RUNNING HEAD: SEX DIFFERENCE IN SEXUAL AROUSAL

A Sex Difference in the Specificity of Sexual Arousal

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Abstract

Sexual arousal is category-specific in men; heterosexual men are more aroused by female than by male sexual stimuli, while homosexual men show the opposite pattern. There is reason to believe that female sexual arousal is altogether differently organized. We assessed genital and subjective sexual arousal to male and female sexual stimuli in women, men, and postoperative male-to-female transsexuals. In contrast to men, women showed little category-specificity on either genital or subjective measures. Both heterosexual and homosexual women experienced strong genital arousal to both male and female sexual stimuli. Transsexuals showed a category-specific pattern, demonstrating that category specificity can be detected in the neovagina using a photoplethysmographic measure of female genital sexual arousal. In a second study, we showed that our female results are unlikely to be explained by ascertainment biases. These findings suggest that sexual arousal patterns play a fundamentally different role in male and female sexuality.

Keywords: Sexual orientation, sexual arousal, women's sexuality, homosexuality, vaginometry, phallometry, photoplethysmograph, male-to-female transsexual, autogynephilia.

A Sex Difference in the Specificity of Sexual Arousal

Male sexual arousal is category-specific; men show their greatest sexual arousal to the categories of people with whom they prefer to have sex. With respect to sexual orientation, heterosexual men experience much higher genital and subjective arousal to women than to men, while homosexual men show an opposite pattern (Freund, 1963). Category specificity is sufficiently reliable for forensic practitioners to use genital sexual arousal patterns to assess sexual preferences among men who are strongly motivated to conceal their preferences: Examples include pedophiles (e.g., Quinsey & Lalumière, 2001), in whom greatest sexual arousal occurs to sexual stimuli depicting prepubescent children. Moreover, sexual arousal patterns appear to be an important source of information for men as they formulate their sexual identities in adolescence (Bell, Weinberg, & Hammersmith, 1981; Savin-Williams & Diamond, 2000).

Several lines of evidence suggest that, as compared with men's, women's sexual preferences may not be as strongly related to sexual arousal patterns. First, sexual arousal appears to be a less important signal of nonheterosexual orientation in women than in men (Savin-Williams & Diamond, 2000). Second, female sexuality seems generally to be more flexible than male sexuality, with greater intra-individual variation in preferences, behavior, attitudes, and responsiveness to cultural influences (Baumeister, 2000). Baumeister (2000) argued that this partly reflects a weaker female sex drive. Greater flexibility in female sexual preferences may also be reflected a less category-specific female sexual arousal pattern.

The most direct evidence that female sexual arousal is less category-specific comes from a study by Laan, Sonderman, and Janssen (1995). They measured the subjective and genital arousal patterns of self-identified lesbian and heterosexual women to films depicting male-female and female-female sex. No effect for self-identification (as lesbian or heterosexual) was observed for either genital or subjective arousal: Both lesbians and heterosexual women experienced their highest genital and subjective arousal to male-female films. Although these findings are intriguing, there are interpretive difficulties. First and foremost, the erotic stimuli did not include a pure male stimulus. The literature on male sexual arousal suggests that the most effective contrast is that between arousal to an intense, purely female stimulus (typically a film of female-female sex) versus arousal to an intense, purely male stimulus (typically a film of male-male sex; Mavissakalian, Blanchard, Abel, & Barlow, 1975; Sakheim, Barlow, Beck, & Abrahamson, 1985). Erotica depicting male-female couples fails to elicit differences in sexual arousal patterns because they contain both men and women, thus are both male and female sexual stimuli. Second, it is unclear whether the sexual orientation (as opposed to the sexual identity; see Mustanski, Chivers, & Bailey, in press) of the self-identified lesbians was fully homosexual or bisexual. For example, Rust (1992) found that 30% of women who identify as lesbian reported some attraction to men. A more specific measure of sexual orientation, one assessing degree of attraction to men and women would have been preferable for classifying participants. Third, although women's genital sexual arousal can be objectively measured by photophethysmography (e.g., Janssen, 2002; Laan & Everaerd, 1995), research supporting the construct validity of photoplethysmographic measures is less abundant than for male phallometric measures

(Janssen, 2002). Before researchers can conclude that women do not have a category-specific sexual arousal pattern, it would be desirable to demonstrate that vaginal measures are, in principle, capable of detecting such a pattern.

In the present study, we examined whether female sexual arousal is category specific. We assessed sexual arousal patterns to male versus female erotic stimuli in three samples: women, men, and postoperative male-to-female transsexuals. Including male participants allowed us to compare male and female arousal patterns and to demonstrate that our stimuli were capable of eliciting a category-specific pattern of sexual arousal in men. Including male-to-female transsexuals allowed us to determine whether differences in arousal patterns between men and women merely reflect differences in the way that genital arousal is measured in men and women, or are due to a true sexual dimorphism.

STUDY 1

Method

Participants

We recruited heterosexual and homosexual men and women via advertisements in an alternative urban newspaper (*Chicago Reader*) and in publications from the gay and lesbian community. Participants were 38 men and 52 women. Mean ages were 32.1 (*SD* = 6) and 26.4 (*SD* = 6.5) years for the male and female samples, respectively. Transsexual participants were recruited through contacts in the transsexual community.

