

Sexuality of Male-to-Female Transsexuals

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Abstract Blanchard's (J Nerv Ment Dis 177:616–623, 1989) theory of autogynephilia suggests that male-to-female transsexuals can be categorized into different types based on their sexuality. Little previous research has compared the sexuality of male-to-female transsexuals to biological females. The present study examined 15 aspects of sexuality among a non-clinical sample of 234 transsexuals and 127 biological females, using either an online or a paper questionnaire. The results showed that, overall, transsexuals tended to place more importance on partner's physical attractiveness and reported higher scores on Blanchard's Core Autogynephilia Scale than biological females. In addition, transsexuals classified as autogynephilic scored significantly higher on Attraction to Feminine Males, Core Autogynephilia, Autogynephilic Interpersonal Fantasy, Fetishism, Preference for Younger Partners, Interest in Uncommitted Sex, Importance of Partner Physical Attractiveness, and Attraction to Transgender Fiction than other transsexuals and biological females. In accordance with Blanchard's theory, autogynephilia measures were positively correlated to Sexual Attraction to Females among transsexuals. In contrast to Blanchard's theory, however, those transsexuals classified as autogynephilic scored higher on average on Sexual Attraction to Males than those classified as non-autogynephilic, and no transsexuals classified as autogynephilic reported asexuality.

Keywords Autogynephilia · Gender identity disorder · Transsexualism · Sexuality · Masochism

Introduction

Since its beginnings in the early 20th century, research investigating the sexuality of male-to-female transsexuals has classified them into groups based on their sexual orientation. However, this approach has been disputed by a number of transsexuals (Lawrence, 2004). The present study attempted to shed some light on this issue by assessing aspects of male-to-female transsexuals' sexuality, including sexual orientation, autogynephilia, sexual attraction to transgender fiction, and factors relevant to evolutionary theory, among a non-clinical population. These variables were also compared to a group of biological females to ascertain similarities and differences in the sexuality of male-to-female transsexuals. Before outlining these aspects of sexuality, a brief review of some previous studies of male-to-female transsexual sexuality is given. In this article, the term transsexual refers to male-to-female transsexuals unless otherwise stated.

Hirschfeld (1914/2000) distinguished among gynephilic (exclusively sexually attracted to adult females), bisexual, androphilic (exclusively sexually attracted to adult males), asexual, and narcissistic or automonosexual gender-variant persons. He described automonosexuals as sexually aroused by the idea or impression of themselves as females.

Freund, Steiner, and Chan (1982) found that gynephilic transsexuals reported cross-gender fetishism that was not seen among androphilic transsexuals. Androphilic transsexuals also reported a greater level of childhood feminine gender identity than gynephilic transsexuals. Using factor analysis, they identified one relatively strong factor, which included erotic attraction to women and fetishism loading

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positively, and childhood feminine gender identity and erotic attraction to males loading negatively. Freund et al. concluded that there were two distinct “types” of transsexuals: gynephilic and androphilic.

Using standardized self-report questionnaires, Blanchard (1985a, 1988, 1989) provided evidence for the two-type model of transsexuality proposed by Freund et al. (1982). Blanchard (1985a) compared four groups of transsexuals that were differentiated by their sexual orientation and found that there were no significant differences among gynephilic, bisexual, and asexual transsexual groups in the proportion of cases reporting a history of erotic arousal in association with cross-dressing, which was significantly higher than the androphilic group. He labeled the three groups “nonhomosexual” relative to their biological sex.

Blanchard and Clemmensen (1988) found that although gender dysphoria and fetishistic arousal were negatively correlated, they were not mutually exclusive—many transsexuals reported both. Blanchard (1988) found that nonhomosexual transsexuals reported significantly lower childhood femininity than the androphilic group.

Blanchard (1989) introduced the concept of *autogynephilia*, which he used to refer to “a male’s propensity to be sexually aroused by the thought of himself as a female” (p. 616). This concept formed the basis of Blanchard’s hypothesis that there are two distinct manifestations of male-to-female transsexualism: “homosexual” and “autogynephilic.” According to Blanchard, nonhomosexual gender dysphoria is the result of autogynephilia. Autogynephilic transsexuals are sexually aroused by stimuli that result in them to perceiving themselves in a more feminine way. Cross-dressing is the most striking example here—Blanchard believed that there was much commonality between autogynephilic transsexuals and transvestites. However, he believed autogynephilia can also encompass erotic ideas of feminine situations in which women’s clothing plays little or no role at all, such as going to the hair salon or even doing knitting.

Blanchard believed that the sexual interest in males that arises in bisexual transsexuals was fundamentally different from the androphilic group. According to Blanchard, in bisexual transsexuals, autogynephilia produces a secondary interest in males to go along with the transsexuals’ basic erotic interest in females (Blanchard, 1989). Blanchard (1990) stated that the interest was not in the male body or physique as it is for the androphilic group, but rather in the perception of themselves as a woman that males are attracted to. The inclusion of a male can add to the fantasy of being regarded as a woman for the bisexual group and the attraction to a male would diminish if the bisexual transsexual was not being regarded as a woman. Blanchard (1989) supported this hypothesis with the finding that bisexual transsexuals were significantly more likely to report autogynephilic interpersonal fantasy—erotic fantasies

of being admired by another person—than all of the other transsexual groups.

Blanchard (1991) stated that autogynephilic sexual arousal may diminish or even disappear due to age, hormone treatment, and sex reassignment surgery (SRS), and yet the desire to live as a woman does not diminish, and often grows stronger. He conceptualized this as a likeness to heterosexual pair bonding: after years of marriage, sexual excitement with a partner tends to decrease; however, one continues to be just as attached to that person. Similarly, the desire to have a female body continues in a “permanent love-bond” (Blanchard, 1991, p. 248).

