

Sexual Orientation of Female-to-Male Transsexuals: A Comparison of Homosexual and Nonhomosexual Types

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Homosexual and nonhomosexual (relative to genetic sex) female-to-male transsexuals (FTMs) were compared on a number of theoretically or empirically derived variables. Compared to nonhomosexual FTMs, homosexual FTMs reported greater childhood gender nonconformity, preferred more feminine partners, experienced greater sexual rather than emotional jealousy, were more sexually assertive, had more sexual partners, had a greater desire for phalloplasty, and had more interest in visual sexual stimuli. Homosexual and nonhomosexual FTMs did not differ in their overall desire for masculinizing body modifications, adult gender identity, or importance of partner social status, attractiveness, or youth. These findings indicate that FTMs are not a homogeneous group and vary in ways that may be useful in understanding the relation between sexual orientation and gender identity.

KEY WORDS: transsexual; female-to-male; sexual orientation; gender identity; mating psychology.

INTRODUCTION

Transsexualism in genetic females has previously been thought to occur predominantly in homosexual women. Clinical presentation by nonhomosexual female transsexuals (i.e., gender dysphoric genetic females who are sexually attracted to males) is extremely rare. Blanchard *et al.* (1987) reported that only 1 of 72 transsexual women seen at a Canadian gender identity clinic was primarily attracted to males. Because these individuals have been so infrequently seen by gender clinics, some researchers have thought that this form of female transsexualism was

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nonexistent or was incorrectly diagnosed homosexual transsexualism (Blanchard *et al.*, 1987). However, researchers and practitioners have begun to investigate nonhomosexual female transsexualism as a valid diagnostic entity (Blanchard, 1990; Blanchard *et al.*, 1987; Clare and Tully, 1989; Coleman and Bockting, 1988; Coleman *et al.*, 1993; Dickey and Stephens, 1995). These authors have typically described nonhomosexual female-to-male transsexuals (FTMs) as gender-dysphoric genetic females who describe themselves as gay or bisexual men and are attracted primarily to (most often gay) men.

Dickey and Stephens (1995) synthesized findings from two case studies of nonhomosexual FTMs and available research data and concluded that nonhomosexual FTMs are characterized by the desire to be homosexual men, attraction to feminine men, interest in sexual activities performed by gay men, sexual fantasies of gay male sex during heterosexual intercourse, and a less extensive history of childhood or adolescent cross-gender identification compared with homosexual FTMs. Contrary to Dickey and Stephen's second conclusion, Blanchard (1989) reported the case of a nonhomosexual FTM who was attracted to masculine as well as feminine men.

Coleman and Bockting (1988) argued that gender identity and sexual orientation are discordant in the case of nonhomosexual FTMs because they have masculine gender identities and role behavior but have a "feminine" sexual orientation (toward men). If this assertion is correct, it would seem useful to examine variables known to differ between nongender dysphoric lesbian and heterosexual women to identify other similarities and differences between homosexual and nonhomosexual FTMs.

In the research reported herein, we gathered information about aspects of sexuality and gender identity that have been empirically related to female sexual orientation. We also studied other traits that past research has suggested may be fruitful in understanding differences between homosexual and nonhomosexual FTMs. Specifically, this study examined FTMs with respect to variables pertaining to gender identity, partner preferences, sexual activities and interests, and body modifications. We begin by briefly reviewing the research examining these variables in heterosexual and lesbian women. We also describe any relevant research on FTMs.

Gender Identity

"Gender identity" refers to one's psychological sense of being male or female, masculine or feminine (Money, 1972). Typically, retrospective accounts of sexual behaviors and feelings of masculinity/femininity have served as indicators of childhood gender identity. Lesbians score as substantially more masculine than heterosexual women on such measures (Bailey and Zucker, 1995). Furthermore, "masculine" lesbians report greater childhood gender nonconforming behavior than nonmasculine lesbians (Bell *et al.*, 1981; Singh *et al.*, 1999).

Few studies have examined childhood gender nonconformity systematically in an FTM sample. Ehrhardt *et al.* (1979) found no difference in the frequency of sex-atypical behaviors (e.g., tomboyish behavior) between lesbians and homosexual FTMs. However, gender identity confusion in childhood, adolescence, and adulthood was absent in the lesbian sample and almost-unanimously reported by the FTM sample. If these retrospective findings are accurate, then cross-gender behavior is not synonymous with cross-gender identity. Steiner and Bernstein (1981) found that all 41 homosexual FTMs in their study reported high levels of childhood gender nonconformity. Coleman *et al.*'s (1993) sample of nine nonhomosexual FTMs reported, during interviews, that their experience of gender dysphoria began in childhood. Coleman and Bockting's (1988) case report of a nonhomosexual FTM also found that this individual had gender atypical interests and activities during childhood. Unfortunately, none of these studies employed controls or compared nonhomosexual and homosexual FTMs.