The mean age of the transsexual sample was 42.9 (*SD* = 10.5) years. All participants were offered financial compensation for participation.

Measures

Sexual Orientation

We used the Kinsey Sexual Fantasy Scale (Kinsey, Pomeroy, Martin & Gebhard, 1953) to assess the sexual preferences of all participants. Only individuals indicating exclusive or nearly exclusive sexual feelings for either women or men during adulthood were included in the analyses.

It was possible to recruit male-to-female transsexuals with preferences for male or female sexual partners because there are two distinct subtypes of male-to-female transsexuals: One type is exclusively attracted to men, while the other is primarily sexually attracted to women (Blanchard, 1989, 1992).

Audiovisual Stimuli

Films of sexual stimuli elicit greater genital and subjective arousal than do either slides or audiotapes (Heiman, 1977; McConaghy, 1999). We chose films to ensure that participants experienced substantial genital arousal responses, thus to avoid floor effects. We used films of male-male and female-female sex because men's sexual orientation is most reliably assessed by comparing penile responses to these stimuli (Mavissakalian *et*

al., 1975; Sakheim *et al.*, 1985). Although male-female stimuli are less discriminating, we included them to assess whether heterosexual participants' arousal to purely male or female stimuli might be diminished by the fact that purely male or female stimuli depict homosexual acts, which are stigmatized. If so, arousal to male-female stimuli should exceed that to homosexual stimuli.

Sexual stimuli consisted of six, two-minute films with sound. Content varied by the sex of the actors (male or female) and the type of sexual activity depicted (oral or penetrative sex). Each participant saw films featuring female-female oral sex, female-female penetration (with a strap-on dildo), male-female cunnilingus, male-female penetration (penile-vaginal), male-male fellatio, and male-male penetration (penile-anal). Thus, sex of actors and type of sexual activity were independent. Neutral stimuli, depicting landscapes or fauna, were included to compare genital and subjective responses to sexual and non-sexual stimuli. There were two exemplars of each experimental stimulus category, and all stimuli were presented in random order. An 11-minute adaptation film (depicting sexually neutral scenes accompanied by relaxing music) was used to assess baseline arousal.

Apparatus

All psychophysiological data were continuously recorded and digitized during baseline and stimulus conditions using MP100 Biopac Photoplethysmographic Assessment software. The penile plethysmograph signal was transformed into millimeters of circumference change from baseline. The vaginometric signal, vaginal pulse

amplitude, was measured as peak-to-trough amplitude for each vaginal pulse. The AC signal from the lever was transformed into percent deflection.

Phallometry

Male genital arousal was assessed with penile plethysmography (Janssen, 2002) using a mercury-in-rubber strain gauge to measure changes in the circumference of the penis as erection developed. The signal was low-pass filtered (to .5 Hz) and digitized (40 Hz). The gauge was calibrated over six, 5mm steps in between sessions (Janssen, 2002).

Vaginometry

Women's and male-to-female transsexuals' genital arousal was assessed via change in vaginal pulse amplitude (VPA), a measure of vaginal vasocongestion specific to sexual response (Laan, Everaerd, & Evers, 1995), using a vaginal photoplethysmograph (Geer, Morokoff, & Greenwood, 1974). The VPA signal was band-pass filtered (.5 Hz to 10 Hz) and digitized (40 Hz).

The neovagina of a postoperative male-to-female transsexual consists of a lined neovaginal cavity within the perineum. The lining is typically constructed from a penile skin flap, although it is sometimes constructed from scrotal skin, a segment of intestinal tissue, or a skin graft from another location (Karim, Hage, & Mulder, 1996). The neovagina is surrounded, in whole or in part, by the highly vascular tissue of the male pelvis, including periurethral erectile tissue that is likely homologous to the erectile tissue surrounding the urethra in biologic females. Although a prior study found detectable

blood flow in the neovaginal lining (Schroder & Carroll, 1999), this is the first attempt to examine whether blood flow increases with psychological sexual stimulation.

Subjective arousal

Subjective sexual arousal was assessed continuously via self-report using a lever moving through a 180° arc (Cerny Response Apparatus); 0° represented no subjective sexual arousal and 180° the subjective sexual arousal associated with orgasm. The signal was low-pass filtered (to .5 Hz) and digitized (40 Hz).

Procedure

Participants were assessed individually in a dimly lit, private room, seated in a comfortable recliner with a television monitor five feet away. The ambient air temperature was maintained at 25°C. Participants received instruction on how to use the genital gauge, and they fitted the gauge themselves. Participants watched the adaptation film and then the experimental stimuli, separated by return-to-baseline intervals. Participants completed distraction tasks during inter-stimulus intervals and, after sexual arousal assessment, completed questionnaires assessing sexual orientation, sexual experience, masturbation frequency, and orgasmic capacity.

