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ORIGINAL ARTICLE

Unrestricted Sociosexuality Decreases Women's (but not Men's) Homophobia

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Abstract

A recent evolutionary theory of female sexual fluidity suggests that women do not have sexual orientations in the same sense that men do, and instead women's apparent sexual orientation is a function of their sociosexual orientation. Among other things, the theory predicts that women's unrestricted sociosexual orientation decreases their negative attitude toward same-sex behavior, whereas men's unrestricted sociosexual orientation increases it. An analysis of the General Social Surveys data shows that, net of age, education, race, religion, religiosity, political attitude, intelligence, urbanicity and region of residence, and survey year, sociosexually unrestricted women are less likely to believe homosexual relationships are always morally wrong, while sociosexuality was not associated with homophobia among men. The study provides further evidence for the evolutionary theory of female sexual fluidity.

Keywords Polygyny hypothesis · Sexual prejudice · Evolutionary psychology · Sex research

Like all forms of prejudice, homophobia—negative attitudes toward gay and bisexual individuals and their sexual behavior—has dramatically decreased in recent decades in the United States and other western democratic societies. Yet it remains in some corners. Unlike racism and sexism, homophobia is not universally condemned in the United States (Herek & McLemore, 2013). For example, the federal law in the United States does not expressly prohibit discrimination based on sexual orientation, and in eight states (AL, MI, MS, ND, SD, TX, VA), "religious exemptions" in state

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laws allow "license to discriminate" in employment, housing and access to services such as adoption, foster care, and counseling (Human Rights Watch, 2018). There are also some predictable individual differences in the tendency toward homophobia. Past research shows that homophobic individuals are more likely to be men, older, less educated, politically conservative, strongly religious, and live in rural areas in Midwestern and Southern states (Herek, 2009).

One potential correlate of homophobia that has not received much attention is *sociosexuality* or *sociosexual orientation*, an individual difference variable that measures implicit prerequisites to entering a sexual relationship (Gangestad & Simpson, 1990). Individuals with *restricted* sociosexual orientation typically require more time and stronger attachment to, commitment to, and closeness with romantic partners before entering a sexual relationship with them, while individuals with *unrestricted* sociosexual orientation require less time with and weaker attachment to romantic partners before engaging in sex with them. Sociosexuality has remained a central concept in evolutionary psychology and sex research over the past 30 years (Hughes et al., 2020; Kanazawa, 2020; Kanazawa & Apari, 2009).

Building on earlier work (Bailey, 2009; Diamond, 2008), the evolutionary theory of female sexual fluidity (Kanazawa, 2017) proposes that women are evolutionarily designed to be sexually fluid in the context of mild polygyny during human evolutionary history, so that they can occasionally have sex with their cowives in order to reduce conflict and tension inherent in nonsororal polygynous marriages while at the same time allowing them to reproduce with their husbands. Among other things, the theory suggests that women do not have sexual orientations in the same sense that men do—women are not either heterosexual or homosexual—and instead women's apparent sexual orientation is a manifestation of their sociosexual orientation. The theory posits that most women are sexually attracted to men most (say, 95%) of the time, but sexually attracted to women some (say, 5%) of the time. Then, if a woman has a few sexual partners because she is sociosexually restricted, most or all of her sexual partners are statistically likely to be men. If another woman has a large number of sexual partners because she is sociosexually unrestricted, then some or many of her sexual partners are statistically likely to be women while a majority of them are still men.

