded at .30 or higher onto one of the seven factors.

Tests of Evolutionary Predictions

We conducted the same analyses—*t* tests and ANCOVAs—outlined in Studies 1 and 2 to test our evolution-based hypotheses. All reported ANCOVA results are after conducting post hoc analyses with Bonferroni corrections.

Incest. Female actors ($M = -2.60$, $SD = .65$) were not judged more harshly on the *incest* subfactor than male ($M = -2.59$, $SD = .65$) actors by all participants, $t(379) = 1.77$, $p = .077$; Cohen's $d = .09$. Male participants had higher variance than female participants in their judgment of the incest when evaluating both sexes (see Table 5 for factor-level results by participant and actor sex).

As in Studies 1 and 2, women judged both sexes more harshly than did men for engaging in incest. For example, women ($M = -2.65$) judged male actors more harshly toward the *incest* subfactor than men ($M = -2.50$), $F(1, 377) = 4.81$, $p = .029$. Women also judged female ($M = -2.67$) actors more harshly toward the *incest* subfactor than men ($M = -2.51$), $F(1, 377) = 5.37$, $p = .021$.

Sexual Coercion. Male actors ($M = -2.76$, $SD = .51$) were not judged more harshly on the *sexual coercion* factor than female actors ($M = -2.73$, $SD = .48$), $t(379) = -1.52$, $p = .128$; Cohen's $d = .08$. At the item-level, male actors ($M = -2.92$, $SD = .36$) were judged more harshly for "physically forcing a person to have sex against their will," than female actors ($M = -2.86$, $SD = .49$) by all participants, $t(379) = -3.30$, $p = .001$; Cohen's $d = .17$, as well as "verbally pressuring someone to have sex against their will" ($M_{male} = -2.55$, $SD_{male} = .82$) than female actors ($M_{female} = -.248$, $SD_{female} = .92$) by all participants, $t(379) = -2.41$, $p = .016$; Cohen's $d = .12$ (see Table 5).

As in Studies 1 and 2, women ($M = -2.79$) judged male actors more harshly than men did ($M = -2.71$) for perpetrating sexual coercion, although this was not significant, $F(1, 377) = 2.10$, $p = .15$. Women ($M = -2.79$) judged female actors more harshly than men did ($M = -2.65$) for perpetrating sexual coercion, $F(1, 377) = 7.99$, $p = .005$, replicating results from Studies 1 and 2.

Infidelity. Female actors ($M = -2.06$, $SD = .86$) were judged more harshly for infidelity than were male actors ($M = -2.00$, $SD = .92$) by male participants, $t(156) = 2.31$, $p = .022$; Cohen's $d = .1$. At the item-level, the largest sex difference was toward female actors ($M = -2.23$, $SD = .98$) for "while involved in a steady relationship, having a sexual affair with someone else" than male actors ($M = -2.16$, $SD = 1.04$) for the same behaviors, $t(155) = 2.57$, $p = .011$; Cohen's $d = .21$ (see Table 5).

Women ($M = -2.19$) more than men ($M = -2.00$) judged male actors more harshly toward the

Table 5

Independent Samples t Test of Sex Differences in Sexual Morality, Study 3

Factor	Male participant M	Male participant SD	Female participant M	Female participant SD	T statistic	p value	Cohen's d
Judgments of male actors							
Outgroup sex	0.35	0.85	0.43	0.92	−0.81	.42	−0.08
Long-term mating	1.90	0.80	1.89	0.88	0.09	.93	0.01
Short-term sex	−0.57	0.90	−0.95	1.02	3.77	<.001	0.39
Casual sex subfactor	−0.25	0.91	−0.60	1.10	3.26	.001	0.34
Economics subfactor	−1.21	1.24	−1.66	1.26	3.46	<.001	0.36
Sexual coercion	−2.71	0.48	−2.79	0.53	1.45	.15	0.15
Same-sex sexuality	−0.49	1.40	−0.34	1.53	−0.99	.32	−0.10
Paraphilic sex	−2.61	0.64	−2.74	0.48	2.32	.02	0.24
Incest subfactor	−2.50	0.75	−2.65	0.58	2.18	.03	0.23
Deviant subfactor	−2.77	0.61	−2.88	0.52	1.93	.05	0.20
Infidelity	−2.00	0.92	−2.20	0.83	2.19	.03	0.23
Judgments of female actors							
Infidelity	−2.06	0.86	−2.30	0.70	3.06	<.01	0.32
Paraphilic sex	−2.61	0.64	−2.76	0.46	2.70	<.01	0.28
Incest subfactor	−2.51	0.73	−2.67	0.58	2.33	.02	0.24
Deviant subfactor	−2.76	0.61	−2.90	0.37	2.82	<.01	0.29
Same-sex sexuality	−0.36	1.33	−0.24	1.51	−0.84	.40	−0.09
Sexual coercion	−2.65	0.51	−2.79	0.45	2.86	<.01	0.30
Short-term sex	−0.69	0.91	−1.13	0.99	4.40	<.001	0.46
Casual sex subfactor	−0.42	0.92	−0.81	1.06	3.74	<.001	0.39
Economics subfactor	−1.25	1.21	−1.78	1.20	4.26	<.001	0.44
Long-term mating	1.91	0.81	1.89	0.89	0.24	.82	0.02
Outgroup sex	0.34	0.88	0.42	0.92	−0.88	.38	−0.09