Data reduction

Both genital and subjective arousal measures were averaged, separately and within stimulus-category, yielding mean genital and subjective arousal for responses to female-female, male-female, and male-male sexual stimuli. Mean scores were standardized within-subjects (i.e., ipsatized) because within-subjects standardization appears to eliminate the effects of idiosyncratic variation in responsiveness (Harris, Rice, Quinsey, & Chaplin, 1992). An index of arousal to male relative to female sexual stimuli, the male-female contrast, was computed by subtracting arousal to female-female stimuli from arousal to male-male stimuli; positive scores indicated greater arousal to male stimuli and negative scores indicated greater arousal to female stimuli. Genital and subjective arousal to females was computed as the difference between arousal to female-female and to neutral stimuli; genital and subjective arousal to males was computed analogously.

Because not all participants produce a discernible genital response to sexual stimuli, we used an inclusion criterion of a minimum difference of 0.5 standard deviations between maximum genital arousal to either male or female stimuli and to the neutral stimulus for all three samples. Additionally, based on recommendations of other researchers (ATSA Professional Issues Committee, 2001), we excluded men whose maximum response to either male or female stimuli did not exceed their response to neutral stimuli by at least two millimeters. These criteria excluded 23 of 69 men, 9 of 52 women, and none of the 11 transsexuals. The difference in rates of exclusion was

significant (Fisher's Exact Test, p=.02), probably owing to differences in the sensitivity of the penile plethysmograph and the photoplethysmograph. The exclusion rate in our male sample (approximately 1 in 3) is typical of phallometric assessments using circumferential measurement (e.g., Kuban, Barbaree & Blanchard, 1999). Inclusion of non-responders did not substantially affect the significance or direction of results.

Results

The relation between sexual orientation and patterns of genital sexual arousal to male versus female stimuli, by sample, is presented in Figure 1. Table 1 includes each sample's correlations among dichotomous, self-reported sexual preference, genital male-female contrast, and subjective male-female contrast. In general, the relation between self-reported preference and sexual arousal pattern was much weaker for women than for men and transsexuals, whose results were similar to each other's. For example, all transsexuals and nearly all men had stronger genital arousal to their preferred sex, but 37% of women did not. The correlation between self-reported preference and genital arousal was significantly lower for women than for men (z=5.0, p<.001) and for transsexuals (z=8.9, p<.001). The analogous correlations for subjective arousal were also lower, although the difference was significant only for men (z=5.3, p<.001; for transsexuals, z=1.1, p=.27). Table 1 also shows that the association between genital and subjective arousal was lower for women compared with men (z=3.9, p<.001), replicating a well-established sex difference (Laan & Everaerd, 1995).

A plausible concern is that the pure sexual stimuli depict homosexual interactions, which may be unusual or repugnant stimuli for some heterosexual people. Thus, heterosexual peoples' responses to the pure male or female sexual stimuli might underestimate their arousability to members of the opposite sex. If this is true, then heterosexual participants might be expected to respond more strongly to the stimuli depicting male-female acts than to pure opposite-sex stimuli depicting same-sex acts. With respect to genital arousal, however, this did not happen (Figure 2). Heterosexual men were more aroused, genitally and subjectively, by films depicting female-female sex acts than by films depicting male-female sex acts, $t(21)=3.0$, $p<.01$, $t(21)=2.9$, $p<.01$, respectively. Similarly, heterosexual women were slightly, but not significantly, more genitally aroused by films depicting male-male sex acts than by films depicting male-female sex acts, $t(22)=.9$, $p=.4$. With respect to subjective arousal (Figure 3), heterosexual women did report a strong preference for male-female stimuli: Their subjective sexual arousal to the male-female stimuli was approximately three times greater compared with subjective arousal to the male-male male stimuli, $t(22)=4.8$, $p<.001$.

STUDY 2

Because many individuals, particularly women, are reluctant to be assessed genitally (Wolchik, Spencer, & Iris, 1983), it was impossible to recruit a random sample for Study 1. Therefore, it is plausible that the bisexual arousal pattern observed in women was influenced by ascertainment bias. Several studies have examined ascertainment bias

in female sexual psychophysiological research (e.g., Morokoff, 1986; Wolchik, Braver, & Jensen, 1985; Wolchik, Spencer, & Iris, 1983). Compared with refusers, volunteers for sexual arousal research masturbate more often, have more experience with sexual materials, and have had more sex partners. The fact that volunteers differ from refusers does not, however, necessarily mean that volunteers do not represent the general population with respect to their patterns of sexual arousal: That is a separate empirical question. If differences between volunteers and refusers are relevant to arousal patterns, then variables related to cooperation should be correlated with indices of sexual arousal. In Study 2, we examined whether the female results of Study 1 were plausibly due to ascertainment bias. We invited women to participate in a study of genital sexual arousal and examined the differences between women who refused to participate with those who agreed to participate on several variables identified in previous research as potentially relevant. We then correlated these variables with sexual arousal patterns among women who participated in the sexual arousal study. We also sought to replicate the non-specific pattern of arousal observed in heterosexual women from Study 1.