A number of subsequent findings have relevance to Blanchard’s theory. Among transsexuals, Johnson and Hunt (1990) found gynephilia was significantly positively correlated with sexual arousal to cross-gender fantasy, and significantly negatively correlated with feminine gender identity in childhood. More recent studies have also reported the existence of cross-gender sexual arousal among transsexuals (Docter & Fleming, 2001; Lawrence, 2003; Walworth, 1997). Two further studies have found that transsexuals who were sexually attracted to males were significantly more feminine as a child and significantly less likely to report sexual arousal when cross-dressing (Lawrence, 2005; Smith, van Goozen, Kuiper, & Cohen-Kettenis, 2005).

Another interesting observation that has relevance to Blanchard’s theory is the existence of erotic narratives that are found in transvestite publications and on the Internet that appear to be created for individuals with transvestic and autogynephilic fantasies. Beigel and Feldman (1963) examined 90 such narratives and noted that nearly half of the stories ended with the indication that the main character will go on to live as a woman—an indication of transsexual fantasy among consumers of such fiction. Buhrich and McConaghy (1976) observed that the experiences in the transvestite fiction differed sharply from what the transvestite experienced in real life. They believed these stories illustrated wish fulfillment of desires that are deprived of expression in reality. Docter (1988) believed that the themes of these stories merely provide insight into what transvestites find most pleasurable, but they are of little use in distinguishing individual’s motives or reasons for cross-dressing. Many of these narratives can be interpreted as autogynephilic fantasies because the male is transformed into a female, not just through a change of clothes, but also through changes via a surgical, magical, or science fiction means. One question this research is addressing is whether transsexuals are sexually attracted to this fiction.

Lawrence (2004) noted that many transsexuals oppose Blanchard’s theory of autogynephilia. It is clear that many transsexuals do not accept the underlying assumption of Blanchard’s theory that persons with autogynephilia are males with a sexual fetish (e.g., James, 2004). Another

phenomenon that added fuel to the argument was the release of Bailey's (2003) book. In this book, Bailey supported Blanchard's theory, and explained it in layperson terms in an attempt to popularize it among the general public. However, this has been very unpopular among transsexuals because among other things Bailey asserted that all transsexuals who do not believe in Blanchard's model are lying, either to themselves or to others (for a history of this controversy, see Dreger, in press).

Some further aspects of sexuality were of interest for the present study: sexual attraction to feminine males, sadomasochism, and aspects of sexuality relevant to evolutionary theory. These are briefly described in the following paragraphs.

Little previous research has examined attraction to femininity in males among gender-variant persons. Ovesey and Person (1976) stated that transvestites tend to avoid sexual encounters with males, with the exception of other transvestites. Blanchard and Collins (1993) found that 26% of personal advertisements looking for transsexuals and transvestites were placed by self-described cross-dressers.

Several researchers have noted sadistic and masochistic tendencies in transsexuals and transvestites (Bolin, 1988; Buhrich & McConaghy, 1977; Walworth, 1997). If autogynephilia is a type of paraphilia as Blanchard (1989) contends, then we would expect to see a positive relationship between autogynephilia and sadomasochism and other fetishistic fantasies.

Bailey, Gaulin, Agyei, and Gladue (1994) showed that, in accordance with sexual selection theory, males are more likely than females to report interest in uncommitted sex, interest in visual sexual stimuli, preference for younger partners, to value partner physical attractiveness, and experience of sexual jealousy more strongly than emotional jealousy. On the other hand, women were more likely than men to report concern with partner status, and to report experiencing emotional jealousy more strongly than sexual jealousy.

The aim of this research was to measure these aspects of sexuality among male-to-female transsexuals and compare them to those of a group of biological females, to ascertain similarities and differences in the sexuality of transsexuals.

Method

Participants

Transsexual participants were recruited from transgender social/support groups in New Zealand, and biological female participants were recruited through an undergraduate psychology class at Massey University in Auckland, New Zealand. These participants were given the option of either completing the questionnaire on the Internet or completing a

paper version. Transsexual and biological female participants were also recruited via the Internet. The link to the survey was posted on a number of transgender, women's, and psychology online interest groups and email lists. Participants recruited via the Internet were given only the option of completing the survey over the Internet.

The questionnaire received a total of 361 completed responses; 327 of these were via the Internet questionnaire. Paper surveys were given to 71 people; 34 of these were returned completed, giving a response rate of 48%. Of the total, 127 responses came from biological females and 234 came from transsexuals.

Transsexuals ($M = 39.21$ years, $SD = 14.03$) were on average significantly older than biological females ($M = 30.63$ years, $SD = 11.90$), $t(359) = 5.83$, $p < .001$. The majority (90%) of participants identified as European. Ethnic minorities were represented in 14% of participants. Participants in highly skilled occupations were well represented in this sample, with 46% of participants classified in the three most highly skilled categories on the New Zealand Standard Classification of Occupations (Statistics New Zealand, 1999). A large proportion (23%) of participants were students. The current sample appeared to be well-educated: 27% reported having a bachelor's degree, 16% reported having a master's or doctoral degree, and only 6% reported achieving 3 years of high school or less. Transsexual and biological female groups did not differ significantly in ethnicity, occupation classification, or level of education. Most of the transsexual participants (83%) had not undertaken SRS, and 61% of transsexuals reported that they were currently taking female hormones.