Note. Results reveal significant sex-differences in perceptions of the *short-term sex*—casual and economics, *paraphilic sex*—incest and deviant, and *infidelity* pillars such that female participants consider these behaviors more morally wrong than male participants regardless of who is committing the act (e.g., male or female actor). Additionally, results reveal significant sex differences in perceptions of female actors engaging in behaviors subsumed by the Sexual Coercion pillar, with female participants judging female actors more harshly than male participants.

infidelity factor, $F(1, 377) = 4.53, p = .034$. Finally, women ($M = -2.30$) more than men ($M = -2.06$) judged female actors more harshly toward the *infidelity* factor, $F(1, 377) = 9.02, p = .003$. These results replicate Studies 1 and 2.

Short-Term Sex.   Female actors ($M = -.95$, $SD = .98$) were moralized more harshly on the *short-term sex* factor than male actors ($M = -.80$, $SD = .99$) by all participants, $t(379) = -6.45, p < .001$; Cohen's $d = .33$ (see Table 5). At the item level, the largest sex difference was between female participants' ($M = -1.83, SD = 1.20$) and male participants ($M = -1.26, SD = 1.29$) judgments toward "a woman having sex with someone because they offered to pay money," $t(378) = 4.39, p < .001$; Cohen's $d = .46$.

As in Studies 1 and 2, women ($M = -.95$) judged male actors more harshly for engaging in short-term sex than men did ($M = -.58$; $F(1, 377) = 13.43, p < .001$). Likewise, women ($M = -1.12$) judged female actors more harshly for engaging in short-term sex than men did ($M = -.70$), $F(1, 377) = 18.43, p < .001$.

SOI-R and Judgments of the Short-Term Sex Factor for Male Actors.   To examine how male participants ($n = 156$) inclined toward unrestricted mating differed in their moral judgments of the *short-term sex* factor for male actors compared with their long-term oriented counterparts, we conducted an ordinary least squares (OLS) regression using a composite score of the SOI-R to predict judgments of male actors on the *short-term sex* factor. As predicted, male participants with higher SOI-R scores (e.g., higher interest in short-term mating; Buss & Schmitt, 1993) moralized male actors engaging in the *short-term sex* factor more positively or morally good (Standardized $\beta = .39, p < .001$).

We next conducted a parallel analysis to examine how female participants ($n = 224$) inclined toward unrestricted mating differed in their moral judgments of the *short-term sex* factor for male actors compared with their long-term oriented counterparts. Female participants with higher SOI-R scores moralized male actors engaging in the *short-term sex* factor more positively or morally good (Standardized $\beta = .51, p < .001$).

SOI-R and Judgments of the Short-Term Sex Factor for Female Actors.   Next, we analyzed how male participants inclined toward unrestricted mating differed in their moral judgments of the *short-term sex* factor for female actors. Male participants with higher SOI-R scores moralized female actors engaging in the *short-term sex* factor more

positively or morally good (Standardized $\beta = .33$, $p < .001$). A parallel analysis of female participants' judgments toward female actors toward the *short-term sex* factor revealed that female participants with higher SOI-R scores moralized female actors engaging in the *short-term sex* factor more positively (Standardized $\beta = .59, p < .001$).