Investigators have hypothesized that nonhomosexual FTMs would report higher levels of childhood gender nonconformity compared with most genetic females but lower levels compared with homosexual FTMs (Blanchard, 1989; Dickey and Stephens, 1995). Thus we predicted that homosexual FTMs would report significantly higher levels of childhood gender nonconformity than nonhomosexual FTMs. Because gender identity and behavior are not perfectly correlated (Ehrhardt *et al.*, 1979), we also examined the relationship between childhood behavior and identity (the two components of childhood gender nonconformity) and sexual orientation.

Bailey *et al.* (1999) examined adult gender identity in lesbian and heterosexual women using the Continuous Gender Identity Scale, which assesses subjective feelings of masculinity and femininity, and found that lesbians reported more cross-gender identity feelings than heterosexual women. To our knowledge, there have been no empirical studies of adult gender identity comparing homosexual and nonhomosexual FTMs.

We expected that FTMs would report high adult cross-gender identity because FTMs identify themselves as male. However, homosexual FTMs should report more masculine feelings than nonhomosexual FTMs. We also expected that a significant positive relationship would exist between childhood gender nonconformity and adult gender identity, replicating the findings of Bailey *et al.* (1999) with lesbian and heterosexual women.

Partner Preferences

Homosexual FTMs prefer feminine women (Fleming *et al.*, 1984; Steiner and Bernstein, 1981). In contrast, research examining preferences for masculine versus feminine partners in nonhomosexual FTMs is inconsistent. Regarding this issue, Blanchard (1989) asked whether FTMs attracted to effeminate gay men

constitute a distinct subgroup and whether any female gender dysphorics strongly prefer masculine men. The present study examined the partner preferences (i.e., for masculine or feminine partners) of homosexual and nonhomosexual FTMs.

We also investigated whether FTMs of both types prefer homosexual or heterosexual partners. Devor (1997) discussed the partner preference histories of several FTMs: a consistent theme was the interest of these FTMs in partners who desired them as males once they had established a transsexual identity. By definition, the desired partners of FTMs would not include lesbian women or heterosexual men. Based on this definition, we would predict that homosexual FTMs would be more interested in heterosexual versus lesbian women and that nonhomosexual FTMs would express greater interest in gay men versus heterosexual men.

Researchers using an evolutionary perspective have identified several sexually dimorphic partner preferences, including the importance of a partner's physical attractiveness, youth, and status, and, less directly related, sexual versus emotional jealousy. Sexual and emotional jealousy refers to an individual's tendency to experience greater distress at the prospect of a partner being sexually or emotionally unfaithful, respectively. Although this is not a partner preference per se, it does indirectly refer to a preference for a certain type of partner behavior. Bailey *et al.* (1994) reported that both heterosexual and lesbian women rated partner's physical attractiveness and youth as relatively unimportant and reported a tendency toward greater emotional than sexual jealousy. Lesbians were more masculine with regard to partner status, because this was relatively unimportant to them. If these partner preferences are related to gender identity, then FTMs should be similar to men. However, we hypothesized that preferences distinguishing homosexual and heterosexual (nontranssexual) women would also distinguish homosexual and nonhomosexual FTMs.

Sexual Activities/Interests

Lesbian sexual relationships often involve a differentiation of partners' roles as either "top" (active) or "bottom" (passive). "...The top is the person who conducts and orchestrates the episode. . . . The bottom is the one who responds, acts out, makes visible or interprets the sexual initiatives and language of the top" (Newton and Walton, 1984, p. 246). Preference for the active or passive sexual role in lesbians has been related to adult gender identity; "butch" lesbians tend to prefer the active sexual role, while "femme" lesbians preferred the passive sexual role (Bailey *et al.*, 1999; Singh *et al.*, 1999). Furthermore, one study found that lesbians who recalled gender conforming behavior in childhood reported a preference for the passive sexual role (Singh and Vidaurri, 1999). We hypothesized that preference for the passive role would be significantly related to childhood nonconforming behavior and to a continuous measure of adult gender identity. We

also hypothesized that nonhomosexual FTMs would report a passive preference, while homosexual FTMs would report an active preference.

Evolutionary psychologists have also studied sexual interests, such as interest in uncommitted sex and interest in visual sexual stimuli, with respect to both gender and sexual orientation. On average, men are more interested in both casual sex and visual sexual stimuli (Symons, 1979). Bailey *et al.* (1994) found that heterosexual and lesbian women described low levels of interest in uncommitted sex but that lesbians were more masculine in their interest in visual sexual stimuli, which was higher than that of heterosexual women. Furthermore, masculine lesbians express greater enjoyment of visual erotica than feminine lesbians (Singh and VIDAURRI, 1999). Masculine lesbians have reported greater numbers of sexual partners than feminine lesbians or heterosexual women (Singh *et al.*, 1999).

Because these traits are sexually dimorphic and because of the suggestive findings with respect to some of them among nontranssexual women, we predicted that homosexual and nonhomosexual FTMs would report sexual interests that are analogous to those of lesbian and nontranssexual heterosexual women. Specifically, we hypothesized that homosexual FTMs, compared with nonhomosexual FTMs, would report equivalent interest in uncommitted sex, higher interest in visual sexual stimuli, and a greater number of sexual partners.

