Transsexuality and Ordination

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The issue of transsexuality is an extension of the issue of homosexuality. To understand rightly the problem with transsexuality one must first understand the problem with homosexual practice.

The Related Problem of Homosexual Practice

What Scripture finds most problematic about homosexual behavior is that it "dishonors" the sacred integrity of maleness or femaleness stamped on one's body (so the language of Rom 1:24, 26). Sexual relations are not simply a higher degree of intimacy. If it were otherwise, if sexual relations were merely an extension of generic love, then it would be acceptable to apply the love commandment[1] to having sexual relations with everyone whom one meets: the entire church to which one belongs and one's non-Christian friends,[2] one's close blood relations,[3] persons of the same sex, and children.[4]

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[1] By "the love commandment" here is meant the commandment in Lev 19:18 to "love your neighbor as yourself." Jesus designated this as the second greatest commandment (Mark 12:28-34) and liberally defined "neighbor" as anyone with whom one comes into contact, even an enemy (Luke 10:25-37; Matt 5:43-48). An even greater "love commandment" is the commandment in the *Shema*, Deut 6:4-5, "love Yahweh your God with all your heart and with all your soul and with all your might," which Jesus assessed as the first greatest commandment and variously defined as "doing the will" of our heavenly Father, denying oneself, taking up one's cross, or losing one's life (e.g., Matt 6:10; Mark 8:34-37; 14:36)—in essence, making God more important than our own lives and deepest innate desires.

[2] Note that while Jesus universalized the love commandment to apply to everyone with whom one comes into contact, he developed a sexual ethic that limited the number of sexual partners to one other person of the other sex lifetime (Mark 10:2-12; Matt 5:27-32). Obviously, then, one cannot deduce the requirements for sexual unions solely on the basis of an application of the love commandment—an error often committed by those in the church who advocate for homosexual unions. Jesus had a distinctive sexual ethic, not merely a series of sexual customs to be tested against the love commandment. The "twoness" of the sexes highlighted in Gen 1:27 and 2:24 became the basis by which Jesus restricted the number of partners in a sexual bond, whether concurrently or serially, to two persons. If the union of the two sexes brings together the only two primary sexes that exist on the sexual continuum, then a third party is neither necessary nor desirable.

[3] Certainly two close blood relations, say, a man and his mother or a woman and her brother, have the capacity for entering into a committed and caring sexual union. Obviously, however, things such as care, love, commitment, and monogamy are secondary to meeting the non-incestuous, structural prerequisites for the sexual bond. Leviticus 18:6 hints at the problem with incest when it declares: "No one shall approach any flesh of his flesh to uncover nakedness." The problem with incest is, first and foremost, that the persons

As it is, both church and society recognize that sexual relations go beyond "more love" and as such must correspond to certain formal or structural prerequisites of embodied existence, including prerequisites involving species (no human-animal), sex or gender (no same-sex bond), degree of blood relatedness (no incest), number of persons in the sexual union (no more than two),[5] and age (no adult-child bonds).

Sexual relations *merge* or *join* two persons into an integrated sexual whole or "oneness" (Gen 2:24; 1 Cor 6:16). The act of intercourse partly effects and partly symbolizes this broader holistic merger of two persons. Because there are only two primary sexes, "male and female" (Gen 1:27) or "man" and "woman" (Gen 2:24), sexual intercourse represents the merger of the two halves of the sexual spectrum.[6] What a man brings to the table, so to speak, of a sexual union is his essential maleness; a woman, her essential femaleness. What is lacking in one's sexual makeup, if one seeks to be joined to another, is a person of the other sex, not a person of the same sex. A male representing one half of the sexual spectrum joins himself to a female who represents the other half. Two sexual halves reconstitute a sexual whole.[7] This dynamic is illustrated beautifully (if symbolically) in Gen 2:21-24 where an originally undifferentiated human has a "side" removed to form woman. A man may become "one flesh" with a woman because out of one flesh woman emerged.

However, the "logic" of a same-sex sexual bond is that each person constitutes only half his or her given sex: a merger of half-males or half-females. On a sexual level this dishonors the person whom God created a man or a woman to be. Minimally, it is sexual narcissism: arousal for the distinctive features of one's own sex. Maximally, it may also

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involved are too much structurally alike on a familial level. The measurable problems in procreation are only the symptom of the root problem.

[4] Most parents would give their lives for their children, so intense is their love for them. But if a parent introduces sexual activity into the parent-child bond, neither church nor society regards this as a particularly strong love but rather as child abuse.