In summary, individual differences in the disposition to pursue a short-term mating strategy predicted moral evaluations of the *short-term sex* factor (including the sex-for-money exchange subfactor)—a result that transcended sex of judger and sex of the person being judged.

General Discussion

The underlying psychology of morality has been subject to a dramatic increase in scholarly attention over the past decade. With the exception of incest, morality around different forms of sexuality has not been well investigated or theorized about. One central aim of these three studies was to test evolution-based hypotheses about sex differences in sexual morality. The second central aim of the three empirical studies in the current report was to investigate the universe of moralized sexual conduct and to identify the underlying dimensional complexity of sexual morality.

Sex Differences and Individual Differences in Sexual Morality

In advance of the three empirical studies, we formulated evolution-based hypotheses about sex differences in the moralization of incest, sexual coercion, infidelity, and short-term sex. These were anchored in well-established sex differences in the cost-benefit consequences of these forms of sexuality. Being a victim of incest and sexual coercion, for example, was hypothesized to be more costly on average for women than for men. A partner's sexual infidelity was hypothesized to be more costly to men than to women due to paternity uncertainty (Trivers, 1972). Because short-term uncommitted sex has generally been more beneficial to men than to women in the currency of reproductive success (Buss & Schmitt, 1993), we hypothesized that women would more harshly moralize short-term sex in both men and in women. We also predicted that women would be judged more harshly than would men for engaging in short-term sex because the existence of women in the mating pool who are

willing to engage in uncommitted sex strategically interferes with women who are pursuing a long-term mating strategy (Buss, 2016).

Across the three studies, we found the strongest support for the hypotheses regarding short-term sex. Women actors were indeed judged more harshly than men actors, and women participants judged both sexes more harshly than did men participants. The participant sex difference was particularly strong for the sexual economics subfactor—the exchange of sex for money. This finding has potential policy implications for perennially controversial issues such as the decriminalization of prostitution and other forms of sex work. It suggests that women, on average, will be more motivated than men to oppose the decriminalization of sex work and other forms of transactional money-for-sex exchanges. Moreover, women judges and jurors may mete out harsher penalties for those who violate laws against sex work. Thus, the current findings have important practical implications, as well as theoretical implications for theories of morality.

We found no support in any of the three studies for the predictions that women who engage in incest would be more morally condemned than men who do, nor that men who engage in sexual coercion would be more morally condemned than women who do. A possible explanation for these predictive failures is that our assessment methods produced ceiling effects. Incest and sexual coercion were among the most strongly negatively moralized forms of sexuality by nearly all participants in all three studies. Cross-cultural tests, especially of non-WEIRD samples, are required to confirm or disconfirm whether these forms of sexual condemnation are universal features of human psychology. Future studies could also design measures that do not produce these ceiling effects, such as forced-choice or ranking methods (e.g., Buss et al., 1992). Alternatively, the two hypotheses about sex differences could simply be false if human moral psychology universally condemns these cost-inflicting forms of sexuality regardless of the sex of perpetrator.

Across all three studies, we found consistent sex differences in moral condemnation of sexual coercion. Women judge these forms of conduct to be more morally reprehensible than do men. Because sexual assault is overwhelmingly perpetrated more by men than by women and is more costly to women victims than to men victims, these sex differences in sexual morality may reflect a female psychological defense against rape. There is strong written, paleontological, and molecular genetic evidence that rape has been a recurrent hazard to women over human evolutionary history (Buss, 2021; Thornhill & Palmer, 2001). Consequently, the stronger moralization of sexual coercion by women may reflect a psychology in women sensitive to this recurrent hazard that is less strongly present in men.

We examined one within-sex individual differences variable—the degree to which participants pursued a short-term mating strategy, as measured by the SOI-R. Results showed that this mating strategy predicted moral evaluations of short-term sex regardless of sex of participant and sex of actor. Men and women inclined toward short-term mating viewed the *short-term sex* factor as more morally good regardless of who was said to engage in uncommitted sex. Because both women and men can benefit from short-term mating under certain circumstances (e.g., additional reproductive opportunities for men, good genes or immediate access to resources for women), the mating strategy individuals pursue should predict moral judgments about sexual conduct for both sexes.

