NATURE VERSUS NURTURE
"Are People Born Gay?"

In December of 1991 John Bailey and Richard Pillard reported that it was more likely for both identical twins to be homosexual than it is for both fraternal twins or for both adopted brothers.[1] They found that 52% (29 pairs out of 56) of the identical twins were both homosexual; 22% (12 pairs out of 54) of the fraternal twins were both homosexual; and 11% (6 of 57) of the adoptive brothers were both homosexual. Thus, Bailey and Pillard concluded that there is a genetic cause for homosexuality.

The problem with Bailey and Pillard's research was that it was not a random sample. They had preferentially recruited twins by advertising in homosexual newspapers. This easily skewed the results because gay twins were far more likely to respond to the ads versus situations where one individual was gay and the other was not. Recognizing this Bailey and his colleagues conducted another study in 2000 using volunteers recruited from the Australian Twin Registry. In this study only 20%, not 52% of identical twins, share the same homosexual orientation.[2]

If sexuality was biologically determined you would expect that 100% of identical twins would be gay. At the 52% level of correlation there was a strong suggestion of a biological component. However, at the level of 20% it is impossible to say whether this correlation is the result of biology, environment, or skewed sampling.

Skewed sampling can still result in volunteer studies if there are social pressures that would make some individuals reluctant to even participate in such a study. Studies of identical twins also present some unique environmental challenges when trying to separate out the effects of environment upon sexuality.

Later we will demonstrate that relationships with fathers and early sexual abuse play pivotal roles in developing sexual identity. Even in a study done on identical twins separated at birth, the mere fact that the children are separated from their biological father raises the risk factors for homosexuality. The study might suggest a biological factor in homosexuality when the real culprit is the shared separation from the biological parents.

If identical twins are not separated, but live in the same environment, both share a common relationship with their father. Also, both twins have similar exposure to sexual predators in their family relationships or community. Thus, whether separated or living together, it is difficult to biological influence from environmental influence in the matter of sexual identity. It should be expected that twin studies will always show a higher correlation because of shared and critical environmental factors even when living in separate homes.

The rather small (20%) correlation of homosexuality to identical twins in Bailey's most recent study makes it clear that something other than biology is the primary determining factor in sexuality. The scientific evidence contradicts the idea that people are born gay. Nurture, not Nature, is the primary factor in determining sexual identity.

NATURE VERSUS NURTURE
"Are there Gay Brains?"

In 1991 Simon LeVay, a scientist at the Salk Institute in San Diego, reported that a particular group of neurons in the brain appeared to be twice as large in heterosexual men than in homosexual men.[3] Other studies on primates had suggested this region of the brain was involved in the regulation of sexual behavior. These particular neurons in the hypothalamus are also larger in men than in women. Thus, LeVay concluded that sexual orientation had a biological basis.

This study also had huge problems in the sampling of men it used. First, six of the heterosexual men had died of aids, which is often associated with homosexual behavior. There is no way, since the subjects were dead, to confirm if they were actually heterosexuals. Secondly, all the homosexual men had died of AIDS. Could the AIDS, not the homosexual behavior, have been the

[1] M. Bailey and R. C. Pillard, "A Genetic Study of Male Sexual Orientation," Archives of General Psychiatry 48 (1991): 1089-1096

[2] J. Michael Bailey, Michael P. Dunne, and Nicholas G. Martin, "Genetic and Environmental Influences on Sexual Orientation and Its Correlates in an Australian Twin Sample," J. Personal Social Psychology 78 (2000): 524-536.

[3] Simon LeVay, "A Difference in Hypothalamic Structure Between Heterosexual and Homosexual Men," Science 253 (1991): 1034-1037

cause of the smaller neuron size?

Thirdly, LeVay concluded that this smaller neuron size was the “cause” of homosexuality, and not the “result” of homosexual behavior. An analogy would be to compare the muscles of weight lifters with the muscles of a painter and conclude that the larger muscle size “caused” the individual to lift weights.

The hypothalamus, about the size of an almond, can change size. This brain region coordinates the bodies endocrine system including the pituitary gland and adrenal glands. In other species it may change in size as the result of changes in social status and environment.

In one experiment the social environment of fish was altered. As the social environment changed the physical size of fish also changed. The conclusion of the study was that fish switched bodily resources from growth to reproduction and vice versa depending on their social status.