Method

Participants and Procedure

We asked 232 women from undergraduate psychology classes to attend an information session describing the sexual arousal study and 104 attended. After hearing the details of the study, these women completed an anonymous questionnaire assessing

their sexual experiences and their interest in participating in the arousal study. Of the 104 women who attended the information session, 57 stated they were interested and 47 stated they were disinterested in participating in the study. Of the 57 women who indicated an interest during the information session, 29 participated in the sexual arousal study. (Six of these women were not included in the analyses because they either did not meet a minimum response criterion (see Study 1 methods for details) or reported a non-heterosexual sexual preference.). The 29 participants in the arousal study were among the 57 women who expressed interest during the information session. Thus, arousal study participants completed sexual experience questionnaires twice. Participant anonymity precluded knowledge of which questionnaires during the information session came from women who would eventually participate in the arousal study.) All other remaining methods and procedures were identical to those described in Study 1 for females.

Results

The 23 heterosexual students who participated in the sexual arousal study were significantly younger (M = 20.2, SD = 1.0 vs. M = 26.4, SD = 6.5, respectively), F (1, 22) = 20.7, p<.05, and had significantly fewer male sexual partners (M = 2.5, SD = 1.9 vs. M = 7.5, SD = 7.9, respectively), F (1, 22) = 8.5, p<.05, than the heterosexual women from Study 1. All women reported almost exclusively sexual feelings toward men; mean Kinsey Sexual Fantasy score was 0.1 (SD = .1).

The heterosexual students showed the same nonspecific arousal pattern (Figure 4) that we found in the community sample of women. Although all Study 2 participants

preferred male sex partners, their genital arousal was 19% higher to female stimuli than to male stimuli, t (22)=1.9, p=.07, and their subjective arousal to female stimuli was twice that to male stimuli, t(22)=4.9, p<.001. Similar to the heterosexual female participants from Study 1, students were subjectively most aroused to the films depicting heterosexual acts, compared with male stimuli, t (22)=8.4, p<.001, and compared with female stimuli, t(22)=7.1, p<.001. The strong subjective preferences for male-female stimuli did not translate into strong genital differences. Genital arousal to male-female stimuli was only 22% higher than to the male-male stimuli, t (22)=2.1, p=.04, and only 3% higher than to female-female stimuli, t(22)=0.3, p=.76.

Several sexual history variables predicted willingness to participate in a study requiring genital arousal measurement (Table 2). To explore whether differences between arousal study participants and refusers influenced arousal patterns, we examined correlations between these variables and the arousal response contrasts (Table 3). The correlations were generally small and revealed no clear pattern. Three significant correlations showed that women with a higher frequency of orgasm during masturbation experienced higher genital arousal to male sexual stimuli but higher subjective arousal to female stimuli, and were more subjectively aroused to female than to male sexual stimuli. Thus, there is no convincing evidence that selection biases provided a misleading picture of female sexual arousal patterns.

Discussion and Conclusions

Our findings suggest that women have a nonspecific pattern of sexual arousal that is quite different from men's arousal highly category-specific pattern. Men and

postoperative male-to-female transsexuals preferring men showed substantially higher subjective and genital responses to male versus female stimuli; men and transsexuals preferring women showed the opposite pattern. In contrast, women's subjective and genital responses were only modestly related to their preferred category: Heterosexual and lesbian women experienced genital and subjective arousal to both male and female stimuli. Our findings suggest that this result is not plausibly attributable to volunteer bias: Variables that distinguished female volunteers from refusers were unrelated to response patterns.

The difference between men's and women's sexual arousal patterns is unlikely to be due to measurement artifacts, because women and transsexuals had different arousal patterns, despite being measured by the same apparatus, and because transsexuals and men had similar arousal patterns despite being measured by a different apparatus. Other evidence for a fundamental difference between women and men's sexual arousal patterns comes from their patterns of subjective sexual arousal. Regardless of sexual orientation, women reported more arousal to female versus male stimuli, on average, although this difference was not significant for heterosexual women. In contrast, men and transsexuals reported being more aroused by sexual stimuli corresponding to their preferred sex.

Although our results suggest that women have a bisexual arousal pattern to sexual stimuli, they do not necessarily suggest that women are generally bisexual. For example, despite their capacity to become sexually aroused by both male and female sexual stimuli, women do not have higher rates of homosexual sexual activity than men (Laumann, Gagnon, Michael, & Michaels, 1994). The large majority of women in contemporary western societies have sex exclusively with men (Bajos et al., 1995;

Laumann et al., 1994). Similarly, the large majority of women in those societies claim to be much more attracted to men than to women (Bailey, Dunne & Martin, 2000; Laumann et al., 1994). A self-identified heterosexual woman would be mistaken to reconsider her sexual identity because she became aroused watching female-female erotica; most heterosexual women experience such arousal. A self-identified heterosexual man who experienced substantial arousal to male-male male erotica, however, would be statistically justified in reconsidering his sexual identity.

Sex differences in the development (Bell et al., 1981; Diamond, 2000; Savin-Williams & Diamond, 2000) and expression (Baumeister, 2000) of same-sex attraction support our contention that the relation between sexual arousal and sexual orientation differs fundamentally between women and men. Diamond (2003) has suggested that feelings of romantic attachment may influence women's sexual identity more than men's. In the context of past research, our results suggest that patterns of sexual arousal to men versus women do not constrain women's sexual behavior, feelings, or identity to nearly the degree that they constrain men's.