Differences between participants who completed and did not complete the entire survey were examined. Participants who did not complete the entire questionnaire were significantly less likely to be European $\chi^2 = 32.11$, $p < .001$, and significantly more likely to be Asian $\chi^2 = 39.25$, $p < .001$. Completers and non-completers did not differ significantly in terms of gender identity, occupation classification, marital status, age, level of education, number of biological children, sexual orientation, or on any of the remaining variables.

Measures

Sex-Linked Behaviours Questionnaire (McConaghy, 1998)

Sexual orientation was determined by responses to eight questionnaire items on sexual fantasy, sexual arousal, and sexual attraction, for example, "Rate the degree to which in your current sexual fantasies you are aroused by males." In this study, items measuring sexual attraction to males had an internal reliability coefficient (alpha) of .85, and items

measuring sexual attraction to females had an alpha coefficient of .86.

Attraction to Male Physique

This scale contains six items measuring sexual attraction to the male physique, designed by Veale, and included in the Appendix. This scale had an internal reliability coefficient of .82 in the present study.

Attraction to Feminine Males Scale

This scale contains six items measuring sexual attraction to femininity in males, designed by Veale, and included in the Appendix. This scale had an internal reliability coefficient of .94 in the present study.

Recalled Gender Identity/Gender Role questionnaire (Zucker et al., 2006)

This scale measures recalled childhood gender identity and gender role; for example, “As a child, I put on or used cosmetics (make-up) and girls’ or women’s jewellery.” This scale uses 5-point responses, with one or two extra response items to allow participants to indicate that they did not remember or that the behavior did not apply. Only the 15 items that loaded over .65 on the gender identity/gender role factor that emerged from Zucker et al.’s (2006) factor analysis, and one other item asking about gender of closest childhood friend were included in the questionnaire. This scale had an internal reliability coefficient of .90 in the present study.

Core Autogynephilia Scale (Blanchard, 1989)

This 8-item scale was developed by Blanchard to measure sexual attraction to the fantasy of being a woman, for example, “Have you ever been sexually aroused at the thought of being a woman?” Changes were made to six of the questions so that participants were asked if they have ever been sexually aroused when picturing themselves with attractive or more attractive female physical features. The “attractive or more attractive” part was added to Blanchard’s (1989) original version of the scale to make the questions more applicable to biological females. The skip instructions were also changed so that participants answering negatively to the first two questions would skip all remaining questions of this scale.

Among a sample of 2,700 biological male presenting at a gender identity clinic, Blanchard (1989) found an internal reliability coefficient of .95. Among a sample of 427 patients who reported histories of cross-dressing and/or feeling like a woman, Blanchard (1992) found an internal reliability coefficient of .94. In the present study, this scale had an internal reliability coefficient of .95.

Autogynephilic Interpersonal Fantasy Scale (Blanchard, 1989)

This 4-item scale measures the sexual arousal of being admired by another person as a female, for example, “Have you ever been sexually aroused while picturing yourself as a woman in the nude being admired by another person?” Blanchard (1989) found an internal reliability coefficient of .86, and Blanchard (1992) found a coefficient of .84. In the present study, this scale had an internal reliability coefficient of .83.

Fetishism Scale (Freund & Blanchard, 1998)

This scale measures sexual attraction to inanimate objects, for example, “Were you ever more strongly sexually attracted by inanimate things than by females or males?” Freund et al. (1982) reported an internal reliability coefficient of .91 from a sample of 444 sexology patients and controls. Blanchard (1992) found an internal reliability coefficient of .97. This scale had an internal reliability coefficient of .94 in the present study.

Masochism Scale (Freund & Blanchard, 1998)

This scale measures masochistic tendencies, for example, “Has imagining that you were being humiliated or poorly treated by someone ever excited you sexually?” Freund et al. (1982) reported an internal reliability coefficient of .83, and this scale had an internal reliability coefficient of .86 in the present study.

Responses to the Sex Linked Behaviors Questionnaire, Core Autogynephilia, Autogynephilic Interpersonal Fantasy, Fetishism, and Masochism scales were altered from their original author’s format to 6-point Likert scales from *never* to *all the time* with responses scored from 0 to 5. However, since conducting this research we have been made aware that the amount of time a person is sexually attracted to something is not consistent with standard definitions of sexual attraction (e.g., Sell, 1997). To extract some meaningful results from the data the questions on these scales were converted to dichotomous measures. For each of the questions in these scales, if

participants responded *never* they would receive a score of 0, and any other response would elicit a score of 1.

Sexual and Emotional Jealousy (Buss, Larsen, Westen, & Semmelroth, 1992)

This 4-item scale was designed to assess sexual and emotional jealousy, for example, “Rate how distressing imagining your partner falling in love with that other person would be.” Instead of using the forced-choice responses that Buss et al. employed, this version of the scale followed Cann, Mangum, and Wells (2001) in asking participants to respond with how distressing they found each of the four alternatives. The response scale has 5 points ranging from *not at all distressing* to *extremely distressing*. In the present study, this scale had an internal reliability coefficient of .90.

Preference for Younger Partners (Bailey et al., 1994)

This 11-item scale measures age preference for sexual partners, for example, “If someone showed definite signs of aging it would be difficult for me to be very sexually attracted to them.” Nine of the items were scored on a 7-point Likert-scale format from *strongly agree* to *strongly disagree*. Two of the items ask participants to specify an age of desired partner. This was then subtracted from the participant’s age to give a difference score. Bailey et al. reported internal reliability coefficients ranging from .63 in heterosexual men to .80 in heterosexual women among a total sample of 277. In the present study, this scale had an internal reliability coefficient of .74.