Body Modifications

FTMs may engage in a variety of procedures to become more physically masculine, which vary in complexity and permanence (e.g., wearing short hair or building muscle mass through exercise versus surgical treatments such as bilateral mastectomy or phalloplasty). Desire for masculinizing body modifications is potentially related to the degree of cross-gender identification. If nonhomosexual FTMs have not experienced as much gender identity confusion as homosexual FTMs have, then they may have less desire for physical masculinization. We thus predicted that homosexual FTMs would have a greater desire for masculinizing body modifications than nonhomosexual FTMs do.

More specifically, many FTMs appear to have a strong desire to have a penis. Steiner and Bernstein (1981) reported that all 41 of the homosexual FTMs they studied had this wish. However, because of high cost and current surgical limitations, many opt not to have this surgery. It is possible that the desire for a penis would be stronger among nonhomosexual FTMs because their lack of a penis is very obvious during sexual interactions with genetic men and this absence may reinforce their feelings of not being truly male (Devor, 1993). Alternatively, desire for a penis may be related to cross-gender identification in childhood and adulthood. If nonhomosexual FTMs are less cross-gender identified than homosexual FTMs, as we have hypothesized, then nonhomosexual FTMs might express less desire for phalloplasty than homosexual FTMs.

Thus, the intent of this study is to characterize the similarities and differences between homosexual and nonhomosexual FTMs. Very generally, we predicted greater sex atypicality among homosexual FTMs; we expected that if the two groups differed on sexually dimorphic traits, homosexual FTMs would appear more masculine than nonhomosexual FTMs. We particularly expected differences on sexually dimorphic traits that prior research found related to sexual orientation among nontranssexual women.

METHOD

Participants

We recruited female-to-male transsexuals (FTMs) using advertisements posted on several Internet web pages and news groups for female-to-male transsexuals or, more generally, for transgendered people. One of these web pages was specifically designed for nonhomosexual FTMs. The advertisements stated that female-to-male transsexuals at any stage of transition were desired for a study of the development of sex differences. Those who responded received questionnaires through the mail. As the study progressed, we also took advantage of snowball sampling opportunities. The final sample included 39 FTMs. Due to incomplete questionnaires, the sample size available for different measures fluctuated slightly from 35 to 39 FTMs.

Measures

Demographics

Demographic information collected included age, level of education, and ethnicity. Level of education attained ranged from 1 (no high school) to 7 (graduate degree completed).

Sexual Orientation

A modified Kinsey scale was administered (Kinsey *et al.*, 1953). The scale assessed sexual fantasy and behavior during the past year using a self-report, 7-point scale format: a score of 0 indicates exclusive sexual feelings toward, or sexual behavior with, men, and a score of 6 indicates exclusive sexual feelings toward, or behavior with, women.

Items for the Passive Sexual Role scale, the Preference for Partner Masculinity scale, and the Body Modification scale and two items concerning Sexual versus Emotional Jealousy [subsequently added to those written by Buss *et al.* (1992)] were written by the second author and are included in the Appendix. Characteristics of all scales included in the study are given in Table I.

Table I. Description of Study Measures

Name of scale	Number of items	Rating scale	Sample item	α
Childhood gender nonconformity	7	1 (strongly disagree) to 7 (strongly agree)	"I was a masculine girl"	.84
Childhood behavior	3	1 (strongly disagree) to 7 (strongly agree)	"As a child, I preferred playing with boys"	.65
Childhood identity	4	1 (strongly disagree) to 7 (strongly agree)	"As a child, I sometimes wished I had been born a boy rather than a girl"	.82
Continuous gender identity	10	1 (strongly disagree) to 7 (strongly agree)	"In many ways, I feel more similar to men than to women"	.62
Preference for partner masculinity	7	7-point scale: Very (masculine characteristic) to very (feminine equivalent of characteristic)	"Would your ideal partner be: very hairy, somewhat hairy, slightly hairy, neither, slightly unhairy, somewhat unhairy, very unhairy"	.93
Importance of partner physical attractiveness	11	1 (strongly disagree) to 7 (strongly agree)	"It is more important to me how nice a potential romantic partner is than how good looking they are"	.77
Interest in younger partners	9	1 (strongly disagree) to 7 (strongly agree)	"I am most sexually attracted to younger adults (aged 18–25)"	.83
Low concern with partner status	12	1 (strongly disagree) to 7 (strongly agree)	"I would not want to get romantically involved with someone who did not have a job"	.64
Sexual vs. emotional jealousy	4	1 (strongly disagree) to 7 (strongly agree)	"I would end my relationship if I discovered that my partner had been sexually unfaithful"	.78
Passive sexual role	5	1 (strongly disagree) to 7 (strongly agree)	"I am more sexually aggressive than my sex partners"	.83
Interest in uncommitted sex	10	1 (strongly disagree) to 7 (strongly agree)	"I could easily imagine myself enjoying one night of sex with someone I would never see again"	.91
Interest in visual sexual stimuli	8	1 (strongly disagree) to 7 (strongly agree)	"Whether or not I approve of them, I find films of attractive people having sex to be very sexually exciting"	.81
Body modification	11	1 (I've never considered it) to 5 (I've done it)	See Table IV	.81

Gender Identity

Four scales were included to assess both childhood and adulthood gender identity. The Childhood Gender Nonconformity scale measured participants' retrospective concepts of self as masculine or feminine in childhood and cross-gender behavior. We divided this scale into two subscales, Childhood Behavior and Childhood Identity, to assess retrospective reports of childhood behavior and self concepts separately. The Continuous Gender Identity scale assessed participants' current self-concepts as masculine or feminine. High scores on all scales indicate sex-atypical responses.