[5] Women were always governed by a monogamy standard (i.e. no polyandry, multiple husbands). Jesus' emphasis on the twoness or duality of the sexes as a basis for the twoness of marriage in Gen 1:27 and 2:24 implicitly revoked the exemption that Moses gave men to engage in polygyny (multiple wives).

[6] Note that the phenomenon of the "intersexed" (hermaphrodites), those showing gender ambiguity in terms of genitalia or chromosomal structure, do not represent a "third sex," as is sometimes asserted, but rather, at most, an amalgam of the two primary sexes. Extreme gender ambiguity, where the person is poised roughly halfway between male and female, is very rare: not 1% but only a small fraction of 1%. Usually an allegedly intersexed person has a genital abnormality that does not significantly straddle the sexes; for example, females with a large clitoris or small vagina, or males with a small penis or one that does not allow a direct urinary stream. These abnormalities may be significant enough to warrant surgery but they do not put in serious doubt the primary sex of persons who have them. Rare instances of extreme gender ambiguity no more constitute adequate grounds for dismissing the existence of two primary sexes and doing away with proscriptions of same-sex intercourse than do ambiguities in defining pedophilia or incest constitute grounds for eradicating rules against these. Similarly, rare instances of conjoined (so-called "Siamese") twins are no argument for doing away with the principle of the primary "twoness" of a sexual bond. Finally, neither homosexual persons nor transsexuals are, as a rule, "intersexed" (see the appendix).

[7] For the construction of a nature argument against homosexual practice see: Robert A. J. Gagnon, "Homosexuality," in *New Dictionary of Christian Apologetics* (eds. C. Campbell-Jack, G. J. McGrath, and C. S. Evans; Leicester, U.K.: Inter-Varsity Press, 2006), 327-32; also, idem., "Why the Disagreement over the Biblical Witness on Homosexual Practice? A Response to Myers and Scanzoni, *What God Has Joined Together?*" in *Reformed Review* 59 (2005): 30-46. Online: http://www.westernsem.edu/wtseminary/assets/Gagnon2%20Aut05.pdf.

be sexual self-deception: the false perception that one is 'other' or different from one's own sex; that is, in some way deficient and therefore needing to merge sexually with another of the same sex to complement one's own deficiencies.[8]

The incongruous fit of sexual anatomy and physiology in homoerotic bonds bespeak a deeper structural incompatibility that extends to sexual stimulation patterns and distinctive psychological features of the sexes. Incongruity comes out in too much formal sameness. Given the absence of a genuine sexual complement it is not surprising that in a same-sex coupling the extremes of the given sex are not moderated and gaps are not filled quite so well. That is the major reason why male homosexual bonds and female homosexual bonds experience disproportionately high rates of measurable harm but in different areas that correspond to gender differences: for homosexual males, much higher rates of sexually transmitted disease and numbers of sex partners over the course of life than for homosexual females, to say nothing of heterosexual males and females; for homosexual females, higher rates of mental health issues and shorter term unions on average than even for homosexual males.[9] These are symptoms of the root problem: attempts at integrating with another who is already one's sexual same, not one's sexual complement.

The Problem with Transsexuality

Transsexuality is in some respects an even more extreme version of the problem of homosexuality: an explicit denial of the integrity of one's own sex and an overt attempt at marring the sacred image of maleness or femaleness formed by God.[10] Here it is not just a case of a self-affirmed attraction and behavior that has the practical effect of

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[8] To be sure, gender nonconformity in early childhood is a typical indicator of, or risk factor for, subsequent homosexual development. Even scientists who self-identity as homosexual have acknowledged a correlation between gender nonconformity in childhood and homosexual development (so, for example, Simon LeVay and Dean Hamer, proponents of the so-called "gay brain" and "gay gene" theories, respectively). Daryl Bem, a homosexual professor of psychology at Cornell University, has developed an "exotic becomes erotic" theory for homosexual development, arguing that homosexual attraction is an outgrowth of a child's perceived difference from members of the same sex (e.g., *Psychological Review* 103 [1996]: 320-35). J. Michael Bailey, a heterosexual professor of psychology at Northwestern University, has done work on the mating psychology of homosexual males in addition to his well-known work on homosexual identical twins. He contends that homosexual males desire in prospective sexual partners the masculinity that they wish they themselves possessed (*The Man Who Would Be Queen: The Science of Gender-Bending and Transsexualism* [Washington, D.C.: Joseph Henry Press, 2003], 76-81; online: http://books.nap.edu/books/0309084180/html/). All of these researchers are strong proponents of societal acceptance of homosexual unions. However, entrance into a homosexual bond only exacerbates and regularizes the misperception that one is an "other" in relation to members of one's own sex. It does so by attempting to meet a perceived deficit in one's own sex or gender through structural supplementation with another person of the same sex rather than through affirmation of one's already intact sex in intimate, but non-sexual, relations with persons of the same sex.