Interest in Uncommitted Sex (Bailey et al., 1994)

This scale is a 10-item measure of attraction to casual sexual relationships, for example, “Monogamy is not for me.” The items were scored on a 7-point Likert-scale format from *strongly agree* to *strongly disagree*. Bailey et al. reported an internal reliability coefficient of .90 from their sample, and in the present study this scale had a coefficient of .91.

Interest in Visual Sexual Stimuli (Bailey et al., 1994)

This scale is a 12-item measure of sexual interest in visual stimuli, for example, “Seeing my sexual partner undress is a real turn-on.” The items were scored on a 7-point Likert-scale format from *strongly agree* to *strongly disagree*.

Bailey et al. reported internal reliability coefficients ranging from .83 in heterosexual men to .86 in homosexual women, and in the present study this scale had a coefficient of .84.

Importance of Partner Status (Bailey et al., 1994)

This scale is a 12-item measure of concern with the amount of resources held by a partner or potential partner, for example, “I would like my partner to be from a higher social class background than I.” The items were scored on a 7-point Likert-scale format from *strongly agree* to *strongly disagree*. Bailey et al. reported internal reliability coefficients ranging from .65 in homosexual men to .82 in heterosexual women, and in the present study this scale had a coefficient of .72.

Importance of Partner Physical Attractiveness (Bailey et al., 1994)

This scale is a 10-item measure of concern with the physical attractiveness of partners, for example, “I would be happy if my partner were more sexually attractive than I.” The items were scored on a 7-point Likert-scale format from *strongly agree* to *strongly disagree*. Bailey et al. reported internal reliability coefficients ranging from .70 in homosexual men to .77 in all women, and in the present study this scale had a coefficient of .72.

Attraction to Transgender Fiction Scale

This scale contains 12 items measuring sexual attraction to erotic narratives containing transgender themes. Veale designed this scale, and it is reproduced in the Appendix. This scale had an internal reliability coefficient of .96 in the present study.

Transgender Identity Scale (Docter & Fleming, 1992)

This 9-item scale measures cross-gender identification, and continuous commitment to cross-gender behavior through the desire to live entirely in the female role, for example, “If it were possible, I’d choose to live my life as a woman (or I now do so).” This scale was only completed by transsexual participants. Instead of using the 2-point *yes* or *no* scales presented by Docter and Fleming, the items were scored on a 7-point Likert-scale format from *strongly agree* to *strongly disagree*. This scale consisted of nine items loading greater than .72 on the factor labeled “identity” on Doctor and

Fleming's (2001) factor analysis. From a sample of 682 transvestites and transsexuals, Docter and Fleming (1992) reported internal consistency of .88. This scale had an internal reliability coefficient of .62 in the present study.

Additional information was collected from transsexual participants about the age they first desired to change their sex, how long they had been taking female hormones, and whether they had undertaken SRS.

Results

Comparisons Between Biological Females and Transsexuals

Table 1 outlines ANCOVAs comparing mean scores of biological female and transsexual participants, using age as a covariate. After adjusting for age differences, transsexuals

Table 1 ANCOVA comparisons of means for transsexual and biological female participants using age as a covariate

Variable	Range		TS	BF	<i>F</i>	<i>p</i>	η^2	Power
Sexual Attraction to Males ^a	0–4	<i>M</i>	3.13	3.43	0.01	ns	.000	.05
		<i>SD</i>	1.35	1.18				
Sexual Attraction to Females ^a	0–4	<i>M</i>	3.37	3.31	0.61	ns	.003	.12
		<i>SD</i>	1.20	1.26				
Attraction to Male Physique	0–32	<i>M</i>	16.69	19.09	0.84	ns	.002	.15
		<i>SD</i>	10.60	8.67				
Attraction to Feminine Males	0–32	<i>M</i>	10.51	7.98	11.21	.001	.033	.92
		<i>SD</i>	9.74	8.33				
Recalled Feminine Gender Identity	0–75	<i>M</i>	41.29	35.34	21.89	.001	.074	1.00
		<i>SD</i>	9.26	11.54				
Core Autogynephilia	0–9	<i>M</i>	7.50	5.07	26.36	.001	.130	1.00
		<i>SD</i>	2.90	3.50				
Autogynephilic Interpersonal Fantasy	0–4	<i>M</i>	3.08	2.93	2.59	ns	.014	.36
		<i>SD</i>	1.43	1.40				
Fetishism	0–6	<i>M</i>	2.69	2.97	0.05	ns	.000	.06
		<i>SD</i>	2.62	2.60				
Masochism	0–11	<i>M</i>	2.10	3.16	1.84	ns	.010	.27
		<i>SD</i>	2.43	3.17				
Sexual Jealousy ^b	0–8	<i>M</i>	5.73	6.20	2.18	ns	.007	.31
		<i>SD</i>	2.49	2.60				
Emotional Jealousy ^b	0–8	<i>M</i>	6.33	6.97	7.47	.007	.024	.78
		<i>SD</i>	1.99	1.78				
Preference for Younger Partners	Any range ^c	<i>M</i>	34.58	21.53	25.02	.001	.075	1.00
		<i>SD</i>	17.16	14.88				
Interest in Uncommitted Sex	0–60	<i>M</i>	23.78	25.06	0.08	ns	.000	.06
		<i>SD</i>	12.95	15.47				
Interest in Visual Sexual Stimuli	0–72	<i>M</i>	39.83	41.75	0.25	ns	.001	.08
		<i>SD</i>	12.43	12.13				
Importance of Partner Status	0–72	<i>M</i>	39.59	36.49	12.67	.001	.041	.94
		<i>SD</i>	9.59	9.05				
Importance of Partner Physical Attractiveness	0–60	<i>M</i>	31.32	27.56	13.07	.001	.043	.95
		<i>SD</i>	7.88	8.49				
Attraction to Transgender Fiction	0–48	<i>M</i>	11.72	5.39	21.58	.001	.069	1.00
		<i>SD</i>	12.79	8.69				

