A New Sociobiological Theory of Homosexuality Applicable to Societies With Universal Marriage

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Several sociobiological theories have tried to explain human homosexuality. Adaptationally orthodox theories view it as a specific instance of reproductive altruism, in which the homosexual orientation in combination with a cross-gender identity is the emotional motivator of a nonreproductive role, leading to higher inclusive fitness for the individual displaying the trait in a particular environment. The nonreproduction is typically assumed to be complete—a large reproductive sacrifice. A new model is proposed in which human homosexuality remains a reproductively altruistic trait, but in which the magnitude of the altruism is much reduced, and so presumably is more likely to result in a net increase in inclusive fitness. The theory applies to societies in which social pressures require marriage of essentially all reproductively able individuals, and does not require gender nonconformity. Hence, the new theory fills some of the gaps left by the earlier orthodox theories, and in combination with them offers a consolidated set of hypotheses for testing.

KEY WORDS: Homosexuality; Bisexuality; Marriage; Sex roles; Altruism; Kin selection; Parent–offspring conflict.

INTRODUCTION

Readers of this journal will not need to be reminded that reproductive altruism and adaptation are central issues in sociobiology. Since the term "sociobiology" was popularized (Wilson 1975a), many sociobiologists have hypothesized that human homosexuality is of adaptive significance. The most common view (Wilson 1975a, p. 555, attributing the theory to R.L. Trivers and H.T. Spith; 1975b, pp. 42–43; 1978, pp. 142–148) has been to see human homosexuality as a particular instance of reproductive altruism, in which homosexuals’ sexual behavior

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with members of their own sex is the proximate cause of lower reproductive success (RS), which is hypothesized to redound to the reproductive benefit of relatives—thus possibly increasing the homosexuals' inclusive fitness (IF). In these theories, kin selection is the ultimate mechanism by which genes predisposing towards, or permitting the development of, a homosexual orientation spread under the action of natural selection.

This theory was investigated and elaborated upon by myself (Weinrich 1976, Part II; Weinrich 1978, 1980b) and others (Kirsch and Rodman 1977, 1982; Kirsch, manuscript in preparation), often in the context of a particular hypothesis: that there are many societies in which individuals acquire extra powers or knowledge by virtue of taking up a nonreproductive or less-than-fully-reproductive role that also necessitates or is customarily associated with homosexual behavior. Similarly, Trivers, in his parent–offspring conflict paper (Trivers 1974, p. 261), elaborated by suggesting that a general mechanism permitting the production of adaptively altruistic homosexuals would be subject to manipulation by parents who would be more likely than offspring themselves to increase their IF if the offspring increased kin-directed reproductive altruism. A homosexual erotic orientation, in the original theories and in these elaborations, is viewed as the emotional mechanism by which certain individuals are predisposed to choose (or allow to have chosen for them) such a nonreproductive role.

But this set of theories can be criticized on many grounds, and at least four others with a less orthodox sociobiological flavor have been proposed. G.E. Hutchinson (1959), writing in the presociobiological era, used what amounted to sociobiological logic in proposing that exclusive homosexuality may be the maladaptive but inevitable result of selection for a heterozygous bisexuality (see also Kirsch and Rodman 1977, 1982). Ruse (1981) described an unpublished theory due to R.D. Alexander in which homosexuality is viewed as a maladaptive result of strong selection for heterosexuality (a class of theories mentioned but not further investigated by myself: Weinrich 1976, Part II, p. 160). Gallup and Suarez (1983) proposed a theory not very different from this one in which homosexuality in both sexes was viewed as "a consequence of heterosexual frustration, dissatisfaction . . . , or both" (p. 315). And Symons (1979, chap. 9), later echoed by Gallup and Suarez, thought homosexuals' behavior to be what heterosexuals of corresponding sex would do if they were unconstrained by the reproductive strategies of the other sex. Symons refrained from speculating whether this behavior could be adaptive although his theory seems to suggest that it is not. I term these theories "nonorthodox" because they first attempt to explain homosexuality as a maladaptation.