[9] See Gagnon, "Immoralism, Homosexual Unhealth, and Scripture: Part II: Science: Causation and Psychopathology, Promiscuity, Pedophilia, and Sexually Transmitted Disease" (Aug. 2005); online: http://www.robgagnon.net/articles/homoHeterosexismRespPart2.pdf

[10] Some scientists actually refer to one type of transsexuals as "homosexual transsexuals" (see the appendix).

compromising the integrity of one's sex as male or female. It is a decisive complaint or rebellion against God for having created oneself as male or female.

As if to underscore the complaint and rebellion, "sex reassignment surgery" (SRS)—a benign name for what others might designate intentional mutilation or butchering—is major, painful, and expensive surgery whose results are incomplete at best. One has to go far in an effort to overturn God's design and even then it is never complete. Typically SRS involves the surgical removal of perfectly healthy internal genitals (testes or ovaries/uterus) and radical alteration of perfectly healthy external genitalia. For male-to-female (MF) transsexuals this involves "vaginoplasty": gutting the insides of the penis, creating a "vaginal" cavity, and constructing a "clitoris" from the head of the penis. For female-to-male (FM) transsexuals this involves phallic plastic surgery and cutting off of the breasts. For MF transsexuals "transformation" also entails painful electrolysis of facial hair and sometimes also electrolysis of body hair, facial plastic surgery, voice surgery, breast implants, and silicone injections in the hips and buttocks.[11] The superficial character of these attempts at physical reassignment is obvious from the fact that the chromosomal inheritance doesn't change. Functioning internal genitalia consistent with the new sex cannot be created. The "reassigned" body does not respond by producing its own other-sex hormones (whether testosterone or estrogen). Hormone treatment, through patch, pill, or injection, is lifelong. Fertility is destroyed. For MF transsexuals the new "vagina" must be regularly dilated through the use of dildo-like plastic rods. And even after very expensive and complete procedures most transsexuals still don't quite look, sound, and act like members of the sex that they were allegedly reassigned to (this is especially true of a category of transsexuals known as "autogynephilic homosexuals"; see appendix below).

To be sure, transsexuals and their apologists will often contend, especially in light of a 2000 Dutch study and its 1995 precursor (see appendix below), that they are not rebelling against their body but merely choosing that part of their body where their true self exists, the brain. In effect they choose the kernel and discard the husk. Even this sort of argument retains a gnostic feel; that is, a sort of anti-body dualism. The body at odds with the brain is viewed as insignificant and dispensable in relation to mental processes. Scripture, however, views the whole body as integrally related to the understanding of the self, with embodied existence serving as the basis for establishing the structural prerequisites for sexual activity noted earlier. When Genesis 2:21-24 refers to woman being formed from a part of the "earth creature" (*'adam*, related to *'adamah*, "earth, ground") the Hebrew term used, though commonly translated "rib" in this passage, refers nearly everywhere else in the Old Testament to the "side" of sacred architecture: the ark, tabernacle, incense altar, temple rooms.[12] The implication is that to tamper with one's creation as male or female (here by seeking to mask or even put under the knife one's embodied masculinity or femininity) is sacrilege.

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[11] Bailey, *The Man Who Would Be Queen*, 196-200.

[12] 39-40 times. The one exception is when the word is used of the side of a hill. See Robert A. J. Gagnon, "The Old Testament and Homosexuality: A Critical Review of the Case Made by Phyllis Bird," *ZAW* 117 (2005): 367-94, here pp. 387-89.

Scripture is not wholly silent on the issue of transsexuality. There was an identifiable group of men in ancient Mesopotamia variously known as *assinnu*s, *kurgarrû*s, or *kulu'u*s who attempted to transform their masculinity into femininity under the influence of the gender-ambiguous goddess Inanna or Ishtar.[13] The goddess, it was believed, had transformed each into a "man-woman" or even a "dog-woman," with "dog" denoting a disgusting transformation of masculinity and possibly also intercourse in a doglike position. Accordingly, they dressed like women, wore makeup, carried a spindle (a feminine symbol), and otherwise attempted to have a feminine affect and manner. They resemble the group of men referred to in Deuteronomy and the Deuteronomistic History as the *qedeshîm*, literally, "holy (sanctified, consecrated) men" (Deut 23:17-18; 1 Kings 14:24; 15:12; 22:46; 2 Kings 23:7; cf. Job 36:14). These persons are closely associated with Asherah in 1-2 Kings, who, in turn, is closely related to (and, at times, possibly identified with) Astarte (Baal's consort and the Canaanite equivalent to Ishtar). One of their cultic functions was to offer their bodies to other men for same-sex intercourse. Their attempts at transforming their masculinity into femininity, as well as engaging in homosexual practice, are labeled an "abomination" by Deuteronomy (23:18) and the Deuteronomistic Historian (1 Kings 14:21-24). Indeed, Deuteronomic law treats even cross-dressing as an "abomination" (22:5). Similarly, the figures referred to as the *malakoi* (literally, "soft men") in 1 Corinthians 6:9, who are among those who are excluded from inheriting the kingdom of God, refer to men who feminize themselves in appearance and manner to attract male sex partners (not necessarily associated with any cult).[14] Women who masculinized themselves and had sex with other women were also known (and criticized) in the ancient world.[15]