Note: TS = transsexuals; BF = biological females

^a Sex Linked Behaviors Questionnaire

^b Sexual and Emotional Jealousy Scale

^c Any range possible; actual scores ranged from 9 to 66

scored significantly higher on Attraction to Feminine Males, Recalled Feminine Gender Identity, Core Autogynephilia, Preference for Younger Partners, Importance of Partner Status, Importance of Partner Physical Attractiveness, and Attraction to Transgender Fiction. Biological females scored significantly higher on Emotional Jealousy.

Comparisons Among Autogynephilic Transsexuals, Non-Autogynephilic Transsexuals, and Biological Females

Transsexual participants were categorized as autogynephilic or non-autogynephilic based on their scores on the Core Autogynephilia, Autogynephilic Interpersonal Fantasy, Attraction to Feminine Males, and Attraction to Transgender Fiction scales. These scales were selected because they were found most effective for classifying transsexuals into groups in a taxometric analysis using the same data as the present study (Veale, Lomax, & Clarke, 2007). A hierarchical cluster analysis using squared Euclidian distance assigned two clusters: 118 transsexuals were classified as non-autogynephilic and 51 were classified as autogynephilic. These scales were not completed sufficiently by 65 transsexual participants, and their data were excluded from this analysis.

ANCOVA tests were performed to compare autogynephilic transsexual, non-autogynephilic transsexual, and biological female participants on all of the variables measured in the study. The results of the ANCOVAs are shown in Table 2. All of the scales in the ANCOVA yielded a significant difference between the three groups except for the sexual orientation scales, and Attraction to Male Physique.

Post-hoc Bonferroni tests were applied to identify homogeneous subsets. Non-autogynephilic transsexuals scored significantly lower on Masochism and Interest in Visual Sexual Stimuli than autogynephilic transsexuals and biological females, who did not differ significantly from each other. Autogynephilic transsexuals scored significantly higher on Attraction to Feminine Males, Autogynephilic Interpersonal Fantasy, Preference for Younger Partners, and Attraction to Transgender Fiction, and lower on Sexual Jealousy than non-autogynephilic transsexuals and biological females, who did not differ significantly from each other. For Fetishism and Interest in Uncommitted Sex, autogynephilic transsexuals scored significantly higher than biological females, who scored significantly higher than non-autogynephilic transsexuals. Biological females scored significantly lower on Recalled Feminine Gender Identity than both transsexual subgroups, which did not differ significantly from each other. Autogynephilic transsexuals scored significantly lower than biological females on Emotional Jealousy and significantly higher on Importance of Partner Status; non-autogynephilic

transsexuals did not differ significantly from autogynephilic transsexuals or biological females for these variables. For Core Autogynephilia and Importance of Partner Physical Attractiveness, autogynephilic transsexuals scored significantly higher than non-autogynephilic transsexuals, who scored significantly higher than biological females.

Comparisons were made between autogynephilic and non-autogynephilic transsexuals on the measures that were only completed by transsexuals. Autogynephilic transsexuals had a significantly later age of first desire to change sex ($U = 1675.5$, $p = .016$), were less likely to be taking female hormones ($\chi^2 = 7.20$, $p = .007$), had fewer months taking hormones ($U = 1461.0$, $p = .003$), and less likely to have had SRS ($\chi^2 = 4.36$, $p = .037$) than non-autogynephilic transsexuals. These groups did not differ significantly in age or scores on the Transgender Identity Scale.

Correlational Analyses

Table 3 displays correlation scores between autogynephilia variables and other variables relevant to autogynephilia theory. Sexual Attraction to Males correlated positively with Core Autogynephilia among biological females and with Autogynephilic Interpersonal Fantasy among all participants. Sexual Attraction to Females correlated positively with Core Autogynephilia among all participants and with Autogynephilic Interpersonal Fantasy among transsexuals. Attraction to Male Physique correlated positively with Autogynephilic Interpersonal Fantasy among biological female participants. Attraction to Feminine Males correlated positively with Core Autogynephilia and Autogynephilic Interpersonal Fantasy among all participants. Attraction to Transgender Fiction was positively correlated with Core Autogynephilia among all participants and with Autogynephilic Interpersonal Fantasy among transsexuals. Recalled Feminine Gender Identity was not related to Autogynephilia variables for transsexual or biological female participants. However, Recalled Feminine Gender Identity was positively correlated with Sexual Attraction to Males among both transsexuals ($\rho = .24$, $p < .01$) and biological females ($\rho = .30$, $p < .01$), and negatively correlated with Sexual Attraction to Females among both transsexuals ($\rho = -.28$, $p < .01$) and biological females ($\rho = -.30$, $p < .01$).

Finally, in testing Blanchard's hypothesis that bisexual autogynephilic transsexuals are not attracted to the male physique, we found among transsexual participants classified as autogynephilic in the cluster analysis described above, Attraction to Male Physique correlated significantly positively with Sexual Attraction to Males ($\rho = .65$, $p < .01$), and this correlation was comparable to non-autogynephilic transsexuals ($\rho = .65$) and biological females ($\rho = .64$).