Along with changes in physical size there were also changes in the hypothalamus.[4] In other words, the hypothalamus size was not the cause of fish’s social status, but reacted to a change in social status. In particular the hypothalamus reduced in size when reproduction ceased to be an option because of social status.

Based on this study of fish a sensible question arises, “Could the simple desire to reproduce actually change our brains?” There is evidence that this desire actually does change us biologically.

A recent Portuguese study appearing in the Oct. 9 issue of “New Scientist” authored by Katherine Hirschenhauser measured male testosterone levels and correlated them with sexual desire and behavior. For all males testosterone levels varied throughout the study period.

With men who sought to impregnate their partners sexual activity matched peaks in testosterone levels. However, sexual activity and testosterone levels did not coincide in men who did not wish to conceive. Hirschenhauser said that the findings suggested that men can subconsciously influence their own fertility

The ways in which our minds and environment can alter our biology are both amazing and subtle. Another growing area of research is the affect of pheromones upon human sexual development.

Pheromones are almost scentless chemical odors given off by our bodies. While consciously we may not notice them they exert profound influences upon our brain particularly in the area of brain that controls sexual behavior. Pheromones are detected by a small gland just recently (1991) discovered in humans called the VNO. This gland connects to the nasal passage and has an almost direct line to “limbic” system of the brain which includes the hypothalamus. This area of the brain controls sexual desire, mood, and many other emotional types of systems within our body (stress, hunger, etc.)

Women exposed to the pheromones of other women will have their menstrual cycles synchronize.[5] The presence of male pheromones on women can have even more profound effects on their biology.

In one study women who had either abnormally short or abnormally long cycles were exposed to male pheromones in the form of an extract. The effect was to stabilize both groups of women closer to the optimum fertile cycle of roughly 29 days. The effect took only 14 days of exposure and women receiving a placebo had their periods remain the same.[6]

In the late 1950s a study done on mice indicated that a recently impregnated female mouse will spontaneously abort her young when a male mouse “that is NOT” the mouse who originally impregnated her is present.[7] In another study it was found that puberty in female mice was accelerated by the presence of male pheromones.[8]

Recent studies have now found that puberty is accelerated in young girls by the presence of a non-biologically related male (as in the case of step-fathers).[9] One study recently concluded on 1400 girls and published in “For better or worse” by Mavis Hetherington and John Kelly showed that girls in step-father families menstruated on average 9 months earlier than girls raised with their biological father. Studies show that the longer the step-father is present in the family the more profound the effect.

Pheromones also impact male biology. Male testosterone levels are lowered by such things as

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[4] Hans A. Hofmann and Russell D. Fernald, "Social Status Controls Somatostatin Neuron Size and Growth" The Journal of Neuroscience, June 15, 2000, 20(12):4740–4744

[5] Stern K., McClintock MK. “Regulation of ovulation by human pheromones.” Nature 1998 Mar; 392(6672): 177-181.

[6] Cutler WB, Preti G, Krieger A, Huggins GR, Garcia CR, Lawley RJ. Human Axillary Secretions Influence Women's Menstrual Cycle: The Role of Donor Extract From Men. Horm Behav 1986; 20:474-82

[7] Bruce, H.M. (1959). “An exteroceptive block to pregnancy in the mouse.”, Nature 184 (4680): 105

[8] Vandenbergh JG, et. al, "Partial isolation of a pheromone accelerating puberty in female mice.", Journal of Reprod Fertil. 1975 Jun;43(3):515-23

[9] Ellis, B. J., & Garber, J. (2000). "Psychosocial antecedents of variation in girls' pubertal timing . . ." Child Development, 71, 485-501

marriage and the holding of a baby. [10] While the reasons for this are not universally agreed upon, animal studies indicate that this effect is influenced by pheromonal cues from the female and children.

Modern research including new brain imaging techniques have produced an explosion of information regarding how the brain works. These techniques have revealed that the brain is extremely dynamic even into old age.

Stress and depression are known to shrink certain brain areas in the hippocampus. These areas can also enlarge and grow new neurons when depression or stress is relieved. The brain's ability to change and be influenced by social status and even our own thought processes plays an important role in dispelling another myth.

NATURE VERSUS NURTURE
"Can Gay People Change?"