Isaianic prophecy about welcoming eunuchs (Isaiah 56:4-5) does not lead to a different conclusion since the text has in view Israelites exiled to Babylon who were made eunuchs against their will (compare Isa 39:7), not persons who sought to change their sex, and presumes that they are not in a sexual relationship (note the promise to give them "a name better than sons and daughters"). Yes, Jesus compared "eunuchs who made themselves eunuchs because of the kingdom of heaven" with "eunuchs who were born so from the womb of their mother" and "eunuchs who were made eunuchs by humans" (Matt 19:12). The comparison, though, assumes that neither the born-eunuchs nor the made-eunuchs (i.e., those castrated against their will) are having sexual relations, since that is the defining feature of the "eunuchs who made themselves eunuchs because of the kingdom of heaven." Moreover, neither the born-eunuchs or made-eunuchs have made

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[13] The goddess was identified with Venus: masculine as the morning star and feminine as the evening star. For further discussion of these figures see Gagnon, *The Bible and Homosexual Practice* (Nashville: Abingdon Press, 2001), 48-49; for their connection to the *qedeshîm* in ancient Israel, ibid., 100-110.

[14] For discussion of this term see Gagnon, *The Bible and Homosexual Practice*, 303-32; idem, *Homosexuality and the Bible: Two Views* (Minneapolis: Fortress Press, 2003), 82-83, esp. with online notes 97-99 at http://www.robgagnon.net/2Views/HomoViaRespNotesRev.pdf; idem, "Does Jack Rogers's New Book 'Explode the Myths' about the Bible and Homosexuality and 'Heal the Church?' Part 3," pp. 9-11, online: http://www.robgagnon.net/articles/RogersBookReviewed3.pdf.

[15] E.g., the mid-second century A.D. satirist Lucian of Samosata refers negatively to a rich woman named Megilla who had taken a "wife," shaved her own head like a male athlete, and declared herself to be "all man" despite not being even a hermaphrodite: "I was born a woman . . . but I have the mind and the desires and everything else [besides genitalia] of a man" (*Dialogues of the Courtesans* 5). Lucian does not indicate any association of the woman with particular cultic rites or goddesses.

themselves eunuchs. The only group that Jesus speaks of as "making themselves eunuchs" is that group that does so only in a metaphorical sense, for they do not mar their body or seek to change their sex in any way. Rather, they only forego marriage between a man and a woman, the one permitted venue for sexual relations, in order to maximize their efforts at proclaiming the kingdom of God (Paul makes a similar point in 1 Cor 7:32-35). So there is no justification in these texts for ordaining persons who actively seek to change their own sex.

The rhetorical attempt by many transsexuals and their apologists to distinguish rigidly between the brain as the transsexual's true sexual self and the rest of the transsexual's body as relatively superficial and external is scientifically misleading. For one thing, the brain of transsexuals is not *wholly* differentiated as female-like. The Dutch studies found only one part of the sexually differentiated regions of the brain in transsexuals to resemble the other sex (namely, the BSTc; see appendix). In what sense can this be the "true sexual self" when it is only one part of dimorphic brain structures and, moreover, may not be entirely immune to life's experiences or even to some hormone-effecting interventions? In what sense can this be the "true sexual self" when it is neither a necessary nor a sufficient condition for a self-recognition of transsexuality? For the very Dutch study used by some to support a deterministic model actually shows that some nontranssexual males, both heterosexual and homosexual, had female-like BSTc's while one of the six or seven MF transsexuals had a male-like BSTc.

