

The Biological Research on Homosexuality

Book Excerpt: Homosexuality and American Public Life

Edited by Christopher Wolfe; Spence Publishing Co. (Dallas, TX).

This book is based on papers delivered at the 1997 conference, "Homosexuality and American Public Life," held in Washington, D.C. at the Georgetown Conference Center. The book by the same name will be available January, 1999.

The excerpt below is from Dr. Jeffrey Satinover's chapter, entitled, "The Biology of Homosexuality: Science or Politics?" which provides a very comprehensive review of the biological research on homosexuality. He discusses other factors in the backgrounds of homosexuals, including early sexual seduction.

It is important to note that serious research on the biology, innateness, or genetic determinants of homosexuality has only just recently begun. Exactly opposite to what the public is being led to believe, the research that has been done thus far suggests that genetic factors account for, at most, but a small proportion of the risk.

J. M. Bailey and R. C. Pillard, two of the major researchers most widely cited as having demonstrated that "homosexuality is genetic," were forced to admit otherwise by the results of their own research. They themselves wrote:

These studies were designed to detect heritable variation, and if it was present, to counter the prevalent belief that sexual orientation is largely the product of family interactions and the social environment.... Although male and female homosexuality appear to be at least somewhat heritable, environment must also be of considerable importance in their origins.^{1/}

Neuroanatomic Research

In 1991, newspapers primarily on both coasts trumpeted the discovery of a brain difference between homosexuals and heterosexuals. Although the research finding itself was reported fairly accurately, the accounts universally concluded that the discovery had social-policy implications. Commentators triumphantly claimed that the discovery would halt any remaining uncertainty that homosexuality was either a choice, or a consequence of factors in upbringing. Therefore, they claimed, to continue to support anything less than full acceptance of homosexual behavior would be proof positive of prejudicial hatred.



Jeffrey Satinover, M.D.

What precipitated this outpouring? In August of 1991, a San Francisco neuroanatomist, Simon LeVay, published an article in the respected journal *Science*. It reported his finding that a localized cluster (a "nucleus") of cells in the brains of "homosexual" men was twice as large by volume on autopsy as in "heterosexual" men. ^{2/} "Homosexual" and "heterosexual" are in quotations here because in this particular study the definitions of each were extremely imprecise, nor was there any way of verifying sexual orientation, as the subjects were dead.

But this was not the first such discovery. One year before a group reported in *Brain Research* that they had found a similar difference in both volume and number of cells in a different brain nucleus.^{3/} The media did not report this first study because *Brain Research*, unlike *Science*, is read only by neuroscientists. And in contrast to journalists, the neuroscientists themselves genuinely understood the research and its limitations, and saw no reason to make grand pronouncements.

More recently, yet another difference in another part of the brain was reported, also in a prestigious publication, the *Proceedings of the National Academy of Science of the United States of America*. This study claimed that a difference between male homosexuals and heterosexuals was found in the anterior commissure, a structure that divides the left and right halves of the brain. The authors found that the anterior commissure was larger in women and homosexual men than in heterosexual men. This was a group statistical difference, however: the size of the anterior commissure in 27 of the 30 homosexual men actually fell within the range of sizes found among the 30 heterosexual men. As did LeVay, these authors used brain samples obtained preponderantly from men who died of AIDS, introducing another uncontrolled variable into their work.^{4/}

The only other study to examine morphological differences in the anterior commissure—published in 1988 and not mentioned by the press—found, in part, precisely the opposite. Namely it found that the anterior commissure was larger in men than in women.^{5/}

continued on next page

The Brain's Structure Changes with Use

Even if actually present, however, the discovery of brain differences *per se* is on a par with the discovery that athletes have bigger muscles than nonathletes. For though a genetic tendency toward larger muscles may make it easier to become an athlete, and therefore one will more likely become an athlete, becoming an athlete will also certainly give one bigger muscles.

The layperson, encouraged by press accounts, is apt to assume that brain differences must be innate and unchangeable, especially differences in the number of cells as contrasted with the simple volume occupied by a collection of cells. We tend to think of mind as "software" and brain as "hardware," the former plastic and changeable, the latter fixed at birth. We have used this analogy already to good advantage.