Among many other empirical and theoretical puzzles in evolutionary psychology and sex research, the theory can explain why there is a significantly positive correlation between the number of male and female sexual partners women have had, when the same correlation is significantly negative for men (Kanazawa, 2017, p. 1259). Women who have many female partners have a larger number of male partners than women who have few or no female partners do. The theory can thus explain why male sexual desire is category-specific while female sexual desire is not (Chivers, 2005; Chivers et al., 2004; Lippa, 2006, 2007; Lippa et al., 2010). Sexual fluidity allows women to be capable of being attracted to both men and women, while men are mostly born either heterosexual or homosexual (Bailey et al., 2016; Wilson & Rahman, 2005), although the latest meta-analysis (Jabbour et al., 2020) suggests that bisexual orientation in some men may be genuine. The theory cannot explain exclusive lesbians; however, only 0.3% of American women (Kanazawa, 2017, p. 1267) and 0.7% of Australian women (Fethers et al., 2000) fall in this category.

The evolutionary theory of female sexual fluidity (Kanazawa, 2017) has received initial empirical support. More sexually fluid women have more children, suggesting that female sexual fluidity may have been evolutionarily selected, and marriage and parenthood early in life increases women's sexual fluidity later in life (Kanazawa, 2017, pp. 1265–1267). Father absence during childhood increases women's (but not men's) tendency toward same-sex sexuality, measured by self identity, sexual behavior, and romantic attraction, but the associations are *entirely* mediated by sociosexual orientation (Kanazawa, 2020). Women who are menopausal or otherwise biologically infertile, who cannot reproduce (any longer), are more likely to hold same-sex identity, engage in same-sex behavior, and experience same-sex attraction, but women who are surgically infertile are not (Kanazawa & Larere, in press). Biological infertility nearly doubles the odds of women having engaged in same-sex behavior and the number of same-sex partners in the last 12 months, and nearly triples the lifetime number of same-sex partners. In sharp contrast, among men, biological infertility is not associated with same-sex sexuality, and surgical infertility is significantly negatively associated with it (Kanazawa & Larere, in press).

Another implication of the theory is that sociosexuality would have sexually dimorphic effects on attitude toward homosexuality. Sociosexually unrestricted women, who often find themselves sexually attracted to women as well as men, should have more positive attitude toward homosexuality than do sociosexually restricted women, who rarely if ever find themselves sexually attracted to women. In sharp contrast, sociosexually unrestricted heterosexual men, who have a larger number of female sexual partners than sociosexually restricted heterosexual men do, should have more negative attitude toward homosexuality, because men are largely born either heterosexual or homosexual. This is because, while homophobic women are equally antagonistic to gay men and lesbians, homophobic men are mostly antagonistic to gay men, not lesbians (Bettinsoli et al., 2020; Herek 2000, 2002; LaMar & Kite, 1998). Consistent with this reasoning, Nagoshi et al. (2008) found that more sociosexually unrestricted women were less homophobic whereas sociosexuality was not associated with homophobia in men. Pinsof and Haselton (2016) found that more sociosexually restricted individuals were more likely to oppose same-sex marriage. However, they did not predict (or find) a sexually dimorphic effect of sociosexuality predicted here, and their dependent variable was support for same-sex marriage, not homophobia per se. Homophobia is just one factor among a potentially large number of factors that influence individuals' attitude toward same-sex marriage. In this paper, I will empirically test the prediction derived from the evolutionary theory of female sexual fluidity with regard to the sexually dimorphic effects of sociosexuality on attitude toward homosexuality (homophobia).

Empirical Analysis

Data

The National Opinion Research Center at the University of Chicago has administered the General Social Surveys (GSS), either annually or, more recently, biennially, since

1972. Personal interviews are conducted with a nationally representative sample of non-institutionalized adults over the age of 18 in the United States. The GSS data used in this study are publicly and freely available to download at https://gssdataexplorer.norc.org/pages/show?page=gss%2Fgss_data.

Dependent Variable: Homophobia

In most survey years, the GSS assesses the respondents' attitude toward homosexuality with the following question: "What about sexual relations between two adults of the same sex—Do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?" The responses are recoded so that higher values indicate greater homophobia: 1 = not wrong at all; 2 = only wrong sometimes; 3 = almost always wrong; 4 = always wrong.