Table 2 ANCOVA comparisons among autogynephilic transsexual, non-autogynephilic transsexual, and biological female participants, using age as a covariate

Variable	Range		Non-autogynephilic transsexuals	Autogynephilic transsexuals	Biological females	<i>F</i>	<i>p</i>	η^2	Power
Sexual Attraction to Male ^d	0–4	<i>M</i>	2.97	3.06	3.49	1.54	ns	.010	.33
		<i>SD</i>	1.43	1.37	1.13				
Sexual Attraction to Females ^d	0–4	<i>M</i>	3.18	3.67	3.25	2.87	ns	.019	.56
		<i>SD</i>	1.37	.93	1.33				
Attraction to Male Physique	0–32	<i>M</i>	16.93	15.28	19.12	1.66	ns	.011	.35
		<i>SD</i>	9.33	9.10	8.64				
Attraction to Feminine Males	0–32	<i>M</i>	5.64 ^a	17.83 ^b	7.65 ^a	45.36	.001	.237	1.00
		<i>SD</i>	6.38	9.90	8.31				
Recalled Feminine Gender Identity	0–75	<i>M</i>	42.73 ^b	41.20 ^b	35.48 ^a	12.98	.001	.099	1.00
		<i>SD</i>	8.84	10.18	11.57				
Core Autogynephilia	0–9	<i>M</i>	6.53 ^b	8.85 ^c	4.79 ^a	29.70	.001	.180	1.00
		<i>SD</i>	3.41	.50	3.59				
Autogynephilic Interpersonal Fantasy	0–4	<i>M</i>	2.66 ^a	3.57 ^b	3.00 ^a	7.36	.001	.051	.94
		<i>SD</i>	1.62	.84	1.37				
Fetishism	0–6	<i>M</i>	1.95 ^a	4.58 ^c	2.88 ^b	19.86	.001	.131	1.00
		<i>SD</i>	2.43	2.02	2.56				
Masochism	0–11	<i>M</i>	1.44 ^a	3.74 ^b	3.30 ^b	14.32	.001	.095	1.00
		<i>SD</i>	1.98	3.05	3.08				
Sexual Jealousy ^c	0–8	<i>M</i>	5.97 ^b	4.96 ^a	6.22 ^b	4.09	.018	.029	.72
		<i>SD</i>	2.38	2.71	2.59				
Emotional Jealousy ^c	0–8	<i>M</i>	6.51 ^{a, b}	5.79 ^a	6.98 ^b	6.42	.002	.045	.90
		<i>SD</i>	1.82	2.29	1.78				
Preference for Younger Partners	Any range	<i>M</i>	34.58 ^a	40.12 ^b	32.32 ^a	17.62	.001	.116	1.00
		<i>SD</i>	7.18	9.98	9.28				
Interest in Uncommitted Sex	0–60	<i>M</i>	19.77 ^a	32.71 ^c	24.94 ^b	14.45	.001	.098	1.00
		<i>SD</i>	11.58	12.67	15.43				
Interest in Visual Sexual Stimuli	0–72	<i>M</i>	36.34 ^a	46.38 ^b	41.55 ^b	10.83	.001	.076	.99
		<i>SD</i>	11.06	12.36	12.24				
Importance of Partner Status	0–72	<i>M</i>	39.31 ^{a, b}	40.44 ^b	36.59 ^a	6.17	.002	.045	.89
		<i>SD</i>	8.65	10.81	9.05				
Importance of Partner Physical Attractiveness	0–60	<i>M</i>	30.45 ^b	35.35 ^c	27.48 ^a	12.20	.001	.087	1.00
		<i>SD</i>	7.57	8.34	8.49				
Attraction to Transgender Fiction	0–48	<i>M</i>	5.21 ^a	29.22 ^b	5.35 ^a	145.31	.001	.534	1.00
		<i>SD</i>	5.78	10.82	8.66				

a, b, c Homogenous subsets

^d Sex Linked Behaviors Questionnaire^c Sexual and Emotional Jealousy Scale

Discussion

The results showed that male-to-female transsexual sexuality differed from biological females on a number of variables, and the largest differences were found when transsexuals were classified into two groups. Those classified as autogynephilic scored significantly higher on Attraction to Feminine Males, Core Autogynephilia, Autogynephilic Interpersonal Fantasy, Fetishism, Preference for Younger Partners, Interest in

Uncommitted Sex, Importance of Partner Physical Attractiveness, and Attraction to Transgender Fiction than those transsexuals not classified as non-autogynephilic and biological females. Subject to further investigation, these erotic preferences—especially Attraction to Feminine Males and Attraction to Transgender Fiction—can be seen as notable components or correlates of autogynephilia.

Both groups of transsexual participants scored significantly higher than biological female participants on Recalled

Table 3 Spearman's ρ correlations between autogynephilia measures and scales relevant to Blanchard's hypothesis

		Core Autogynephilia	Autogynephilic Interpersonal Fantasy
Sexual Attraction to Males ^a	Transsexuals	.13	.29**
	Biological females	.22*	.35**
Sexual Attraction to Females ^a	Transsexuals	.37**	.28**
	Biological females	.20*	.01
Attraction to Male Physique	Transsexuals	−.03	.14
	Biological females	.10	.20*
Attraction to Feminine Males	Transsexuals	.37**	.34**
	Biological females	.30**	.26**
Recalled Feminine Gender Identity	Transsexuals	−.08	.05
	Biological females	.04	.16
Attraction to Transgender Fiction	Transsexuals	.52**	.35**
	Biological females	.21*	.16