Partner Preferences

Six scales were included to assess aspects of partner preference. The Preference for Partner Masculinity scale assessed preference for masculine physical and behavioral characteristics in a partner. Items for scales assessing concern with partner status, partner attractiveness, and youth were written by Bailey *et al.* (1994): Low Concern with Partner Status, Importance of Partner's Physical Attractiveness, and Interest in Younger Partners. The Sexual vs. Emotional Jealousy Scale included the original items written by Buss *et al.* (1994), and items written by the second author. High scores on this scale indicate a tendency toward sexual jealousy.

Sexual Interest/Activity Preferences

Three scales and one item were included to assess aspects of preferences for certain sexual activities and interests. The Passive Sexual Role scale assessed preferences for the active (top) or passive (bottom) role in sexual encounters. Interest in Uncommitted Sex and Interest in Visual Sexual Stimuli scales and items were written by Bailey *et al.* (1994). One item asked participants to estimate the total number of sex partners they have.

Body Modification

The Body Modification Scale asked FTMs whether they had considered various physical alterations or procedures to appear masculine (e.g., short hair, breast binding, phalloplasty, see Tables I and IV for details).

Analyses

We have suggested that homosexual and nonhomosexual FTMs are not a uniform group. Consistent with this, we divided our sample into two groups and used

t tests to compare them on relevant variables; details about our classification system are provided. The Kinsey scale is a quasi-continuous scale rather than dichotomous, and not all FTMs were easily classified as homosexual or nonhomosexual. Therefore, we also performed a parallel set of analyses consisting of Pearson correlations between variables and present Kinsey Sexual Fantasy score. Although the correlation and *t*-test analyses are somewhat statistically redundant, they are not equivalent, and in some cases, the statistical significance of results differed between them. Because of the relatively small sample size and the exploratory nature of this study, we used a type 1 error rate (α) of .10 (two-tailed).

RESULTS

Sample Characteristics

FTMs were classified as homosexual or nonhomosexual according to their present sexual fantasies, measured by the Kinsey Sexual Fantasy Scale. We used the Kinsey Sexual Fantasy rather than the Sexual Behavior Scale, because sexual behavior is potentially influenced by opportunity. Sexual fantasy provides a clearer picture of whom an individual wishes to have sexual relations with regardless of opportunity. FTMs reporting Kinsey Sexual Fantasy Scores of 4 (most sexual feelings toward females, but some definite fantasy about males) or higher were designated homosexual (relative to the genetic sex of the subject) and FTMs reporting Kinsey Sexual Fantasy Scores of 3 (sexual feelings about equally divided between males and females) or lower were designated nonhomosexual. This method of classification yielded 21 homosexual FTMs and 17 nonhomosexual FTMs.

Descriptive statistics for the subsamples are given in Table II. The nonhomosexual FTMs were significantly older [$t(36) = 1.77, p < .1$] and attained a higher level of education [$t(36) = -2.08, p < .05$] than the homosexual FTMs, the former having completed some graduate work and the latter having graduated college, on average.

Gender Identity

Means and standard deviations for scales related to gender identity, partner preferences, and sexual activities/interests are presented in Table III. Consistent with our predictions, homosexual FTMs reported higher Childhood Gender Nonconformity than nonhomosexual FTMs [$t(36) = 1.67, p = .10$]. Sexual orientation, as a continuous variable (Kinsey Sexual Fantasy Scale), was significantly correlated with Childhood Gender Nonconformity in the predicted direction [$r(36) = .37, p < .05$], with FTMs who were more attracted to men tending to report less childhood cross-gender identification.

Table II. Sample Group Characteristics (Standard Deviations in Parentheses)

	Homosexual (<i>N</i> = 21)	Nonhomosexual (<i>N</i> = 17)
Demographics		
Mean age (yr)*	36 (8)	32 (8)
Ethnicity (No.)		
Caucasian	16	16
Other	5	1
Education**	5.1 (1.2)	6.1 (1.6)
Kinsey fantasy score		
Frequency (No.)		
6	13	0
5	4	0
4	4	0
3	0	4
2	0	10
1	0	0
0	0	3
Kinsey present sexual Fantasy (mean score)***	5.4 (.8)	1.9 (1.0)

* $p < .1$.** $p < .05$.*** $p < .001$.