A final characteristic of the orthodox theories is that they fail to show definitive parallels between human homosexuality and homosexual behavior in nonhuman animals, even though both kinds of behavior are widespread (Weinrich 1980a). This is not necessarily a weakness, if the particular hypothesis for the human case is compellingly tied to a unique human adap-
tation like language. But kin selection is not unique to humans—nor, for that matter, are the phenomena presumed by the other theories, including the nonorthodox ones (parent−offspring conflict, bisexual behavior, stringent selection for heterosexuality, juvenile males' inability to find willing female sexual partners, and sharply different sexual strategies selected in males and females). Indeed, it may simply be a mistake to search for an exact parallel in animals to human homosexuality (Weinrich 1980a, 1982). After all, we cannot find an animal species with a set of heterosexual behaviors precisely equivalent to human heterosexuality, and yet no one doubts that "animal heterosexuality" exists (imprecise as the term might be), and no sociobiologist doubts that animal and human heterosexuality are related (complicated though the relationship might be).

The orthodox kin-selection model (see, e.g., Weinrich, 1976) addresses this problem by tying homosexual orientation to desires for cross-gender status or sex-role inversion (a desire to take up the roles and/or occupations of the other sex). Animals are not known to transmit elaborate sex-role prescriptions to their offspring in socialization. This solution has been indirectly criticized with evidence that modern homosexuals are not markedly cross-gendered: most reputable sexologists, joined by Symons and by Gallup and Suarez, say quite rightly that the sexual behavior of homosexual women resembles the sexual behavior of heterosexual women far more than it does the behavior of men, with a similar statement holding for homosexual men.

But this is not to say that cross-gender behaviors can safely be ignored in modeling homosexual behavior, modern or primitive, psychologically or sociobiologically. In fact, an association between gender nonconformity in childhood and homosexuality in adulthood is by now so well supported it is undeniable (Bakwin 1968; Bell, Weinberg, and Hammersmith 1981; Green 1974, 1976, 1979, 1984, 1985, 1986; Lebovitz 1972; Money and Russo 1979, 1981; Whitam 1977a, 1980, 1983; Zuger 1966, 1978). In fact, childhood gender nonconformity is in some studies the strongest single predictor of adult sexual orientation not tautologically equivalent to it (Bell, Weinberg, and Hammersmith 1981; Pillard and Weinrich, unpublished data). For example, many adult gay men recall cross-gender-role wishes and acts in childhood, and a much larger proportion recall utter lack of interest in the rough-and-tumble, body-contact sports so prominent in American boyhood lore (although many prehomosexual boys are interested in other sports). Some workers have overlooked this evidence, pointing instead to the weak association between homosexual behavior in childhood and homosexual behavior in adulthood (e.g., Gallup and Suarez, 1983, p. 319). In fact, the orthodox kin-selection model is clearly justified in its attention to gender nonconformity.

On the other hand, there are children without particular gender nonconformity who grow up to identify themselves as homosexual (Zuger 1966), and many if not most of the childhood gender nonconformers drop much of their nonconformity in adulthood (Harry, 1983), at least in our society, and apparently in some others (Wikan, 1982, p. 180). Some social scientists (viz.,
Whitam 1977a, 1980), aiming at parsimony, have tried to include such children in the cross-gender-identified group by making lack of interest in stereotypically same-gender activities (such as sports for boys) part of the very definition of cross-gender identification. This short-circuits the question of whether such lack of interest is empirically associated with the active seeking of cross-gendered roles so typical of gender-nonconforming children (Green 1974). So although it is justified to attend to gender nonconformity in homosexuality, it is a mistake to become preoccupied with it.

Cross-gendering is related to another problem with the orthodox theory: it needs to explain why the reproductive altruism is implemented through the mechanism of homosexual attraction; wouldn’t the perfect reproductive altruist be asexual rather than homosexual? I have addressed this criticism elsewhere (Weinrich 1976, Part II, p. 159), and so will only summarize my opinions here—and then propose a new theory that promises to relieve these difficulties.