Our results cannot directly address whether the sex difference in category specificity of sexual arousal is innate or learned. Our finding that male-to-female transsexuals show a male-typical pattern, however, helps to rule out some possible explanations. Women's non-specific pattern might not be fully explained by their lack of visible genitalia because transsexuals show a category-specific pattern despite a similar lack. Transsexuals reject the male role into which they were socialized yet continue to show the category-specific pattern of arousal that is characteristic of their genetic sex. Moreover, the biological or social factors that cause some transsexuals to be the most

feminine of males (Bailey, 2003) do not affect their male-typical pattern of sexual arousal. This is consistent with other evidence that psychosexual differentiation is multidimensional (e.g., Bailey, 2003; Bailey, Gaulin, Agyei, & Gladue, 1994; Goy, Bercovitch & McBrair, 1988).

One potential methodological limitation of our study concerns the nature of the sexual stimuli we used. The "pure" sexual stimuli depicted homosexual acts, which some heterosexual people may find upsetting or even offensive. Although the comparison of arousal to homosexual versus female-male stimuli suggested that aversion to homosexual acts did not greatly diminish genital arousal, it would be desirable to replicate our study using sexual stimuli that did not include homosexual depictions. Films of individuals engaged in sexual acts, such as masturbation, would avoid this interpretative difficulty while retaining the sexual intensity necessary to elicit sufficient sexual arousal.

A second limitation is our assumption that participants did not consciously manipulate their genital responses. Past research has demonstrated that some men can control their genital arousal when they are motivated to do so (Adams, Motsinger, McAnulty, & Moore, 1992; Freund, 1963). Could men's category-specific sexual arousal be due to conscious inhibition of erection to non-preferred sexual stimuli? Although the design of our study cannot rule out this possibility, we think that it is unlikely for several reasons. First, concern about suppression of sexual arousal has mainly focused on situations in which men would be highly motivated to hide sexual arousal, such as assessment for pedophilia. Even in that context, however, category–specific sexual arousal usually occurs (Blanchard, Klassen, Dickey, Kuban & Blak, 2001). Second, although heterosexual male participants might be motivated to suppress sexual arousal to

the male stimuli, (due to the stigmatization of homosexuality), gay men would not be similarly motivated to suppress arousal to female stimuli; yet, gay men's sexual arousal was also quite specific. Third, research on the conscious manipulation of genital sexual arousal has shown that men are able to reduce, but not increase, the magnitude of their erections. Neither heterosexual nor homosexual men were able to increase erections to non-preferred sexual stimuli, even when motivated to do so (Adams et al., 1992). This suggests that, under typical conditions, men are not suppressing their genital responses to non-preferred stimuli; if they were, they would also increase genital arousal, when motivated to do so, by ceasing suppression efforts.

The sex difference reported here has important implications for future conceptualizations of women's sexuality. Sexual arousal, especially genital sexual arousal, is likely to play a much smaller role in women's sexual orientation development than it does in men's. Female sexuality, in general, may be more motivated by extrinsic factors, such as the desire to create or maintain a romantic relationship, than intrinsic factors, such as genital sexual arousal (Baumeister, Catanese, & Vohs, 2001). This basic sex difference in the role of sexual arousal processes highlights the need to use distinct models when investigating the development and expression of female or male sexuality.

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Footnote

1. Data from six participants were not included in the analysis; four women did not meet the response criterion (see Study 1 methods for details), and two women reported sexual attraction to both men and women.

Table 1. Within-group correlation matrices among genital arousal and subjective arousal contrasts and self-reported preference, by group. Ranges represent 95% confidence intervals.

	Genital Arousal Contrast	Subjective Arousal Contrast
	Women (N=43)	
Subjective Arousal Contrast	.48 .21—.68	
Prefer Men Versus Women	.26 -.04—.52	.42 .13—.64
	Men (N=46)	
Subjective Arousal Contrast	.88 .79—.93	
Prefer Men Versus Women	.88 .79—.93	.92 .86—.96
	Transsexuals (N=11)	
Subjective Arousal Contrast	.67 .11—.90	
Prefer Men Versus Women	.96 .84—.99	.70 .17—.92

Table 2. Sexual experience variables significantly discriminating between women expressing varying levels of interest in study participation.