Homosexual FTMs recalled significantly more masculine behaviors in childhood (Childhood Behavior: $M = 6.5$, $SD = 1.0$) than nonhomosexual FTMs ($M = 5.6$, $SD = 1.6$) [$t(36) = 2.15$, $p = .05$] but reported equivalent feelings of masculinity in childhood (Childhood Identity: $M = 6.4$, $SD = 1.2$) as nonhomosexual FTMs ($M = 6.3$, $SD = 1.0$) [$t(36) = .99$ n.s.]. Childhood Behavior was significantly correlated with sexual orientation [$r(37) = .36$, $p < .05$], but Childhood Identity was not [$r(37) = .2$, n.s.]. However, these correlations were not significantly different from each other. To test more rigorously whether the difference in recalled masculine behavior was independent of (even nonsignificant) differences in recalled gender identity, we performed the following multiple regression. The dependent variable, Masculine Childhood Behavior, was regressed on both continuously measured Sexual Orientation and Childhood Identity. Both Childhood Identity [$t(1) = 5.47$, $p < .001$] and Sexual Orientation [$t(1) = -1.96$, $p < .1$] were significant predictors of Childhood Behavior (adj. $r^2 = .495$).

Continuous Gender Identity was significantly correlated with childhood gender nonconformity [$r(36) = .34$, $p < .05$], but homosexual and nonhomosexual FTMs did not differ significantly on this variable, or was it significantly correlated with sexual orientation score.

Partner Preferences

Not surprisingly, homosexual FTMs found lesbians and heterosexual women more sexually appealing than nonhomosexual FTMs did. In contrast,

Table III. Group Means and Standard Deviations for Study Scales

	Homosexual ^a	Nonhomosexual ^b	<i>d</i>	Correlation with Kinsey score (<i>r</i>)
Gender identity				
Childhood gender nonconformity	6.6 (1.1)	6.0 (1.2)	.56*	.37**
Continuous gender identity	6.0 (.9)	5.5 (.9)	.21	.12
Partner preferences				
Preference for partner masculinity	2.7 (1.2)	5.1 (1.0)	-2.26***	-.81***
Sexual desirability of				
Heterosexual women	5.6 (1.0)	3.6 (1.8)	-1.8***	.77***
Heterosexual men	1.3 (.7)	3.2 (1.8)	1.8***	-.56***
Lesbians	4.5 (1.3)	3.2 (1.8)	.83**	.44***
Gay men	2.7 (1.7)	5.5 (1.2)	1.95***	-.77***
Importance of partner physical attractiveness	3.9 (.8)	3.8 (1.2)	.07	.08
Interest in younger partners	3.3 (1.2)	3.2 (1.3)	.09	.13
Low concern with partner status	4.3 (.9)	4.3 (.7)	-.09	-.06
Sexual vs. emotional jealousy	4.1 (1.7)	2.6 (1.2)	-1.2***	.58***
Sexual activities/interests				
Passive sexual role	2.2 (1.6)	3.9 (1.0)	-1.24***	-.61***
Number of sexual partners	22.0 (16.0)	11.9 (11.6)	-.73**	.42***
Interest in uncommitted sex	3.7 (1.6)	4.2 (1.6)	-.35	-.27
Interest in visual sexual stimuli	5.8 (.7)	5.0 (1.1)	1.06**	.33**

Note. Significance of *t* tests:

* $p < .1$; ** $p < .05$; *** $p < .01$.

^a*n* for homosexual FTM group ranged from 19 to 21.

^b*n* for nonhomosexual FTM group ranged from 16 to 17.

nonhomosexual FTMs found gay and heterosexual men more appealing than homosexual FTMs did. Paired *t* tests revealed that homosexual FTMs rated the sexual desirability of heterosexual women higher than that of lesbians [$t(18) = 2.6$, $p < .05$], and nonhomosexual FTMs found gay men more appealing than heterosexual men [$t(15) = 2.5$, $p < .01$].

Homosexual FTMs preferred very feminine characteristics in their partners while nonhomosexual FTMs indicated a preference for a partner with masculine characteristics [$t(32) = 3.49$, $p < .01$]. Sexual Orientation was significantly related to Preference for Partner Masculinity [$r(33) = -.81$, $p < .001$], as was Childhood Gender Nonconformity [$r(33) = -.34$, $p < .05$]. In contrast to findings from nontranssexual women (Bailey *et al.*, 1994), there was a sexual orientation effect on jealousy: homosexual FTMs reported greater sexual jealousy than nonhomosexual FTMs [$t(36) = -3.57$, $p < .001$]. There was a significant relation between Sexual Orientation and Sexual Jealousy [$r(37) = .43$, $p < .01$]. All other comparisons (Importance of Partner's Physical Attractiveness, Low Concern with Partner Status, and Interest in Younger Partners) were not significant.