One unanticipated finding was that women engaged in more moral condemnation of sexual behavior than did men, regardless of domain. This suggests that women's sexual moral psychology may be more punitive and sensitive than men's. This is possibly attributable to the greater likelihood for women to experience the costs associated with a variety of moralized sexual behaviors, such as sexual coercion. If women are more likely to be the victims of exploitative or cost-inflicting sexual behaviors, a harsher sexual morality could be part of women's psychological defense system. This hypothesis requires further testing in more representative samples, for example across cultures. More generally, to the best of our knowledge, no existing evolutionary theories of morality contain any sex-differentiated components. All extant morality theories are domain-general in this sense, assuming that standards of morality are identical for the sexes. Consequently, we suggest that future developments in theories of morality should include explanations for the sex-differentiated elements discovered in the current three empirical studies.

Sexual Morality Is Multidimensional, Not Unidimensional

The current studies uncovered seven dimensions of sexual morality—three domains of sexuality

consistently moralized as bad (*sexual coercion*, *paraphilic sex*, and *infidelity*), one domain of sexuality consistently moralized as good (*long-term mating*), and three domains of sexuality that showed large individual differences in the degree to which they were moralized (*short-term sex*, *same-sex sexuality*, and *outgroup sex*). We suggest that each dimension of sexual morality represents a partially distinct subcomponent of sexual morality that, together, provide a more nuanced and comprehensive map of the universe of moralized sexual conduct. Future research should investigate the potential underlying computational architecture of sexual morality to uncover the influence of individual and cultural differences in the development and transmission of norms surrounding sexual behavior.

It remains an open question whether domain-general theories of morality can account for the multidimensional nature of sexual morality. Because sexuality is one of the most heavily moralized domains of human conduct, judging from its ubiquity in laws and religious doctrines dating back thousands of years, a comprehensive theory of morality should be able to explain these importantly different facets of sexual morality. Adaptations to avoid incest have at least some distinctive aspects compared with adaptations to avoid sexual coercion. Kin recognition adaptations, for example, are invariantly relevant to incest avoidance, but not invariantly relevant to sexual coercion avoidance. Moralization of sex-for-resources exchanges should have some distinctive aspects compared with the moralization of sexual infidelity. The former, for example, exploits transactional reciprocity adaptations (e.g., Cosmides, 1989), whereas the latter activates deep engagement adaptations characteristic of human pair-bonded mating (e.g., Tooby & Cosmides, 1996). We look forward to attempts by evolutionarily sophisticated moral theorists, such as those by Curry and colleagues (2019), Graham and colleagues (2011), and Baumard and Boyer (2013) to explain these distinctive components of sexual morality.

Limitations

The current studies are limited in several respects. First, the studies were conducted online through Amazon's Mechanical Turk. Although we went this route to try to recruit a diverse array of participants—more so than what can be acquired through a university sample—issues involved with convenience sampling may still be at play. For example, it is difficult to make broad conclusions about the nature of morality based on online participants. Future research should include a younger sample, to see if the sexual acts included on our Sexual Morality Inventory are consistently condemned by younger individuals.

Second, our studies were conducted within one culture. Although we attempted to study human morals surrounding sex using an evolutionary approach—that is, how moralizing specific sexual behaviors represent solutions to recurrent, universal, adaptive problems—it is critical to investigate sexual morality in other cultures. To understand a universal view of sexual morality, future research must consider how non–Western, Educated, Industrialized, Rich, and Democratic (WEIRD; Henrich et al., 2010; for a review see Apicella et al., 2020) individuals moralize different sexual behaviors. Cross-cultural tests are needed to evaluate whether the seven factors of sexual morality uncovered in the current report are universal or culture-specific, as well as whether the consistently moralized factors in our samples (good and bad) are equally moralized in other cultures.

Conclusions

The current studies make important contributions to the psychology of sexual morality. To our knowledge, this was the first attempt to empirically investigate the broad sample space of moralized sexual conduct. These studies suggest that sexual morality is not unidimensional; rather, we uncovered considerable multidimensional complexity in the domain of sexual morality by identifying seven replicable factors that are distinct in content.

The current studies also highlight some sex-differentiated components of sexual morality. Women across all three studies, for example, expressed more moral condemnation of short-term sex, and especially transactional sex-for-money exchanges. Sexual infidelity, to take another example, was more morally condemned by women than by men in all three studies. Moreover, both sexes viewed sexual infidelity committed by a woman with greater moral opprobrium than when committed by a man (two out of three of the studies). These findings of sex differences in sexual morality have both applied and theoretical consequences. In the applied realm, they suggest that women and men will differ in their attitudes toward policies and laws that regulate sexual conduct. In the theoretical realm, they suggest that sexuality is a particularly

important domain that comprehensive theories of morality must explain, with special attention to accounting for sex-differentiated moralizing within this domain.