		Not Interested, Information Session (*n*=47)	Interested, Information Session (*n*=57)	Participants, Sexual Arousal Study (*n*=29)	*F (p)*
Number of male sexual partners (Penile-vaginal intercourse)	*M*(*SD*) Range	0.5 (.7) 0 – 2	2.2 (2.3) 0 - 12	2.6 (2.5) 0 - 11	14.2 (<.001)
Masturbation frequency, per month	*M*(*SD*) Range	1.7 (3.2) 0 - 15	5.8 (5.4) 0 - 20	6.8 (5.4) 0 - 20	13.1 (<.001)
Frequency of orgasm during masturbation[a, b]	*M*(*SD*) Range	4.4 (2.5) 1 - 7	5.7 (1.9) 1 - 7	5.4 (2.1) 1 - 7	3.1 (.051)
Preferred frequency of sex[c]	*M*(*SD*) Range	3.0 (1.3) 1 - 6	3.8 (1.1) 1 - 6	3.9 (1.0) 1 - 6	6.0 (.003)
Frequency of erotica use[d]	*M*(*SD*) Range	1.9 (1.1) 1 - 5	2.9 (1.2) 1 - 6	3.3 (1.1) 1 – 5	15.6 (<.001)

[a] *n*=21; *n*=48; *n*=25, respectively. These values represent women who reported masturbating at least once in a 30-day period.
[b] Scale: 1= never; 2 =>20%; 3 =20-40%; 4 =40-60%; 5 = 60-80%; 6 = 80-99%; 7 = 100%.
[c] Scale: 1 = <1/week; 2 = 1/week; 3 = 2/week; 4 = 3 to 5/week; 5 = daily; 6 = > 1/day.
[d] Scale:1 = never; 2 = watched once; 3 = watched 2 times; 4 = 1/year; 5 = 1/month; 6 = 1/day.

Table 3. Correlations between potentially relevant sexual experience variables and arousal contrasts for study participants.

	Genital Arousal Contrast				Subjective arousal			
	M-M v. N	F-F v. N	F-M v. N	M-M v. F-F	M-M v. N	F-F v. N	F-M v. N	M-M v. F-F
Number of male partners (Penile-vaginal intercourse)	-.31	.18	.12	-.31	.13	.07	-.27	.07
Masturbation frequency, per month	.23	-.31	.26	.35	.01	-.08	.24	.05
Frequency of orgasm during masturbation[a]	.49 *	-.18	.03	.42	-.19	.59**	.07	-.45*
Preferred frequency of sex	.04	-.04	.11	.05	.11	.10	-.16	.04
Frequency of erotica use	.26	.02	.03	.14	.35	.05	.05	.25

[a] df=19

M-M = Male-Male stimulus; F-F = Female-female stimulus; F-M = female-Male stimulus; N = Neutral stimulus

Figure Captions

Figure 1. Difference between genital arousal to male versus female stimuli. The center horizontal line of each distribution represents the mean, and the other lines represent the boundaries of the 95% confidence interval. Points represent individual participants.

Figure 2. Mean genital arousal (and SE) to different categories of sexual stimuli, separately by sample and self-reported preference. Units are within-subject standard deviations.

Figure 3. Mean subjective arousal (and SE) to different categories of sexual stimuli, separately by sample and self-reported preference. Units are within-subject standard deviations.

Figure 4. Mean genital and subjective sexual arousal (and SE) to different categories of sexual stimuli in heterosexual female students (n=23).

Figure 1.

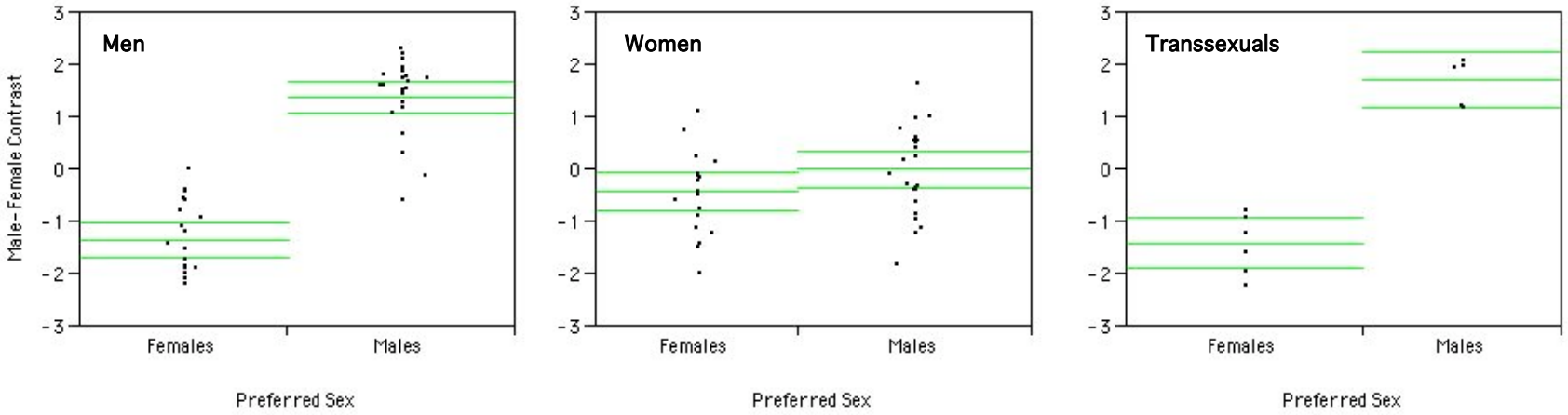

Men
Women
Transsexuals
Male-Female Contrast
3
2
1
0
-1
-2
-3
Females
Males
Preferred Sex

Figure 2.