Ken Zucker, formerly head of the Child and Adolescent Gender Identity Clinic in Toronto and editor of the *Archives of Sexual Behavior*, and co-author of the comprehensive work *Gender Identity Disorder and Psychosexual Problems in Children and Adolescents*,[16] correlates difficult circumstances in childhood with an increased risk for developing GID (Gender Identity Disorder), including such factors as broken families, childhood behavioral problems other than GID, lower social status, lower IQ, and immigrant status. Zucker is no social conservative. He rejects psychotherapeutic intervention for homosexuality. But he does believe that psychotherapy can be effective in helping children to accept their sex which, in turn, will lessen the likelihood that a boy who wants to become a girl will grow up to be a man who wants to become a woman (and vice versa for girls). Even Bailey, as staunch an essentialist in matters of sexual orientation as one is likely to find and undecided on the question of whether Zucker's treatment approach works, acknowledges that societal pressures against transsexuals in countries like the United States (as opposed to countries like the Netherlands) probably reduce the number of children who would otherwise grow up wanting to become the other sex.[17]

In addition, in other respects the brains of MF transsexuals remain male differentiated and the brains of FM transsexuals female differentiated. Male patterns of sexual arousal and personality traits persist in MF transsexuals. As J. Michael Bailey notes: "When we ask [male-to-female] transsexuals about their level of interest in casual sex, they respond pretty much like gay men and straight men, all of whom are more interested than either

[16] New York: Guilford Press, 1995.
[17] *The Man Who Would Be Queen*, 32-34.

lesbians or straight women, on average."[18] It might be reasonably asked whether a duck would cease to be a duck if scientists could alter a tiny part of its brain to make it think that it is a dog. A brain abnormality, particularly one that is not absolutely deterministic, does not override all the other structures of the human body.

Conclusion

Transsexuality represents a conscious and sacrilegious attempt at overriding the structures of maleness or femaleness created by God and present in the chromosomes, genitalia and numerous other external features, hormones, and at least some dimorphic brain structures. Scripture regards such attempts at overriding one's birth-sex as abhorrent. Moreover, there is no conclusive evidence that any sex-incongruent features of the brain are 100% congenitally determined or operate on a behaviorally deterministic model. Even if they did, it would not change the overall configuration of the person's sex or give the individual a license to act sexually in ways that God deems abhorrent. Jesus Christ, and not any innate human impulses, is Lord. Accordingly, persons who attempt to change their sex should be prohibited from becoming ordained ministers of the church.

[18] Bailey, *The Man Who Would Be Queen*, 185.

Appendix: Background Information Pertaining to Transsexuality[19]

In this appendix some background information pertaining to transsexuality is give: defining terms, two main types of male-to-female transsexualism, and an examination of an influential Dutch study that has suggested to some a model of congenital determinism for transsexuals.

Defining Terms

Transsexuals are persons who experience a severe disjuncture or dissonance between their physically determined sex and their psychologically perceived gender identity. Simply put, they identify with the opposite gender, rejecting the most conspicuous features, at least, of their bodily sex. Here a distinction is often made between *gender*, defined as one's conscious self-presentation as male or female, and *sex*, defined as the usual identifiable structures of maleness or femaleness. The latter include, but are not limited to:

- Chromosomal configuration (male: XY; female: XX)
- Gonads or internal genitalia (male: testes; female: ovaries), consequent sperm or egg production, adult hormone levels, and the distinctive features of the male and female sex drives
- External features, the most obvious being the genitalia (male: penis; female: vagina) and breast development, but extending also to numerous other outward physical characteristics such as: facial and body hair; voice pitch, beat, and articulation; and skeletal features of the face and body including, for the face, differences in chin, hairline, cheeks, brow ridge, eyebrows, and noses; and, for the body, differences in hips, bottoms, and shoulders, which also contribute to a person's gait, and overall and proportional sizes of the torso, legs, feet, and hands.

A male-to-female (MF) transsexual often (though not always) claims that he is a woman trapped in a man's body; a female-to-male (FM) transsexual that she is a man trapped in a woman's body. This is the final stage of what psychological and psychiatric literature refers to as *gender identity disorder* (GID) or *gender dysphoria*. Hermaphrodites or the "intersexed" are generally distinguishable from transsexual persons in that they are to some degree sexually ambiguous as regards external genitalia, internal genitalia, and/or chromosomal configuration. Nontranssexual male transvestites are sexually aroused by wearing women's clothes but, unlike transsexuals, are not repulsed by their sexual organs and do not seek a permanent change of their gender identity.

According to DSM-IV, prevalence rates of transsexualism are one in 30,000 men for MF transsexuals and one in 100,000 women for FM transsexuals. As these numbers indicate, MF transsexuals outnumber FM transsexuals by roughly three-to-one.[20]

[19] This material was written in 2004. It has not been updated.