From first principles, one should expect sexual attraction and/or bonding to serve more than reproductive purposes—an argument made by classical ethologists such as Wickler (1969/1973, Preface) and not a notion sociobiologists are likely to dispute (for example, Wilson 1978, chap. 6). Accordingly, homosexuality (sexual attraction to and/or bonding with a member of one’s own genetic sex) can have, one presumes, some of the same not-directly-reproductive benefits that heterosexuality can (inheritance of property, for example, brideprice distribution, or the formation and maintenance of bonds between lineages). And perhaps it can have some benefits that seem unlikely for corresponding heterosexual acts (for example, applied sex education without the danger of pregnancy). Obviously, these benefits would vary as a function of social customs (see Conclusions), but they can exist; simple asexuality would forego these advantages. But just as obviously, same-sex sexual attraction and bonding need not necessarily be connected with cross-gender wishes. This is the pivot point of the new model, to be described forthwith.

THE MODEL

I have devised a simple theory that solves most of the difficulties with the classic kin-selection model of human homosexual behavior. It is not a replacement for the model but a supplement to it, and it begins with the observation that there are many societies in which the only people who fail to marry are the prematurely dead or the severely handicapped. In such a society, it might seem, sexual orientation would range not from heterosexual to homosexual, but rather from heterosexual to bisexual. Indeed, some of the most renowned "homosexuals" in history have married and had children (Oscar Wilde, Socrates, Margaret Mead); if they were reproductively altruistic, it was not to the extent of reducing their RS to zero.
Such societies have certainly existed in the past, and some exist today—even in regions where we might not expect them. Modern Saudi Arabia is an example of a deeply conservative culture in which little or no sex-role inversion homosexuality is said to exist [although it does exist in neighboring Oman (Wikan 1982)]. If modern Saudi men have homosexual desires, it is said, they satisfy them with boys or with Western gay tourists willing to play a receptive role. But an insightful modern account of gay life in Saudi Arabia (Traughber 1985, p. 36) makes it clear that this view is seriously incomplete:

I was more curious than ever about this man who challenged all the myths about sex with an Arab ... Once, in response to one of my personal questions, he shook his head disgustedly, grabbing my mustache and then his own. “You are a man. See? I am a man. See? No problem. We like fucking. That’s all. OK?” But as he dropped me off a few minutes later, he said with the moon in his eyes, “Oh, Habibi, I will dream of us making love all night.” And then he kissed me.

Saudi Arabia is a society in which essentially everyone who is capable of marrying gets married. But as this account and others show, there are sex-role-typical men in that society who recognize a romantic and sexual attraction to other men. These two facts are all that are required for the theory to apply. Even people in societies that do not make strict linguistic distinctions between “homosexual” and “heterosexual” (such as the ancient Greece of Socrates) often recognize that people can have an orientation towards romantic attachments with one sex exclusively (Boswell 1982).

So my model begins by asking the following question: what does it mean to “be” homosexual in a society in which everyone marries? Evolutionarily, this question becomes: what is the effect on RS of homosexual as opposed to heterosexual romantic attachments in a society in which everyone marries?

Sociobiologically, one must first address a related issue: the evolutionary function of “limerence” (Temnov 1979): the ability to fall head-over-heels in love with another individual, an ability shared by heterosexuals, homosexuals, and bisexuals alike. To Desmond Morris (1967), this capacity for limerence seemed evolutionarily designed to motivate and strengthen the human pairbond—a theory that has not met with universal acceptance (e.g., Symons 1979, chap. 4). Others too numerous to cite have wondered whether the ability to become limerent might motivate and strengthen the desire to have affairs with people other than one’s socially approved spouse. I suspect that human limerence might be complicated enough to serve both ends, but for the purposes of the present theory I only require that limerence sometimes function for the purpose of motivating extramarital, rather than marital, bliss.