^a Sex Linked Behaviors Questionnaire

* $p < .05$; ** $p < .01$; two-tailed

Feminine Gender Identity, and Importance of Partner Physical Attractiveness. It was unexpected that transsexuals would score on average higher on childhood feminine gender identity, because transsexuals would be given less opportunity to express their femininity and would be discouraged from doing so in their childhood. One possible explanation for this finding is that a large number biological females reporting sexual attraction to females were included in this study—such persons have been shown to recall less femininity in childhood (e.g., Zucker et al., 2006). Transsexual participants, even those categorized as non-autogynephilic, reported placing greater importance of physical attractiveness of potential partners than biological females. The reason for this phenomenon is unclear—it is possible that transsexuals, being biological males, have been shaped by natural selection to view physical attractiveness as a marker of partner fertility (Bailey et al., 1994); however, non-autogynephilic transsexuals did not score in a significantly more “masculine” direction than biological females on any of the other sexuality parameters relevant to evolution, but autogynephilic transsexuals scored in the more “masculine” direction than other participants on five out of seven of these variables. Overall, biological female and transsexual participants also did not differ on levels of Interest in Visual Sexual Stimuli. This is in spite of Money and Primrose's (1968) claim that male-to-female transsexuals are more responsive to visual erotic stimuli, similar to other biological males.

The finding that transsexuals—even those classified as autogynephilic—did not differ significantly on Masochism from biological females was unexpected given previous reports of the prevalence of masochism in transsexuals, and reports of co-occurrence of fetishism (Blanchard & Hucker, 1991; Chivers & Blanchard, 1996; Wilson & Gosselin, 1980).

Autogynephilic transsexual participants reported a significantly greater amount of sexual attraction to transgender

fiction themes than biological females. Transsexuals most commonly endorsed themes of magical transformation into a female, having to be transformed into a female as part of a deal, bet or dare, and gender body swaps. However, some transsexuals endorsed all of the themes, and no clear pattern appeared among them. We conclude that sexual fantasy to certain transgender fiction themes does not appear to be predictive of transsexualism. This finding supports Docter's (1988) belief that these themes are of little use in distinguishing individual's motives.

Contrary to Blanchard's (1989) findings, when the transsexual participants were divided into autogynephilic and non-autogynephilic groups, they did not differ significantly on sexual orientation measures. Among transsexual participants, the Core Autogynephilia Scale positively correlated with Sexual Attraction to Females—in line with Blanchard's research. However, further analysis of the transsexual subgroups revealed notable diversity within the groups. The average score of Sexual Attraction to Males was higher for transsexuals classified as autogynephilic than for transsexuals classified as non-autogynephilic, although this difference was not significant, this is at variance with Blanchard's theory. Also, 68% of transsexuals classified as non-autogynephilic scored the highest possible score (4) on the Sexual Attraction to Females scale. Finally, among the transsexuals classified as autogynephilic, none scored low scores (from 0 to 2 on a scale of 0–4) on both the Sexual Attraction to Males and Females scales that would be expected if they were asexual—one of the sexuality subgroups of Blanchard's autogynephilic transsexuals. Possible explanations for this lack of asexuality include more liberal attitudes towards sexuality in today's culture, and participants in Blanchard's research reporting a greater asexuality if they believed this would increase their chances of receiving medical intervention. Attraction to Male Physique was positively correlated with Sexual Attraction to

Males among autogynephilic transsexuals. If Blanchard's hypothesis that the sexual attraction to males experienced by bisexual transsexuals is to include them as props in the fantasy of being regarded as a woman, as opposed to sexual interest in the male body is true then we would not expect to see this positive correlation, or we would at least expect this correlation to be lower than the corresponding correlations for non-autogynephilic transsexuals and biological females. However, it is still possible that this attraction to the male physique could develop along with the secondary emergence of attraction to males that Blanchard describes. Also, contrary to expectation Recalled Childhood Feminine Gender Identity Scale did not correlate with autogynephilia measures.

We conclude that while Blanchard's two-group classification of male-to-female transsexuals appears to have merit for significant proportion of transsexuals, there is still diversity in the experiences of transsexuals, and a simple categorization may not completely represent this diversity.

Limitations

In the questionnaire, changes were made to the questions in the Core Autogynephilia scale so that participants were asked if they have ever been sexually aroused when picturing themselves with attractive or more attractive female physical features. The responses were also altered from a yes/no format, and the skip instructions were changed. All of these alterations to the scale made these research findings less comparable to Blanchard's research. Also, as outlined in the Methods section, the Sex Linked Behaviours Questionnaire, Core Autogynephilia, Autogynephilic Interpersonal Fantasy, Fetishism, and Masochism scales were originally measured using a response scale that had questionable validity. To salvage some valid data their response scales were altered to dichotomous *yes* or *no*. However, this resulted in restriction of range of the scores, and a large proportion of participants scored the maximum possible score on many of these scales.

A further limitation of this research was that it relied entirely on self-report. Blanchard (1985b) reported that the group that he would later label autogynephilic may over report their femininity and under report the extent of their cross-gender sexual arousal. From clinical and research observations, previous researchers have claimed that non-androphilic transsexuals may consciously or unconsciously distort their responses to appear less autogynephilic (Bailey, 2003; Blanchard, Clemmensen, & Steiner, 1985). It is beyond the scope of this research to assess whether participants were distorting their answers. However, we believe participants would be less likely to consciously distort their responses in this study because their answers were anonymous and had no implications for whether they will receive treatment in a clinical setting.