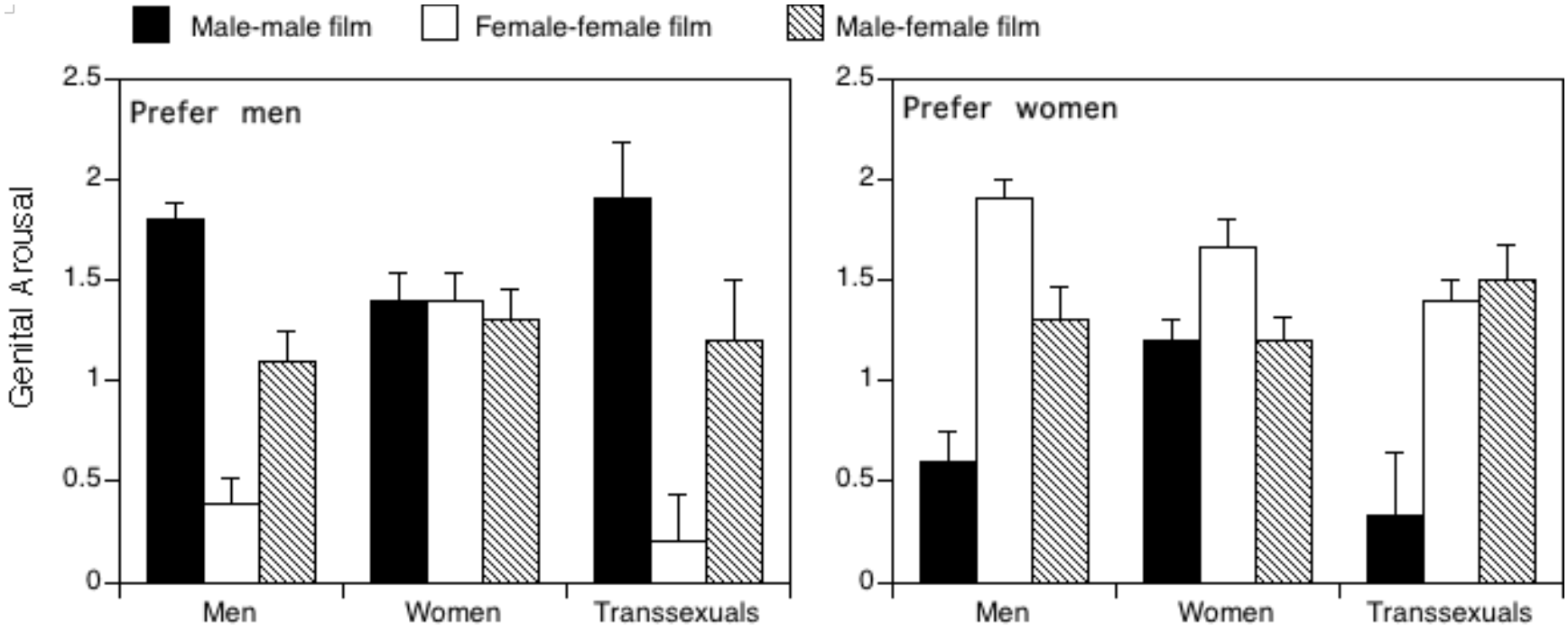

Male-male film
Female-female film
Male-female film
Genital Arousal
Prefer men
Prefer women
2.5
2
1.5
1
0.5
0
Men
Women
Transsexuals

Figure 3.