If so, then one difference of reproductive significance between homosexuals and heterosexuals in a society in which everyone gets married would be that heterosexuals have extramarital affairs with members of the other sex, whereas homosexuals have them with members of their own sex. This
possibility has an immediate consequence for RS: that heterosexuals in such a society are more likely to have children out of wedlock than homosexuals are. Hence, being homosexual in such circumstances can be, as in the orthodox theory, a reproductive altruistic act.

"Can be," rather than "is," because it is not clear on the face of things whether a particular instance of refraining from extramarital reproduction would be altruistic or not. All other things being equal, it would have to be; some extramarital reproduction results in higher RS than no extramarital reproduction. But all other things are never equal—perhaps especially so in this case, when a single extramarital affair in many societies could result in the participants being punished (perhaps with death). A careful reading of Trivers (1974), for example, shows that he withheld judgment as to whether extramarital affairs on average increased or decreased RS. A more detailed example is provided by Diamond (1985, p. 77), who also cited unpublished evidence that a substantial portion of RS is obtained extramaritally, at least in our society.

There is also the argument (posed by a reviewer of this paper) as to whether a homosexual orientation in a male would interfere with obtaining an investment-free copulation, were it to be offered to him by a passing female (ignoring for the moment the question of how often such fatherhood opportunities are expected to be offered according to evolutionary theory). What little evidence exists on this question suggests that modern homosexual men are willing to contribute to sperm banks and to father children by artificial insemination. Moreover, experiments show that many if not most homosexual men can be aroused by fantasies of physical sexual contact with females, though not by the preliminaries of meeting women and flirting with them (Freund 1974).

There is another sense in which being homosexual in universal-marriage societies can be considered reproductively altruistic. If one is homosexual, in most societies one cannot formally marry the object of one’s love; if one is heterosexual, one sometimes can. If the society is one in which marriages are arranged by parents, or in which there is often conflict between parents and offspring concerning which member of the other sex one should marry, then many heterosexuals would face a conflict when the offspring wants to marry a beloved whom the parents regard with disfavor. Homosexuals in such societies, however, never expected to marry their beloveds, and so presumably would experience less conflict with their parents as to an appropriate marriage partner. (Societies which formally permitted homosexual marriage typically were those in which heterosexual marriages were simultaneously possible; homosexually-oriented members of such societies would not see the two as conflicting.) Trivers (1974, p. 261) has shown, entirely independently of this line of thought, that a tendency to agree to marry the person one’s parents prefer—rather than the person the offspring itself would prefer—is a form of reproductive altruism; it is more likely to increase the parent’s IF than the offspring’s.
Accordingly, for a society in which nearly everyone gets married, there are two senses in which “becoming homosexual” could be (or is) an altruistic act—as it is in the orthodox theory. The magnitude of the altruism, however, is smaller, because RS is merely reduced somewhat, rather than being reduced to zero. It should accordingly be easier to fulfill the kin-selection inequality $B \times r > C$ (in which, as is customary, $B$ denotes the RS benefit to relatives of the altruist, $r$ is the degree of relatedness between the altruist and the recipient(s), and $C$ is the RS cost to the altruist). Because $C$ is smaller in the present theory, in practice it should be easier for $B \times r$ to be larger.

**DISCUSSION**

Good sociobiological theories of human behavior should not ignore social factors. This theory is specifically designed to take a particular set of social factors into account, and to do so in a nonsuperficial way. The theory cannot work in nonhuman species, the members of which do not arrange marriages (although many animal species have individuals who interfere with particular copulations), or exert social pressures to ensure that most individuals marry and reproduce. The kind of homosexuality proposed in this theory could begin to evolve only after the development of a society that had such social pressures. Of course, it does not address the preadaptation question of what caused the variability of sexual orientation in the first place, or the proximate questions of what mechanisms produce homosexuality in particular individuals and how deterministic these mechanisms are.