Dr. Robert L. Spitzer, Professor of Psychiatry at Columbia University was the chairman of the 1973 APA committee which removed homosexuality from the official diagnostic manual of mental disorders. In a recent study of 200 adults he found that highly motivated individuals are capable of changing their sexual orientation.[11]

In this study 42% of the men and 46% of the women were exclusively homosexual before undergoing "reparative" therapy which is designed to change one's sexual orientation. The changes were not immediate and took as long as two years.

In this group 17% of the men and 55% of the women claimed to be exclusively heterosexual in their orientation. In addition, 66% of the men and 44% of the women reported that they had achieved good heterosexual functioning defined in the study as being in a sustained heterosexual relationship within the past year, rating emotional satisfaction from the relationship a seven or higher on a 10-point scale, and having satisfying heterosexual sex at least monthly.

The author of the study reported that these results were contrary to his own expectations. There were several other significant aspects from this study that are worthy of note. First, there was difficulty in finding subjects and getting them to participate. Part of the problem lies in the fact that people who have left this life style want to keep their past hidden from new relationships. This fact would tend to skew results in a negative way (in other words, positive change would be lower than real world experience).

Second, the majority of those who participated in the study were evangelical Christians. Third, faith was usually cited as playing a very important role in these individuals motivation to change.

Finally, it is also noteworthy that there was difficulty in getting this study published. In the current cultural climate studies which run contrary to standard opinion about gays are ignored and downplayed by the media.

Another earlier study conducted by Masters and Johnson reported a 65% success rate in a five year follow up for people who were dissatisfied with their homosexual life style. These individuals attended a short term but intense program to change belief systems and develop a positive self-image.[12]

While such studies are admittedly sparse in recent years, studies stretching back to Sigmund Freud have documented programs that successfully help individuals change their sexual orientation.[13] Depending upon the program, success rates of 50% to 75% are not uncommon. Interestingly, certain programs achieved success with people who had no initial interest in changing their orientation. These individuals became interested in changing their orientation after dealing with other psychological problems.

Despite the fact that many people not only have changed their sexual orientation, but are happier following their change, there is a strong movement to outlaw or ban such therapies. Even within the gay community there are some voices who condemn attempts to squash "reparative" therapy as an attempt to remove the right of choice from patients. Yet the dominant message in the gay community is that homosexuality is fixed and there is nothing the homosexual can do to change. The research is quite conclusive and very well documented that this is not the case.

NATURE VERSUS NURTURE
"Conclusions!"

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[10] Ellis, Peter & Gray, Peter, "Marriage lowers testosterone", Harvard Gazzette, Sept 19, 2002.

[11] Robert L. Spitzer, "Can Some Gay Men and Lesbians Change Their Sexual Orientation?", Archives of Sexual Behavior, 32(5), 403-417, October 2003

[12] M.F. Schwartz and W.H. Masters, "The Masters and Johnson Treatment Program for Dissatisfied Homosexual Men," American Journal of Psychiatry, Vol. 141, pp. 173-181, 1984, as cited by Satinover, p. 186

[13] Throckmorton, Warren J., "Attempts to Modify Sexual Orientation: A Review . . .", The Journal of Mental Health Counseling, October 1998 pp 283-304 found at http://www.narth.com/docs/attemptstomodify.html

While we have yet to address the issue of why people abandon traditional sexual relations the science on one issue is conclusive: People are not born to be gay. Information quoted in the media and on web sites to the contrary are often the result of extremely flawed studies, or in some cases state conclusions from the data that are not justified.

Even if, at some point, there is sound science that shows that the brains of homosexuals are different from heterosexuals, this does not mean there is a cause and effect relationship. In fact, the most recent science seems to imply that behavior, and even desire, can literally change our brains. In other words, a certain brain difference does not necessarily cause us to become homosexuals; rather, being homosexual can affect the way our brain develops.

If were are not genetically programmed to be gay, then changing our environment and addressing the issues that led to this life-style should be able to change our sexual status. Recent and historical studies, to the surprise of the researchers, confirm this very fact. Not only are people NOT born to be gay, but the CAN change!

The most significant factors in the ability to change seems to be spiritual values and the desire to change. In our next lesson we address the social reasons why God's plan for our sexual identity is to be preferred to homosexuality.