Sexual Activities/Interests

Homosexual FTMs reported a preference for an assertive sexual role, while nonhomosexual FTMs seemed to prefer a more neutral sexual role (neither dominant/top nor submissive/bottom) [$t(32) = 3.49, p < .01$]. Sexual Orientation was significantly related to Passive Sexual Role [$r(34) = -.61, p < .001$], as was Childhood Gender Nonconformity [$r(34) = -.45, p < .01$]. Contrary to our prediction, Continuous Gender Identity was not significantly correlated with preference for the passive sexual role [$r(34) = -.16, p = .34$]. Thus, FTMs reporting less childhood gender nonconformity and sexual fantasies featuring predominantly males also reported a preference for the passive sexual role and a preference for masculine partners.

As predicted, based on prior research with nontranssexual females (Bailey *et al.*, 1994), homosexual FTMs reported a significantly greater interest in visual sexual stimuli than nonhomosexual FTMs. Sexual Orientation was significantly correlated with Interest in Visual Sexual Stimuli [$r(36) = .33, p < .05$]. As predicted, no significant differences were found between homosexual and nonhomosexual FTMs on Interest in Uncommitted Sex.

Homosexual FTMs reported having significantly more sexual partners than nonhomosexual FTMs [$t(33) = 2.09, p < .05$]. The t tests for this comparison were performed with one outlier removed, a homosexual FTM who reported 107 partners (over 2 SD from the next highest score). Subsequent analysis was performed with 19 homosexual FTMs and 16 nonhomosexual FTMs. Sexual orientation was significantly correlated with number of sexual partners [$r(33) = .42, p < .01$].

Body Modifications

Percentages of body modifications completed by each group are given in Table IV. The groups did not differ in total desired body modifications [$t(34) = .19, n.s.$], nor was total body modification score significantly correlated with Sexual Orientation [$r(34) = -.016, n.s.$]. Childhood Gender Nonconformity was significantly related to desired body modification [$r(34) = .46, p < .01$]; FTMs reporting higher cross-gender identification in childhood reported a stronger interest in masculinizing body modifications. The t tests performed on each body modification item revealed that the homosexual FTMs reported a greater desire for phalloplasty ($M = 2.4, SD = .9$) than the nonhomosexual FTMs ($M = 2.0, SD = .6$) [$t(36) = 1.6, p < .1, d = .54$] as predicted. Correlations between each body modification item and Sexual Orientation were all less than $.24 (p > .15)$ except for the first item ("wearing makeup to appear that you have facial hair" [$r(36) = -.59, p < .1$]). The correlation between desire for phalloplasty and sexual orientation was in the predicted direction [$r(36) = .24, p = .15$]. Childhood Gender

Table IV. Body Modifications

	Homosexual (<i>n</i> = 21)	Nonhomosexual (<i>n</i> = 17)
Body modifications completed (%)		
Wearing makeup to give the appearance of facial hair	48	29
Shaving to promote growth of facial hair	71	76
Wearing short hair	91	82
Lifting weights to become bulkier	81	82
Breast binding	86	88
Padding pants to give the appearance of having a penis	76	82
Bilateral mastectomy	38	41
Hysterectomy	33	12
Phalloplasty	0	0
Metoidioplasty	5	6
Testosterone injections	62	65
Body modification scale (mean score)	3.9 (0.9)	3.9 (0.5)

Non-conformity was not significantly related to desire for phalloplasty [$r(36) = .12$, n.s.], but Continuous Gender Identity was [$r(36) = .29$, $p < .1$]. All other tests were nonsignificant.

DISCUSSION

The results of this study suggest that FTMs are not a homogeneous group. Though similar in many respects, homosexual and nonhomosexual FTMs differed in ways that were generally consistent with our predictions and those of other researchers. Homosexual FTMs reported greater childhood gender nonconformity, preferred more feminine partners, were more sexually assertive, had more sexual partners, had a greater desire for phalloplasty, and reported sexual interests which are analogous to those of nontranssexual lesbians (higher interest in visual sexual stimuli). Contrary to our predictions, however, homosexual FTMs did not report a greater desire for masculinizing body modifications, greater adult masculinity, or less importance of partner social status. Homosexual FTMs indicated a tendency toward sexual jealousy, whereas nonhomosexual FTMs reported an inclination toward emotional jealousy; this finding was not predicted because research on nontranssexual women has not found an analogous difference.

The homosexual FTMs reported more masculinity in childhood than our nonhomosexual FTMs, but the two groups did not differ in degree of cross-gender identification in adulthood. It is noteworthy that both groups of FTMs reported high gender nonconformity in childhood, but homosexual FTMs reported significantly higher memories of childhood masculine behavior compared with nonhomosexual FTMs. The effect size for this finding was moderate ($d = .56$) and is analogous

to findings in nontranssexual women (Bailey and Zucker, 1995), with lesbians reporting more masculine childhoods than heterosexual women.