But the analogy breaks down at a certain point. Various processes go on throughout life: the selective death of brain cells in response to training or trauma, the establishment of new connections between cells, dramatic increases or decreases in the "thickness" of connections between cells as a result of learning, the loss of interneuronal connections through "pruning." Very unlike our modern computers, the brain's software *is* its hardware.

We know from animal studies that early experience, and especially traumatic experience (this has special pertinence with respect to the childhood histories of male homosexuals as we will discuss later), alters the brain and body in measurable ways. Thus infant monkeys who are repeatedly and traumatically separated from their mothers suffer more or less permanent alterations in both blood chemistry and brain function.^{6/} A similar piece of research on homosexuals with a similarly indeterminate meaning is the recent finding of a protein—an Alpha1-Antitrypsin variant—in the blood of homosexual, but not heterosexual men. Again, we have no way of determining whether this is an innate or an acquired difference, or whether it is even replicable.^{7/}

There is a major current theory about the developmental causes of depression and the interaction of genetics with development. It claims that under conditions of early trauma, a genetically based susceptibility to stress creates a greater vulnerability to intense stress-responses later in life.^{8/} Furthermore, this "vulnerability" is represented physiologically as measurable alterations in the brain. Because what constitutes "stress" depends on one's subjective interpretation of events, the brains in individuals with the same genetically determined biology may respond quite differently. One may demonstrate no brain changes; another may demonstrate very significant changes.^{9/}

Some Lifestyle-Induced Brain Changes

Likewise, in individuals who became blind as adults and then learned Braille, the part of the brain governing the right index finger became progressively enlarged. And just this year, researchers reported measurable increases in brain tissue associated with learned sexual activity in rats.^{10/}

The editor of *Nature* commented on the LeVay research:

Plainly, the neural correlates of genetically determined gender are plastic at a sufficiently early stage.... Plastic structures in the hypothalamus allowing the consequences of early sexual arousal to be made permanent might suit [those who claim an *environmental* origin to homosexuality] well.^{11/}

And of course all this presumes that the research itself was of high quality. Was it? Writing in *Technology Review*, published at the Massachusetts Institute of Technology, two prominent geneticists commented on the quality of the LeVay research. Paul Billings and Jonathan Beckwith write: LeVay "could not really be certain about his subject's sexual preferences, since they were dead."^{12/} His "research design and subject sample did not allow others to determine whether it was sexual

behavior, drug use, or disease history that was correlated with the observed differences among the subjects' brains."^{13/} LeVay's very method of defining homosexuality was very likely to "create inaccurate or inconsistent study groups."^{14/}

Firmer and more rigorous findings than these are nonetheless sure to be forthcoming because all aspects of human behavior are influenced by our genetic makeup...Almost all, however, tell us nothing about origins, nor of the range of freedom of expression we have *apart from* influencing factors.

Thus we can guess that we probably *will* find genetic factors that correlate with homosexuality. But we should not even call such factors "an innate predisposition." In the proper and precise language of science, they are merely "risk factors."

Higher Levels of Distress: The Result of Homophobia?

Homosexuals have a greater incidence of mental illness, particularly depression and suicide, than do heterosexuals. Activists quickly explain that this connection implies neither a necessary psychological nor a necessary biological link between homosexuality and depression. They argue,

**All human behavior
is influenced by
genetic make-up.
Therefore we probably
will find risk factors
correlated with
homosexuality.**

continued on next page

rather, that suicidal depression is the unsurprising effect on otherwise healthy individuals who have to live a closeted existence in an abusive and hostile society.

We have heard this kind of argument before. It has long been obvious that parental divorce is associated with both severe distress and later behavioral problems among children. Until recently, however, no scientific studies were available to “prove” this painfully obvious point. In the name of eliminating any harm to children, the divorce industry in the seventies put forth the “progressive” idea that the *stigma attached to divorce caused the distress*, not the divorce itself. If divorce was normalized, they claimed, the children would walk away unscathed. Actually, they said further, the children would be improved, for they would not suffer the trauma of being reared and cared for by un-self-actualized and less-than-totally-personally-fulfilled parents.