Another limitation was the susceptibility of this research to manipulation. Although this is an issue with most Internet surveys, the contentiousness of the subject matter in this survey would make it more susceptible to dishonesty. Many transsexuals have strong feelings about autogynephilia (Lawrence, 2004) and could have manipulated the survey by completing it many times with answers that they believe would either discredit or confirm the theory, depending on their beliefs. However, the length of the survey (162 questions) may have discouraged participants from answering it many times—our system showed us that most participants took longer than 25 min to complete it. In addition, we did not see any suspicious responding in the data, such as a lot of responses in a short period. Furthermore, distinct and often thoughtful comments were made by 71.4% of transsexual participants who completed the questionnaire on the Internet when given the opportunity to comment on Blanchard's theory of autogynephilia and on the survey in general. Although we did not see any signs of suspicious activity, we are aware that this may have been a possibility, and this is a considerable limitation to our findings.

The recruitment methods used in this research also contributed to a biased sample. The biological female participants were either recruited through first-year psychology classes or through Internet mailing lists and message boards for persons with interests in psychology, sex research, or transsexualism (e.g., support groups for family and friends of transsexuals). The significant proportion of university students in the biological female sample resulted in a large number of participants in the 18–22 year age group. Among the transsexual sample, those who access online transsexual support groups and mailing lists were also likely to be over-represented. Europeans were also overrepresented in the overall sample, and the participants appeared to be more educated than the general population. Also, a number of previous studies have shown that females volunteering for sexuality research are less sexually inhibited than the general population (Strassberg & Lowe, 1995). It is likely that the present sample was biased in this way as well.

Finally, our findings bring up an area in need of further research. The concept of sexual attraction to oneself as a woman (autogynephilia) has never been assessed among biological female participants previously. Although a number of biological female participants endorsed items on the Core Autogynephilia and Autogynephilic Interpersonal Fantasy scales, no previous studies have reported biological females with such sexual attraction. Because of this, it is unlikely that these biological females actually experience sexual attraction to oneself as a woman in the way that Blanchard conceptualized it. However, the scales used in this research were not sufficient for examining this, so further research is needed to confirm it.

Appendix

Attraction to Male Physique Scale

1. I find certain aspects of the male body sexually appealing: “Not at all” (0), “Slightly” (1), “Moderately” (2), “Quite” (3), “Extremely” (4).

If participants answered “not at all” to question 1, then they do not answer the remainder of the scale.

2. I find a male’s face (e.g., eyes, smile) to be particularly sexually appealing: “Strongly agree” (6), “Agree” (5), “Tend to agree” (4), “Undecided” (3), “Tend to disagree” (2), “Disagree” (1), “Strongly disagree” (0).
3. I find a male’s body (e.g., chest, arms, genitalia) to be particularly sexually appealing: “Strongly agree” (6), “Agree” (5), “Tend to agree” (4), “Undecided” (3), “Tend to disagree” (2), “Disagree” (1), “Strongly disagree” (0).
4. The first thing I notice about when I meet a male that I am sexually attracted to is: “His face (e.g., eyes, smile)” (4), “His body (e.g., chest, arms)” (4), “The way that he seems to admire me” (0), “I am not sexually attracted to males” (0).
5. I am currently in (or would like to have) a long-term committed relationship with a male: “Strongly agree” (6), “Agree” (5), “Tend to agree” (4), “Undecided” (3), “Tend to disagree” (2), “Disagree” (1), “Strongly disagree” (0).
6. A male showing a sexual interest in me is something I find sexually arousing: “Strongly agree” (0), “Agree” (1), “Tend to agree” (2), “Undecided” (3), “Tend to disagree” (4), “Disagree” (5), “Strongly disagree” (6).

Attraction to Feminine Males Scale

All responses to questions scored: “Not at all” (0), “Slightly” (1), “Moderately” (2), “Quite” (3), “Extremely” (4).

1. I find feminine physical features are sexually attractive on males.

If participants answer “not at all” to question 1, then they do not answer the remainder of the scale.

2. I find long hair on males to be sexually attractive.
3. I find shaved legs to be sexually attractive on males.
4. I find it sexually attractive when a male wears articles of female clothing.
5. I find males who have a feminine figure to be sexually attractive.
6. I find males who have feminine mannerisms to be sexually attractive.

7. I find people who were born as males but have female breasts to be sexually attractive.
8. I find males who identify as feminine to be sexually attractive.

Attraction to Transgender Fiction Scale

All responses to questions scored: “Not at all sexually arousing” (0), “Slightly sexually arousing” (1), “Moderately sexually arousing” (2), “Very sexually arousing” (3), “Extremely sexually arousing” (4).

Please indicate how sexually arousing you would find the following types of stories.

1. A story in which an unruly boy as a form of punishment must dress as a girl or become a girl through other means.
2. A magic or science fiction themed story in which a male and a female character swap places.
3. A story in which the main character, a male, is caught either fully dressed as female or wearing female undergarments and must suffer or dress more as a result of being caught.
4. A story in which the main character is transformed into a female as the result of making a deal, part of a bet or accepting a dare.
5. A story that involves a general male-to-female cross-dressing theme.
6. A story that involves a female dominating a male or a woman who uses an authoritarian attitude.
7. A story in which by some magical means a male is transformed into a female.
8. A story in which a male has his mind altered by hypnosis or brainwashing to stop resisting feminizing changes forced on him.
9. A story in which the main character, a male, is physically forced or blackmailed to dress as a female, or be transformed into a female against their will.
10. A story that contain scenes where the main character, a male, gets their hair cut, rolled or colored into a feminine style either at home or in a hair salon.
11. A story that contains scenes where female hormones are administered to the main character either voluntarily or involuntarily.
12. A story that contain scenes where the main character, a male, wears very high heels.

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