Homosexual FTMs differed from nonhomosexual FTMs in recalled cross-gender childhood behavior but not recalled cross-gender identification. There are at least two explanations why nonhomosexual FTMs might report more atypicality in childhood gender identity than in sex-atypical behavior. The first is that they indeed had strong feelings of masculinity in childhood, but those feelings were not expressed in overt behavior. The second is that their memories of cross-gender feelings are magnified by retrospective bias to a greater extent than their memories of cross-gender behavior. This finding is also interesting with regard to the etiology of homosexual and nonhomosexual transsexualism in females. Gender dysphoria was reported in childhood and adulthood by both homosexual and nonhomosexual groups, suggesting that cross-gender identity is not solely the result of same-sex attraction. Both groups of FTMs were, however, very similar in their reports of adult feelings of masculinity. This was contrary to our prediction, but not entirely surprising, as both homosexual and nonhomosexual FTMs identify as men. FTMs preferred partners who are attracted to males (heterosexual women and gay men) and who thus regard their FTM partner as male. This supports the impressions of Devor (1997) that FTMs are very interested in those individuals who will eroticize them as males. Preferences for partner masculinity differed for homosexual and nonhomosexual FTMs; homosexual FTMs reported a preference for "slightly" to "somewhat" feminine heterosexual women and nonhomosexual FTMs reported a preference for "slightly" masculine partners. It would be interesting to explore how homosexual and nonhomosexual FTMs' preferences compare with nontranssexual females with similar orientations.

Homosexual and nonhomosexual FTMs also differed in their past number of sex partners. This pattern was analogous to the results of Singh and Vidaurri's study of nontranssexual "butch" and "femme" lesbians. It is noteworthy that nonhomosexual FTMs had fewer sex partners despite the fact that their preferred partners were gay men, who are generally more interested in casual sex than the heterosexual women whom homosexual FTMs pursue sexually (Bailey *et al.*, 1994). There are at least two possible explanations. The first is that homosexual FTMs are more successful in finding partners than nonhomosexual FTMs. The second explanation is that homosexual FTMs are more motivated than nonhomosexual FTMs to engage in casual sex. Contradicting the latter interpretation, our two groups did not differ significantly with respect to interest in casual sex. Alternatively, perhaps nonhomosexual FTMs are less desirable to gay men than homosexual FTMs are to heterosexual women. This might reflect a male tendency to be discriminating with respect to the genitals of a potential partner. Alternatively, perhaps nonhomosexual FTMs are more feminine than the average gay man, and this femininity is not desired by gay men; Bailey *et al.* (1997) have shown that gay men typically value masculinity in partners. It is also possible that heterosexual

women are less selective with respect to femininity in partners and might even value this in a homosexual FTM partner (Fleming *et al.*, 1984).

Sexual role preference of FTMs was related to sexual orientation, with homosexual transsexuals more likely to be active and nonhomosexual transsexuals to be passive. Our findings are analogous to those of Bailey *et al.* (1999) and Singh *et al.* (1999), who studied nontranssexual women. One case study of a nonhomosexual FTM (Coleman and Bockting, 1988) provided a detailed account of the sexual activities this individual engaged in with his gay male partner, and these included receptive anal intercourse and penile–vaginal intercourse (this FTM still had a vagina). This nonhomosexual FTM apparently preferred a “bottom” or passive sexual role, consistent with our results.

Homosexual and nonhomosexual FTMs did not differ in their desire for masculinizing body modifications. Contrary to the speculation of Devor (1993), nonhomosexual FTMs were less interested in phalloplasty than FTMs. Having a penis allows an individual to assume the insertive sexual role that homosexual FTMs tended to prefer. The lack of a penis would not necessarily compromise nonhomosexual FTMs’ sexual interactions with gay men, as they had no role preference.

The sexual interests of homosexual and nonhomosexual FTMs appear to be analogous to those of nontranssexual females of the same sexual orientation. Both groups of FTMs reported interest in visual sexual stimuli but homosexual FTMs reported a higher interest than nonhomosexual FTMs, paralleling the results of Bailey *et al.* (1994) and Singh *et al.* (1999) studies of nontranssexual women. It seems implausible that this result is attributable to FTMs mimicking a more masculine sexual interest. For example, this could not explain the difference between homosexual and nonhomosexual FTMs’ interest in visual sexual stimuli. Biological explanations of masculinized sexual behaviors in women seem more plausible. For example, Money and Ehrhardt (1972) found that prenatally androgenized women (women with congenital adrenal hyperplasia [CAH]) were more responsive to visual sexual imagery than nonandrogenized women. Women with CAH have also been shown to exhibit more masculine childhood behavior (Money and Schwartz, 1977) and to show markedly greater rates of bisexuality and lesbianism (Money *et al.*, 1984). Therefore, a relationship may exist between exposure to masculinizing agents during development, masculine childhood behavior, homosexuality, and interest in visual sexual stimuli. If so, nonhomosexual FTMs may have had less exposure to masculinizing agents. Thus, despite their gender dysphoria, their sexual orientation and sexual psychology remain unaffected and female-typical.

Sexual jealousy was more intense for homosexual FTMs than for nonhomosexual FTMs, a result that has not been observed with nontranssexual women. In one study, lesbian women reported levels of emotional jealousy similar to those of heterosexual women (Bailey *et al.*, 1994). It is possible to interpret these results as related to the gay male culture that nonhomosexual FTMs would enter as gay men.