Science has finally caught up with years of experience and common sense. Numerous studies now confirm that divorce inflicts lifelong damage on children far greater than that caused by parental unhappiness. Even the divorce experts are beginning to recant their earlier claims.^{15/}

The same social-stigma theory is not only used to explain why so many homosexuals are unhappy, it is even used to explain why so many homosexuals *remain* unhappy about being homosexual—gay liberation notwithstanding. They label that unhappiness as itself a “symptom,” or in the more politically correct literature as “internalized homophobia”:

... membership of [sic] a stigmatized minority sexuality may exacerbate causes of sexual dysfunction. The effects of discordant lifestyle and identity, homosexual identity formation, dysphoria and internalized homophobia on sexual functioning are three examples of these factors of specific relevance to being homosexual in this culture. The effects of AIDS, difficulties arising from the mechanics of safer sex and the psychosexual effects of oppression on healthy sexual functioning all indicate how factors important to (but not caused by) minority sexual status may influence sexuality functioning.^{16/}

The Prevalence of Sexual Abuse in the Childhoods of Homosexuals

The self-serving explanation for homosexual distress, however, is undermined by what we now know about the terrible effects of childhood trauma on the emotional well-being of adults. Many studies demonstrate a sadly disproportionate extent of sexual abuse in the childhoods of homosexual men, suggesting at the least that both homosexual unhappiness and homosexuality itself derive from

common causes, and that unhappiness is therefore an inherent accompaniment of homosexuality:

From May 1989 through April 1990, 1,001 adult homosexual and bisexual men attending sexually transmitted disease clinics were interviewed regarding potentially abusive sexual contacts during childhood and adolescence. Thirty-seven percent of participants reported they had been encouraged or forced to have sexual contact before age 19 with an older or more powerful partner; 94 percent occurred with men. Median age of the participant at first contact was 10; median age difference between partners was 11 years. Fifty-one percent involved use of force; 33 percent involved anal sex. Black and Hispanic men were more likely than white men to report such sexual contact.

Using developmentally based criteria to define sexual abuse, 93 percent of participants reporting sexual contact with an older or more powerful partner were classified as sexually abused. Our data suggest the risk of sexual abuse may be high among some male youth, and increased attention should be devoted to prevention as well as early identification and treatment.^{17/}

**The neuroscientists
genuinely understood
the research,
and saw no reason
to make grand
pronouncements.**

The same is true for pedophiles:

The association between perpetration of sexual abuse and the offender’s own victimization as a child has been well documented in the literature. Various researchers have examined this relationship by assessing the exclusiveness of the sexual abuser’s behavior, the gender of his victims and the gender of his own childhood abuser.... Subjects were 135 pedophiles ... who admitted to their offenses. A total of 42 percent of pedophiles ... reported being sexually victimized in their own childhoods ... [and] appear to choose their age-specific victims in accordance with the age of their own experience of sexual victimization. Although the cause of child molestation remains undetermined, these results support social-learning and modeling theories.^{18/}

Is Social Disapproval the Cause of Distress Among Both Pedophiles and Homosexuals?

In spite of its superficial appeal and the activists’ repeated claims, no studies support the hypothesis that the social disapproval of homosexuality is the prime cause of the high levels of internal distress evident in homosexual populations even long before AIDS. (That social stigma would cause *some* distress, is of course the small kernel of truth upon which the exaggeration is built.)

continued on next page

Such studies as the one cited immediately above suggest that both the high levels of emotional distress, as well as homosexuality itself, have at least one common root in painful childhood experiences, in the same way that other deviations from the sexual norm (such as pedophilia) likewise do. It makes just as much sense to claim that the high levels of psychological abnormality and personal distress found among pedophiles are due solely to the social disapproval of pedophilia.