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Appendix

The Sexual Morality Inventory

INSTRUCTIONS: In this study, we are interested in your judgments of events and behaviors. Some you will evaluate to be <u>morally right or good in your opinion</u>; others you will evaluate to be <u>morally wrong or bad in your opinion</u>. <u>There are no right or wrong answers.</u>

same for men and women; for others, your moral judgments may be different for men and women.

Please use the scale below (ranging from −3 to +3) to provide your moral judgment of the act for men and for women. For some events and behaviors, your moral judgment may be the

Use this scale:
+3 = extremely morally good
+2 = moderately morally good
+1 = slightly morally good
0 = neither morally good nor morally bad
−1 = slightly morally bad
−2 = moderately morally bad
−3 = extremely morally bad

Act Performed By:

Male	Female	
_____	_____	1. Having a one-time sexual encounter without commitment
_____	_____	2. Passionately kissing someone of the same sex
_____	_____	3. Making sure one's romantic partner is sexually satisfied
_____	_____	4. Having sex with one's sibling
_____	_____	5. Having an ongoing sexual affair with someone who is already in a steady relationship with someone else
_____	_____	6. Physically forcing someone to have sex against their will
_____	_____	7. Having sex with someone of a different race
_____	_____	8. Having sex with someone because they offered to pay money
_____	_____	9. Having sex with someone of the same sex
_____	_____	10. Remaining sexually faithful to one's romantic partner
_____	_____	11. Having sex with one's parent
_____	_____	12. While involved in a steady relationship, having a sexual affair with someone else
_____	_____	13. Drugging a person to have sex with them
_____	_____	14. Marrying someone from a different religious group
_____	_____	15. Paying someone money to have sex with them
_____	_____	16. Marrying someone of the same sex
_____	_____	17. Having sex with one's romantic partner to have a baby
_____	_____	18. Having sex with one's cousin
_____	_____	19. While involved in a steady relationship, having an emotional affair with someone else
_____	_____	20. Verbally pressuring someone into having sex against their will
_____	_____	21. Having sex with someone of a very different ethnic group
_____	_____	22. Having sex with someone without being in love with them
_____	_____	23. Having sexual relations exclusively with someone of the same sex
_____	_____	24. Cuddling with one's romantic partner after sex
_____	_____	25. Having sex with an animal
_____	_____	26. Having sex with a friend's romantic partner
_____	_____	27. Having sex with someone who is mentally disabled so they cannot give consent
_____	_____	28. Marrying someone whose political views are strongly opposed to one's own
_____	_____	29. Watching pornography
_____	_____	30. Having sexual relations with both men and women (e.g., bisexuality)
_____	_____	31. Telling one's romantic partner "I love you" during sex
_____	_____	32. Having sex with a dead body
_____	_____	33. Having an ongoing emotional affair with someone who is already in a steady relationship with someone else
_____	_____	34. Having sex with someone who is too intoxicated to know what is going on
_____	_____	35. Marrying someone from a very different social class
_____	_____	36. Having a reputation as an easily accessible sexual partner
_____	_____	37. Being honest about one's sexual history (e.g., the number or identity of one's previous sexual partners)
_____	_____	38. Having a brief sexual encounter with a married person when their spouse is out of town

Note. First standardize within each item and then take the average of the items listed below to create each dimension's composite score separately for judgments of male and female actors. Standardization is to ensure that items with larger variance do not overinfluence the composite score. Averaging across items handles missing data better than summing across items. *Short-term sex* and *paraphilia sex* can be further split by subfactor.

Short-term sex:
    Casual sex: 1, 22, 29, and 36
    Sexual economics: 8 and 15
Same-sex sexuality: 2, 9, 16, 23, and 30
Long-term mating: 3, 10, 17, 24, 31, and 37
Paraphilic sex:
    Incest: 4, 11, and 18
    Deviant sex: 25 and 32

Infidelity: 5, 12, 19, 26, 33, and 38
Sexual coercion: 6, 13, 20, 27, and 34
Outgroup sex: 7, 14, 21, 28, and 35