Two Main Types of Male-to-Female Transsexualism

A world expert in MF transsexualism by the name of Ray Blanchard, Head of the Clinical Sexology Program of the Clarke Institute of Psychiatry in Toronto, has distinguished between two main types (acknowledging, to be sure, variations on the typical): homosexual transsexualism and autogynephilic (pronounced otto-guy-nuh-FIL-ik) or nonhomosexual transsexualism (comprising heterosexual, bisexual, and asexual transsexuals).[21]

Homosexual transsexuals are sexually attracted to men and are generally repulsed by the thought of sexual relations with women. Like many homosexual men, they were feminine boys whose femininity would have been obvious to outsiders. But unlike nontranssexual homosexual males they came to see themselves, *consciously* and *deliberately*, as sexual counterparts to men, women. They primarily desire very masculinized straight men. Typically they have been employed in stereotypically female jobs and began living full-time as a woman by their mid-twenties. The common experience of childhood GID among nontranssexual homosexual men and homosexual transsexuals suggests, as Bailey notes, that homosexual transsexuals are "a type of gay man."[22]

Autogynephilic transsexuals are, as the name suggests, erotically aroused by the thought or image of themselves as women (*auto* for "self," *gyne* for "woman," and *philic* for "loving"; i.e., loving oneself as a woman). They tend to be attracted to women and men, sometimes to one or the other or, if asexual, to neither. Chiefly, however, they are sexually excited by the image of themselves as females with vaginas. As adolescent boys they found sexual gratification through secretly wearing women's lingerie, looking in a mirror, and masturbating to that image. Homosexual transsexuals as boys also cross-dressed but were not sexually aroused thereby. Since autogynephilic transsexuals as boys engaged in male sports and had male friends, they were not perceived by others to be particularly feminine boys—another distinguishing feature from homosexual transsexuals. Typically they have been married to a woman before becoming an overt transsexual, find employment in 'masculine occupations' (technology, science, etc.), don't come out publicly as women until their late thirties or beyond, and have a more difficult time than homosexual transsexuals in passing themselves off as women.

Essentially autogynephilic transsexuals are misdirected heterosexuals who have transferred the woman of their desires from outside themselves to within themselves; in

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[20] A. Michel et al., "A psycho-endocrinological overview of transsexualism," *European Journal of Endocrinology* 145 (2001): 365-76, here p. 367.

[21] See, for example, the following works by Blanchard: "Clinical observations and systematic studies of autogynephilia," *Journal of Sex and Marital Therapy* 17:4 (1991): 235-51; "Varieties of autogynephilia and their relationship to gender dysphoria," *Archives of Sexual Behavior* 22:3 (1993): 241-51; and "Early history of the concept of autogynephilia," *Archives of Sexual Behavior* 34:4 (2005): 439-46. His research has been incorporated extensively into the work of J. Michael Bailey of Northwestern University (*The Man Who Would Be Queen*, esp. pp. 145-212) and Anne Lawrence, a physician, sex researcher, and postoperative MF transsexual (see www.annelawrence.com/twr).

[22] *The Man Who Would Be Queen*, 178-79.

short, they are men who are heterosexually oriented to the woman inside them. Anne Lawrence refers to them as "men trapped in men's bodies" rather than "women trapped in men's bodies." For obvious reasons it is not unusual for autogynephilic transsexuals to hide from others the fact that they get sexual thrills from thinking of themselves as a woman.

Causation: The Dutch study by Kruijver et al.

One study has been responsible for claims of primary congenital causation of transsexual feelings. A 2000 Dutch study by F. Kruijver, J.-N. Zhou, et al.[23] examined a sexually differentiated area of the brain known as the BSTc (the central subdivision of the bed nucleus of the stria terminalis) obtained from 42 deceased patients:

- 9 presumed heterosexual males
- 10 presumed heterosexual females
- 9 homosexual males (all of whom had died of AIDS)
- 6 MF transsexuals (among whom one committed suicide, another died of AIDs, and a third died of liver disease owing to alcohol consumption)
- 1 male with very strong cross-gender identity feelings who had not received hormone treatment
- 1 FM transsexual
- 6 heterosexual males and females with various sex hormone disorders

The study found that:

1. Men had almost twice as many SOM (somatostatin) neurons in the BSTc as females.
2. Homosexual males had neuron numbers in the male range.
3. Most importantly, male-to-female transsexuals had neuron numbers in the female range, while the one female-to-male transsexual in the study had neuron numbers in the male range.
4. Comparisons with the six heterosexuals with various hormone disorders indicated that "estrogen treatment, orchiectomy [castration], CPA treatment [cyproterone acetate, an antiandrogen, i.e. antitestosterone, drug], or hormonal changes in adulthood" were "extremely unlikely to be the underlying mechanism of the observed . . . BSTc differences."[24]