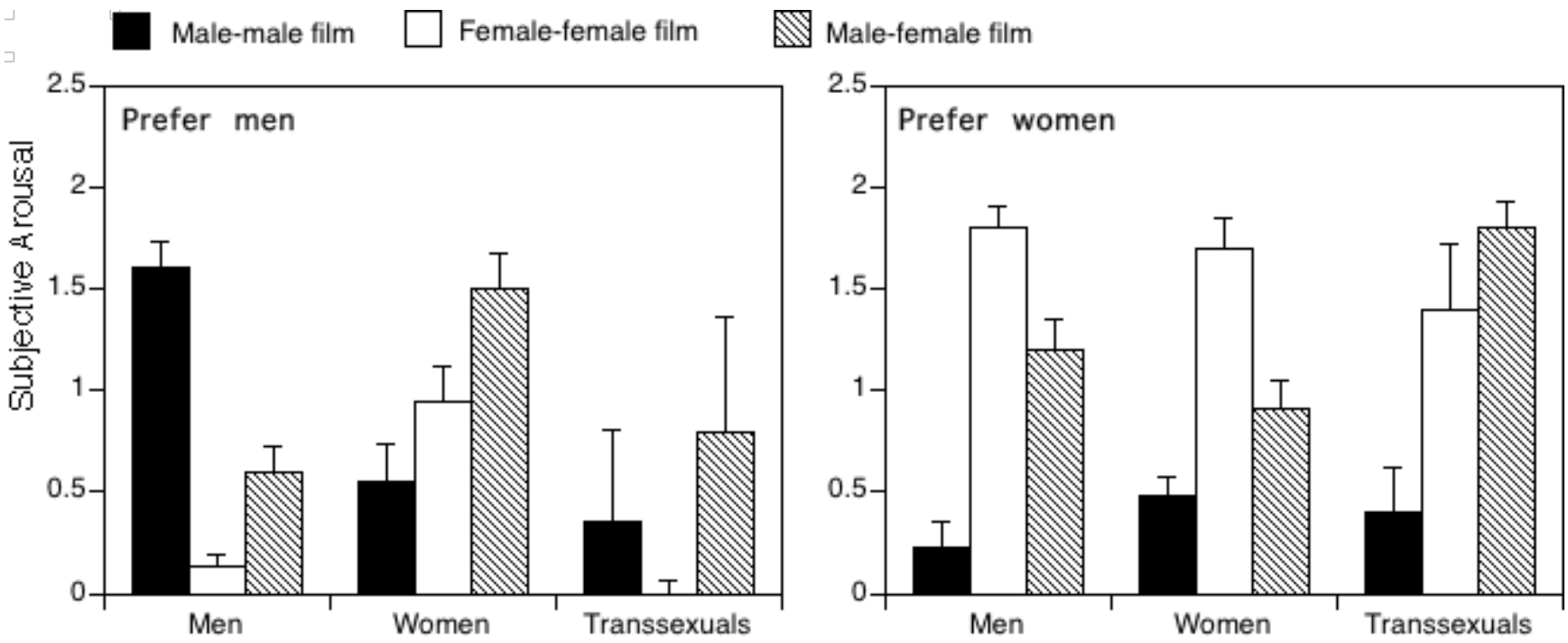
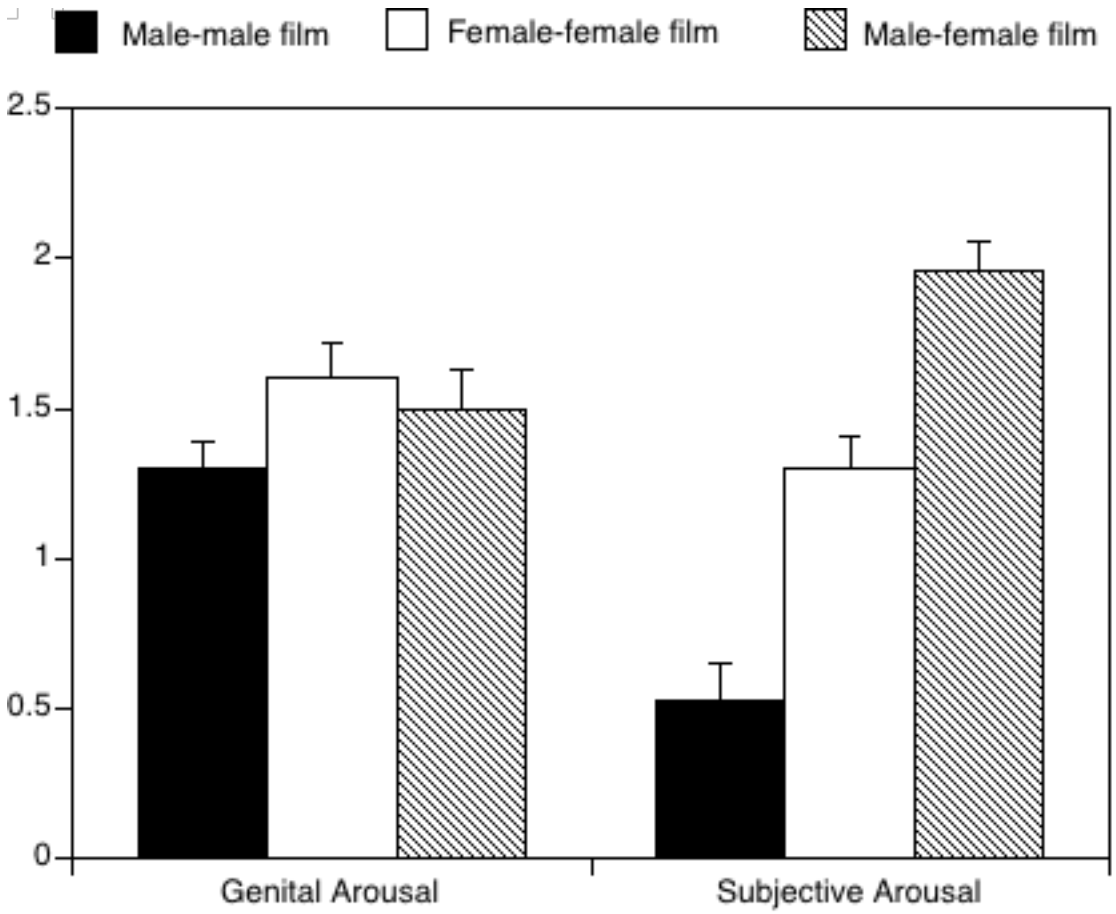

Male-male film
Female-female film
Male-female film
Subjective Arousal
Prefer men
Prefer women
2.5
2
1.5
1
0.5
0
Men
Women
Transsexuals

Figure 4.


Male-male film
Female-female film
Male-female film
2.5
2
1.5
1
0.5
0
Genital Arousal
Subjective Arousal