Independent Variable: Sociosexual Orientation

I use the total number of opposite-sex sex partners since age 18 as a measure of (unrestricted) sociosexual orientation. While the GSS measures the number of sex partners in more recent past (in the past five years, in the last 12 months), it does not distinguish between male and female sex partners in these measures. The only measure of the number of sex partners of a specific sex is the lifetime number since 18. Because the raw total number of opposite-sex sex partners is extremely skewed for both women and men (skewness: 38.558 for women, 13.001 for men), I take the natural log of the raw counts (skewness after natural log transformation: −3.060 for women, −2.898 for men).

Control Variables

I control for all known correlates of homophobia identified by past research (Herek, 2009; Kanazawa, 2012): Age (in chronological years); education (number of years of formal schooling); race (with two dummies for black and other races, with white as the reference category); current marital status (1 if currently married, 0 otherwise); sexual orientation (0 = "heterosexual or straight," 1 = "bisexual," 2 = "gay, lesbian, or homosexual"); religion (with four dummies for Catholic, Protestant, Jewish, and other religion, with no religion as the reference); religiosity (1 = no religion, 2 = not very strong, 3 = somewhat strong, 4 = strong); frequency of church attendance (0 = "never," 1 = "less than once a year," 2 = about once or twice a year," 3 = several times a year," 4 = "about once a month," 5 = "2–3 times a month," 6 = "nearly every week," 7 = "every week," 8 = "several times a week"); political attitude (1 = extremely conservative, 2 = conservative, 3 = slightly conservative, 4 = moderate, middle of the road, 5 = slightly liberal, 6 = liberal, 7 = extremely liberal); intelligence (verbal IQ measured with a 10-item synonyms test, with the raw score transformed into the standard IQ metric, with a mean of 100 and a standard deviation of 15); urbanicity

Table 1 Sexually dimorphic associations between unrestricted sociosexual orientation and homophobia

	Women	Men
ln(number of opposite-sex partners)	−0.079***	−0.028
	(0.022)	(0.024)
Age	0.020***	0.013***
	(0.004)	(0.004)
Education	−0.135***	−0.146***
	(0.019)	(0.020)
Race		
Black	0.706***	0.662***
	(0.146)	(0.179)
Other race	0.490**	0.358
	(0.185)	(0.196)
Current marital status	0.321**	0.456***
	(0.100)	(0.105)
Sexual orientation	−0.991***	−0.983***
	(0.188)	(0.177)
Religion		
Catholic	−0.451*	0.014
	(0.180)	(0.169)
Protestant	0.166	0.269
	(0.173)	(0.162)
Jewish	−2.632***	−0.798*
	(0.544)	(0.366)
Other religion	−0.134	0.121
	(0.251)	(0.271)
Religiosity	0.173**	0.200**
	(0.060)	(0.070)
Frequency of church attendance	0.184***	0.154***
	(0.022)	(0.025)
Political views	−0.393***	−0.309***
	(0.036)	(0.036)
IQ	−0.019***	−0.032***
	(0.004)	(0.004)
Urbanicity	−0.123***	−0.066
	(0.033)	(0.035)
Region		
Mid-Atlantic	0.589*	0.505*
	(0.243)	(0.250)
East North Central	0.840***	0.556*
	(0.234)	(0.238)
West North Central	0.870***	0.356
	(0.260)	(0.271)
South Atlantic	1.098***	0.649**
	(0.237)	(0.240)
East South Central	1.539***	1.221***
	(0.299)	(0.311)
West South Central	1.335***	0.900***
	(0.257)	(0.264)
Mountain	0.760**	0.403
	(0.262)	(0.270)

Table 1 (continued)