Note that this study was a follow-up of a 1995 study by many of the same researchers, incorporating 26 of the brains of that earlier study.[25] Kruijver et al. concluded that "in transsexuals sexual differentiation of the brain and genitals *may* go into opposite

[23] "Male-to-female transsexuals have female neuron numbers in a limbic nucleus," *Journal of Clinical Endocrinology and Metabolism* 85.5 (2000): 2034-41.
[24] Ibid., 2039.
[25] J.-N. Zhou, et al., "A sex difference in the human brain and its relation to transsexuality," *Nature* 378 (1995): 68-70.

directions and point to a neurobiological basis of gender identity disorder" (abstract); that is, that "transsexualism *may* reflect a form of brain hermaphroditism."[26]

Some advocates for transsexualism have argued that this study proves that transsexuality is hard-wired in the brain from birth. Such a conclusion is premature, for at least four reasons.

First, the use of "may" in the study's conclusions is important. The study uses an extremely small sample size, which included only seven transsexuals (eight if one counts the untreated male with strong cross-gender feelings). The best spin that the authors can put on their work is this: "Although our collection of male-to-female transsexual brains is small, it offers *new opportunities to explore* neurobiological correlates of transsexualism."[27] The study is suggestive, not conclusive.

Second, despite the confident assertion of Kruijver et al. that hormone treatment of the transsexuals had no impact on the BSTc neuron count, there are indications otherwise in their study. For example: (a) The male-turned-female transsexual with by far the highest neuron count (i.e. whose BSTc was most male-like) was (coincidentally?) the only one *not* to have had his testicles removed.[28] (b) The sole female-turned-male transsexual, who (coincidentally?) had received twice-a-month testosterone injections for twenty-one years, had a neuron count higher than all nine heterosexual males without sex hormone disorders, higher than all but one heterosexual male (S5) if one adds the three heterosexual males with sex hormone disorders, and higher than all but two males if one adds the nine homosexual males (one homosexual male was only slightly higher). In other words, only two out of twenty-one males had higher BSTc neuron counts than the FM transsexual.[29] The reality is that science currently has no way of determining what

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[26] Kruijver, "Male-to-female transsexuals," 2041; emphases added.
[27] Ibid.; emphasis added.
[28] Kruijver et al. point to the fact that two of the nontranssexual men with sex hormone disorders (S3 and S5) had had their testicles removed because of prostate cancer 3 months and 2 years before death and yet their BSTc neuron count was not in the female range. But one could counter: S3 had only been castrated for 3 months before death, insufficient time for a significant impact on reducing the neuron count, which at any rate was still the third lowest among twelve heterosexual men. And though S5 had been castrated two years prior to death (contrast, however, three-to-twelve years prior to death for the MF transsexuals) and still had by far the highest neuron number of any of the twelve heterosexual males, the castration occurred two years before the very advanced age of death of 86 years (contrast the age of death for the castrated transsexual subjects: ages 43 to 53) when arguably the impact on a lifelong BSTc neuron count could have been negligible. Furthermore, under any circumstances S5 appears to be an oddity, for his BSTc neuron count was one-and-a-third times higher than that of the next highest male of any orientation and almost twice as high as the male mean. Kruijver et al. also point to the fact that the male with cross-gender identity feelings, who had not undergone hormone treatment or sex-reassignment surgery (died age 84), had a BSTc neuron count in the female range. Yet this does not prove that castration had no effect in reducing the BSTc neuron count of the five castrated transsexuals. And it bears mentioning that this subject, for whatever reason, did not find it necessary to seek sex-reassignment surgery in an 84-year life, despite a low BSTc neuron count.
[29] Kruijver et al. argue that the testosterone injections were unlikely to have had an effect on her very high BSTc neuron count because one subject, who had had a tumor for one year before death that produced high levels of testosterone in her blood, had a BSTc neuron count lower than any of the ten heterosexual females without sex hormone disorders. However, can the effects, or lack thereof, of a one-year increase in

the BSTc neuron count was for any of the brains prior to castration or hormone injections. Present-day technology cannot scan measurements from live patients(scientists can't dissect the brain and then restore the patient to life). This, plus the very small sample size of the study, makes it impossible to conclude with any certainty that BSTc neuron numbers cannot be affected by some hormone-affecting medical interventions.