ENDNOTES

- 1/ J. M. Bailey et al., "Heritable Factors Influence Sexual Orientations in Women," *Archives of General Psychiatry* 50, no. 3, pp. 217-23. Note the title. Even though the authors admit that any possible heritable factors contribute only 25 percent to a homosexual predisposition, the article is titled as though trumpeting a headline discovery. It was picked up that way by sympathetic media outlets.
- 2/ S. LeVay, "A Difference in Hypothalamic Structure Between heterosexual and Homosexual Men," *Science* 253 (1991), pp. 1034-37.
- 3/ D. Swaab and M. Hofman, "An Enlarged Suprachiasmatic Nucleus in Homosexual Men," *Brain Research* 537 (1990), pp. 141-48.
- 4/ L. Allen, et al., "Sexual Orientation and the Size of the Anterior Commissure in the Human Brain," *Proceedings of the National Academy of Science of the United States of America* 89, no. 15 (1992), pp. 7199-7202.
- 5/ S. Demeter et al., "Morphometric analysis of the human corpus callosum and anterior commissure," *Human Neurobiology* 6 (1988), pp. 219-26.
- 6/ G. Gabbard, "Psychodynamic Psychiatry in the 'Decade of the Brain,'" *American Journal of Psychiatry*, 149, no. 8 (1992), pp. 991-98.
- 7/ D. Deam et al., "Alpha1-Antitrypsin Phenotypes in Homosexual Men," *Pathology* 21 (1989), pp. 91-92.
- 8/ R. Post, "Transduction of Psychosocial Stress into the Neurobiology of Recurrent Affective Disorder," *American Journal of Psychiatry* 148, no. 8 (1992), pp. 999-1010.
- 9/ Gabbard, "Psychodynamic Psychiatry."
- 10/ Reported in D. Gelman "Born or Bred?" *Newsweek*, 24 February 1992, pp. 46-53.
- 11/ J. Maddox, "Is Homosexuality Hardwired?" *Nature* 353 (September 1991), p. 13.
- 12/ P. Billings and J. Beckwith, "Born Gay?" *Technology Review*, July 1993, p. 60. Paul Billings, M.D., is the former chief of the Division of Genetic Medicine at California Pacific Medical Center in Palo Alto, California and is now head of Internal Medicine at the Palo Alto Veteran's Administration Hospital; Jonathan Beckwith, M.D., is American Cancer Society Research Professor in the Department of Microbiology and Molecular Genetics at Harvard Medical School.
- 13/ *Ibid.*, p. 60.
- 14/ *Ibid.*, p. 61.
- 15/ See D. W. Whitehead, "Dan Quayle Was Right," *The Atlantic Monthly* 271, no. 4, pp. 47-84, for an excellent, lay-oriented summary of this reversal. Among others, Whitehead cites Sara McLanahan, now a sociologist at Princeton: "I'd gone to graduate school in the days when the politically correct argument was that single-parent families were just another family form, and it was fine." She acknowledges now that "Evidence on intergenerational poverty indicates that, indeed, offspring from single mother families are far more likely to be poor and to form mother-only families than are offspring who live with two parents most of their pre-adult lives." (p. 62). Whitehead and McLanahan are just two of the many, more often than not female, researchers who have broken out of the destructive seventies mindset. Perhaps the most well-known is Judith Wallerstein, director of the long-term, and still ongoing, California Children of Divorce Study. Her 1989 book, written with Sandra Blakeslee, *Second Chances: Men, Women, and Children a Decade after Divorce*, blew the lid off the divorce-as-personal-fulfillment-the-kids-will-be-fine fantasy.
- 16/ E. Coleman et al., "Sexual and Intimacy Dysfunction Among Homosexual Men and Women," *Psychiatric Medicine* (United States) 10, no. 2 (1992), pp. 257-71.
- 17/ L. S. Doll et al., "Self-Reported Childhood and Adolescent Sexual Abuse Among Adult Homosexual Bisexual Men," *Child Abuse and Neglect* 16, no. 6 (1992), pp. 855-64.
- 18/ D. M. Greenberg, J. M. Bradford, and S. Curry, "A Comparison of Sexual Victimization in the Childhoods of Pedophiles and Hebephiles," *Journal of Forensic Science* (United States) 38, no. 2 (March 1993), pp. 432-36.