	Women	Men
Pacific	0.779**	0.238
	(0.242)	(0.246)
Survey year	−0.077***	−0.071***
	(0.006)	(0.006)
Threshold		
Y=1	−157.828	−148.020
	(11.670)	(12.111)
Y=2	−157.364	−147.478
	(11.667)	(12.108)
Y=3	−157.124	−147.148
	(11.666)	(12.106)
Nagelkerke pseudo R^2	0.425	0.387
−2LogLikelihood (df=22)	4294.097***	3958.043***
Number of cases	2,704	2,360

Note: *$p<.05$ ** $p<.01$ *** $p<.001$

Main entries are unstandardized regression coefficients

(Numbers in parentheses are standard errors)

"Threshold" is an ordinal regression equivalent of the OLS intercept

Mid-Atlantic=NY, NJ, PA; East North Central=WI, IL, IN, MI, OH; West North Central=MN, IA, MO, ND, SD, NE, KS; South Atlantic=DE, MD, WV, VA, NC, SC, GA, FL, DC; East South Central=KY, TN, AL, MS; West South Central=AR, OK, LA, TX; Mountain=MT, ID, WY, NV, UT, CO, AZ, NM; Pacific=WA, OR, CA, AK, HI; New England (excluded category)=ME, VT, NH, MA, CT, RI

(6=central city of 12 largest SMSAs, 5=central city of the remainder of the 100 largest SMSAs; 4=suburbs of 12 largest SMSAs, 3=suburbs of the remaining 100 largest SMSAs, 2=other urban, counties having towns of 10 K or more; 1=other rural, counties having no towns of 10 K or more); region (with eight dummies for Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific, with New England as the reference category; see Table 1 legend for specific states in each region); and survey year.

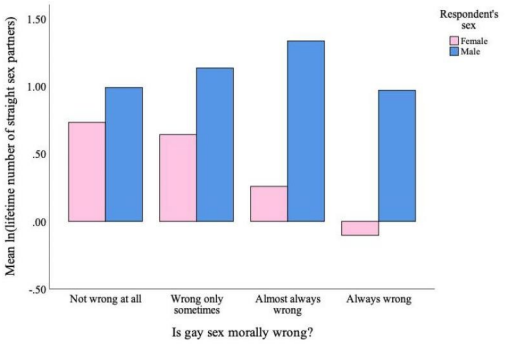

Fig. 1 Mean ln(lifetime number of opposite-sex partners) by homophobic attitude

Results

Table 1 presents the results of the ordinal regression analysis. Consistent with the prediction derived from the evolutionary theory of female sexual fluidity, unrestricted sociosexual orientation significantly decreases homophobia among women ($b = -0.079$, $p < .001$). However, contrary to the prediction, sociosexuality is not significantly associated with homophobia among men ($b = -0.028$, $p = .252$).

Figure 1 presents the bivariate association (without any controls) between sociosexual orientation and homophobia, separately by sex. It shows that there is a monotonically negative association among women, where more homophobic women have had fewer heterosexual sex partners in life. The same association is inconsistent and nonmonotonic among men.

The effects of all control variables are consistent with previous research (Herek, 2009; Kanazawa, 2012), and they are the same for both sexes, with the possible exception of region of residence. It is interesting to note that women in all regions of the US are significantly, consistently, and strongly more homophobic than women in New England, when the effect of the region of residence is much weaker and less consistent among men (although no associations are in the opposite direction). I am not aware of any potential explanation for this sexually dimorphic pattern.

Discussion

While previous research has documented sociocultural correlates of homophobia (Herek, 2009; Herek & McLemore, 2013), the results of the present study show that there may also be genetic/biological determinants. An analysis of the GSS data confirms the prediction derived from the evolutionary theory of female sexual fluidity (Kanazawa, 2017), which posits that women do not have sexual orientations in the same sense as men do, and instead women's apparent sexual orientation is a function of their sociosexual orientation. Consistent with the prediction, sociosexually unrestricted women, who have had a larger number of male partners, were significantly less homophobic than sociosexually restricted women, who have had a smaller number of male partners, possibly because sociosexually unrestricted women more frequently find themselves sexually attracted to women. However, contrary to the prediction, men's sociosexuality was not significantly associated with homophobia. This particular result was consistent with an earlier finding by Nagoshi et al. (2008).