Gay men are less sexually jealous than heterosexual men (Bailey *et al.*, 1994) and some authors have suggested that sexual exclusivity is less valued in gay male culture (Hawkins, 1990). Enculturated nonhomosexual FTMs would also subscribe to this set of values. Our results indicate, however, that nonhomosexual FTMs actually report significantly fewer sexual partners than homosexual FTMs.

Methodological Limitations

The results of this study are limited by three methodological concerns: non-random recruitment of participants, limited information about the validity of some of our measures, and small sample size. FTMs were recruited via computer-based media, which limits recruitment to participants who are computer-literate and who have the resources to gain access to such technology. This method of recruitment restricts the education level and socioeconomic status of participants. Future studies should attempt to vary recruitment methods to avoid these and other potential sampling biases.

A second potential limitation of this study concerns the validity of our measures. Some of the measures we used are new and have not yet been rigorously validated with nontranssexual populations. Even so, these measures demonstrated a relatively high internal consistency reliability and high face validity. As well, some of these measures have been used in previous studies (Bailey *et al.*, 1994; Bailey *et al.*, 1999) and have shown consistent sex and sexual orientation differences. Our hypotheses related to sexual psychology were based on the results of these studies and were supported with data from, in some ways, a very different population.

A third limitation of this study is our small sample size. Given the rarity of our target populations, the number of subjects we did recruit is quite remarkable. Even so, larger numbers of individuals would allow for greater generalizability and statistical power. Replication of our results with larger and more representative samples is therefore desirable.

Future Directions

This study represents, to our knowledge, the first systematic investigation of a typology of female gender dysphoria. Our results illuminate the differences between homosexual and nonhomosexual FTMs, but there are many unanswered questions. For example, it would seem beneficial to ascertain whether nonhomosexual FTMs exhibit "autoandrophilia," the female analogue of autogynephilia, which appears to be a core component of nonhomosexual male-to-female transsexualism (Blanchard, 1989). Authors reporting on female-to-male transsexualism have noted a childhood genesis of cross-dressing in their sample of FTMs (Roback and Lothstein, 1986), but only one specified that cross-dressing (in a singular

heterosexual FTM) was not accompanied by sexual excitement (Dickey and Stephens, 1995). Given that the incidence of true paraphilia among genetic females is extremely low (DSM-IV, 1994), we would expect that "autoandrophilia" would be rare or nonexistent among nonhomosexual FTMs. It would also be beneficial to examine whether nonhomosexual FTMs exhibit hormonal abnormalities and medical conditions which have been reported in samples of, presumably, homosexual FTMs: increased levels of testosterone and differential incidences of polycystic ovarian disease, a medical condition associated with hormonal abnormalities (Futterweit *et al.*, 1986).

The investigation of etiological variables such as gender identity would be highly illuminating not only for the understanding of the development of non-homosexual FTMs but for the understanding of the relationship between sexual orientation and gender identity. Longitudinal studies of tomboys (masculine girls) may reveal whether either form of female transsexualism is associated with marked childhood masculinity in girls.

The hypothesis that different brain modules are implicated in different aspects of sexual psychology may be applicable to our results (see Freund, 1990; Quinsey and Lalumiere, 1995). Modules that control for sexual orientation (target preference) may be closely related to those that control for interest in feminine appearing partners, interest in visual sexual stimuli, the tendency for sexual jealousy, and dominant sexual roles. If the neurohormonal hypothesis of sexual orientation applies to homosexual females with gender dysphoria, these related sexual psychology modules may have become "masculinized" during a critical developmental period. Other sexual psychology modules would remain unaffected, the result being a mixture of typically feminine and masculine traits and preferences in homosexual FTMs. From this hypothesis, nonhomosexual FTMs would not experience extensive masculinization during development and would thus retain sexual "modules" congruent with their genetic sex and sexual orientation. Other modules, such as gender identity, would be affected, hence the "independence" of effects observed in this study.

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APPENDIX

Passive Sexual Role Scale

1. I am more sexually aggressive than my sex partners.
2. I consider myself a “top.”
3. My partners have tended to initiate sex or sexual activities more than I have.*
4. My sex partners have tended to be “bottoms.”
5. I would enjoy my partner using a dildo on me.*

Preference for Partner Masculinity Scale

The first item is written as it appeared in the questionnaire. The same 7-point scale was used for the rest of the items.

Would your ideal partner be

1. Very muscular: Somewhat: Slightly: Neither: Slightly: Somewhat: Very unmuscular.*
2. Very hairy to Very unhairly.*
3. Very tall to Very short.*
4. Very strong to Very weak.*
5. Very rugged looking to Very delicate looking.*
6. Very feminine looking to Very masculine looking.
7. Very feminine acting to Very masculine acting.

Sexual Versus Emotional Jealousy—Items Added to Buss *et al.* (1992)

1. Even if my partner were sexually faithful, I would feel terrible if s/he confided more in another person than me.*
2. I could tolerate my partner “straying” sexually with someone else, as long as I remained the most important person in his/her life.*

*Indicates reverse scoring for these items.