Third, the possibility cannot be excluded that life experiences and behaviors are at least partly responsible for neuron levels in the BSTc of transsexuals. As Neil Whitehead notes, "London taxi drivers . . . have an enlarged part of the brain dealing with navigation."[30] Marc Breedlove, a professor of psychology at Berkeley who is in favor of societal acceptance of transsexuality, responded to the 1995 Zhou et al. study in the June 1996 newsletter of the Psychology Department of the University of California, *Psychologue*:[31]

> Thus there remain two alternative explanations for why the BSTc is smaller in transsexuals. Perhaps as babies these individuals were born with a small BSTc . . . and that small feminine BSTc caused them to regard themselves as feminine and to become transsexuals. But, on the other hand, it is possible that other factors (such as family structure, peer interactions, or random variation) caused these boys to regard themselves as feminine and grow up to be transsexuals. And those same "other factors" may have caused their BSTc to develop a small size.
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> For most laymen the idea that experience can alter the structure of the brain may seem unlikely, but for over 30 years neuroscientists have provided demonstrations that this idea is quite correct. At Berkeley, David Krech, Mark Rosensweig and colleagues found that when rats were raised in enriched environments (with toys and other rats) rather than caged alone, the animals showed many reliable changes in brain structure. Shortly after, David Hubel and Torsten Wiesel of Harvard demonstrated that depriving kittens of visual stimulation to an eye would alter connections between the eye and the brain. Such demonstrations of experience altering brain structure have been extended to monkeys and, in recent years, to humans. For example, a human who had lost his hand as an adult showed clear evidence that the side of the brain controlling that hand was reorganized less than a year after the accident (Yang, T. T., . . . [et al.], "Sensory maps in the human brain," Nature, 386, 592-593, 1994 [letter]). As noninvasive imaging techniques are perfected we can expect to see further demonstrations that experience can alter the adult human brain.

Fourth, and most importantly, even the Kruijver et al. study showed significant variations from the trend.[32]

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testosterone levels on the neuron numbers of the BSTc really be compared with the effects of twenty-one years of testosterone injections? Kruijver et al. also point out that the FM transsexual had stopped taking testosterone injections three years prior to her death. Yet can we assume that this relatively short period of discontinuance would be enough to undo the effects of twenty-one years of hormone treatments on the neuron count of the BSTc?

[30] "Are transsexuals born that way?" *Triple Helix*, Autumn 2000, p. 7.

[31] "The Chicken-and-Egg Argument as It Applies to the Brains of Transsexuals: Does it Matter?"; online at www.genderpsychology.org/psychology/BSTc.html.

[32] See their graph on p. 2036

a) Two of nine *heterosexual males* in the study (two of twelve if one counts the three heterosexual males with hormone disorders) had neuron numbers in the BSTc below the mean for both heterosexual females and MF transsexuals.
b) Three of the nine *homosexual, nontranssexual males* had neuron numbers at or just above the mean for both heterosexual females and MF transsexuals.
c) One of the six *MF transsexuals* (one of seven if one counts the nontreated male with cross-gender identity feelings) had a neuron count near the mean of heterosexual and homosexual males, higher than five of nine (six of twelve) heterosexual males and six of nine homosexual males. Only three of the six (or seven) transsexuals had neuron counts lower than all the heterosexual and homosexual males.
d) One of the ten *heterosexual females* (one of thirteen if one counts the three heterosexual females with hormone disorders) had a neuron count very close to the mean for heterosexual and homosexual males (higher than five of nine [or six of twelve] heterosexual males and six of nine homosexual males). Another of the heterosexual females, though having a lower neuron count than the means for heterosexual and homosexual males, still had a higher neuron count than two of the nine heterosexual males and three of the nine homosexual males.

Thus a substantial minority of the subjects (about 20%) did not correspond to type. What all this means is that, *even if* one discounts the small sample size, the possible effects of some medical procedures for adjusting adult hormone levels, and the effect of life experiences and behaviors on brain differences—not that such factors should be discounted—the 2000 Dutch study still shows that the role played by the SOM neuron number in BSTc is neither necessary nor sufficient for the development of extreme cross-gender feelings. At most one can talk about an important risk factor and probabilities. But a completely deterministic model, the kind that most apologists for transsexualism operate with, is not supported by the Dutch study. Transsexuality is not a *fait accompli* of conditions set at birth. Other factors besides congenital brain differences are likely to be at work affecting both the incidence and intensity of impulses. These include noncongenital environmental factors (e.g., the strength of cultural disincentives, geographic location, and family and peer dynamics or the lack thereof) and incremental choices to individual life experiences (ranging from blind choices to varying levels of conscious acquiescence to impulses).