One possible explanation for this unexpected finding is that, while sociosexually unrestricted men may be homophobic toward gay men, as predicted, they may simultaneously be more favorable toward lesbians, because such men, who have a larger number of female sexual partners, may have benefited from sexual activities and relationships among their cowives during human evolutionary history (Kanazawa, 2017). Their negative attitude toward gay men and positive attitude toward lesbians may cancel out each other in an overall measure of homophobia that refers to both men and women.

The current practice in sexuality research is to differentiate between sex and gender. Traditionally, however, evolutionary psychology has mostly focused on biologi-

cal sex, and has not tended to make a clear distinction between sex and gender. In my discussion of prior research, I have adopted the authors' own use of the terms and concepts to present accurate descriptions of the past literature.

A potential criticism of my contention that women are evolutionarily designed to be sexually fluid is the relatively low incidence of same-sex identity, behavior and attraction. If women are evolutionarily designed to be sexually fluid, why do most (or all) of them not experience same-sex attraction?

One possibility may be that the activation of evolved psychological or physiological mechanism often requires environmental triggers, and if the environment lacks the appropriate triggers, the evolved mechanism may never be activated. A physiological example may illustrate this point. Human beings (and other related species) have an evolved physiological mechanism to develop calluses on their hands if they use their hands in repeated activities involving friction. Every human being has this evolved mechanism to develop calluses on their hands. Yet, in a representative sample of Americans, very few individuals have calluses on their hands, because few individuals today engage in manual activities that cause calluses to develop on their hands. Most people work in offices using computers, not as farmers or coal miners, let alone hunter-gatherers. The necessary environmental trigger for callus development is absent in most contemporary Americans' lives, so they do not develop calluses on their hands, even though every single one of them has an evolved physiological mechanism for it. Similarly, even if all women are evolutionarily designed to be sexually fluid in order to reduce tension and conflict inherent in polygynous marriage, they may not develop same-sex attraction if the necessary environmental triggers are missing. In this case, one of the crucial environmental triggers might be polygynous marriage and the presence of cowives in the household, which most American women do not experience. There is indeed ethnographic evidence that the presence of cowives often does trigger same-sex attraction, even in the US (Kanazawa, 2017, pp. 1261–1264).

The empirical results presented above provide further support for the evolutionary theory of female sexual fluidity. The theory, if true, has some important scientific and societal implications. In the history of psychiatry and sex research over the past century, there have been some significant setbacks. Half a century ago, most psychiatrists and scientists maintained that homosexuality was a form of mental illness, and it was the official position of the American Psychiatric Association until 1973 (Drescher, 2015; Spitzer, 1981). Today very few psychiatrists and scientists believe that homosexuality represents mental illness. A quarter of a century ago, the practice of reparative or conversion therapy to "cure" homosexuality was widely accepted by most psychiatrists and scientists. Today few psychiatrists or scientists believe homosexuality can be so cured; they instead recognize the significant harm done to patients who undergo such therapy (Fjelstrom, 2013). The practice is declared illegal in an increasing number of states in the US (McMurchie, 2014), and expressly condemned by a large number of academic, scientific and medical associations, such as the American Medical Association, the American Psychological Association, and the American Psychiatric Association (https://www.hrc.org/resources/policy-and-position-statements-on-conversion-therapy). The evolutionary theory of female sexual fluidity suggests that we may now face an equally significant setback. The currently

universally and unquestioningly held belief that women have sexual orientations in the same sense as (and *because*) men do—because it is the psychiatrists' and scientists' unwavering political conviction that men and women are and must be identical or at least biologically equivalent—may follow the course of the earlier (and then equally universally and unquestioningly held) beliefs in the history of psychiatry and science.

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