The theory remains adaptationist and kin-selectionist but does not tie homosexuality to sex-role inversion, although it partly shares the old theory’s weakness in that it might better explain asexuality rather than homosexuality. I now regard this weakness as less important than I once did; homosexual and heterosexual couples alike report that the highly charged sexual excitement so prominent in early couplehood recedes to a more stable level of bondedness that is less “sexy” but retains an erotic tinge. It is a reasonable hypothesis that the highly charged component of sexual attraction could have functioned, as in preadaptation, as the initial emotional motivator of behaviors that lead to a same-sex bond; once the bond is formed, other bonding mechanisms (which need not include such genitally focused sexuality) can come into play. The situation may be analogous to the beginning of the evolution of a pair bond between adults using signals ethologically borrowed from parent–offspring relationships.

The new theory plugs gaps left by the first orthodox theories, but there remain many societies (Weinrich 1976, Part II, Tables 1-2) in which sex-role inversion’s association with homosexual practices is clear. (To put this point provocatively, it seems that homosexuals act like members of their own sex rather than like members of the other sex, except when they do not.) The relative importance of the mechanisms proposed by the various theories
would differ from society to society. If any of these mechanisms has a biological basis, then one would expect substantial heritability of homosexuality in more modern societies, in which the melting pot mixes the genes of the various ethnic strains more than they had been mixed in the past. That is, intersocietal genetic variation in sexual orientation mechanisms would be converted, over time, to interindividual genetic variation. The genotype-environment mapping (i.e., which environmental circumstances tend to promote which form of sexual orientation variability) could have a substantial genetic component, even while each individual’s developmental history of sexual orientation was idiosyncratic.

This line of argument suggests some ways to test the theory—if not directly, at least as part of a set of theories that taken together might account for nearly all kinds of homosexuals and homosexuality. We ought to be able to develop a typology of sexual orientation—including heterosexuals in the typology as well—in which different sexual-orientation “types” were reliably passed on within families. To a first approximation, for example, the theory would be supported if cross-gendered and non-cross-gendered homosexuality seemed to be passed on independently of each other; it would be rendered less likely if these two types were expressed more as a function of cultural prescriptions than as a function of lineage.

Interestingly, the two twin studies of sexual orientation (Kallmann 1952a,b, which is methodologically poor—see the comments preceding Kallmann 1960—and Heston and Shields 1968, which is methodologically much better but based on a small sample) both found striking cases suggesting that “what is inherited” is much more specific than a direction to one’s sexual orientation. It also appears that male homosexuality runs in families (Pillard, Poumadere, and Carretta 1981, 1982; Pillard and Weinrich 1986), and probably female homosexuality as well (Pillard and Weinrich, in preparation). There is little evidence that families with disproportionate numbers of male homosexuals have disproportionate numbers of female homosexuals as well (Pillard and Weinrich 1986).

The theory would also be challenged if it became impossible or embarrassingly difficult to construct a taxonomy of sexual orientation in the first place. After all, a trait cannot be considered “inherited” if taxonomists agree that the trait is not well-defined. In sexual orientation research, this question is called the “social constructionist/essentialist” debate (see Weinrich 1987, submitted for publication) or, as applied specifically to homosexuality, the “homosexual role” debate (Whitam 1977b, 1978; Omark 1978). However, a colleague and I (Pillard and Weinrich, 1987, in press) have such a taxonomy, and taxonomic questions have been prominently discussed by other sex researchers (see, for example, Freund 1967, 1974; Freund, Steiner, and Chan 1982; Langevin 1983; Langevin, Paitich, and Steiner 1977). Most sex researchers agree that such taxonomies are valid at least in their broad outlines.

And of course, the theory would be challenged if the patterns of ho-
mosexuality and bisexuality observed do not fit the details of the model. For example, if the empirical work supporting a taxonomy does not find that the less- or non-cross-gendered sort of homosexual exists in societies which insist upon universal marriage, or if parent-offspring conflict over the preferred marriage partner is just as (or more) intense among homosexually oriented offspring as it is among heterosexuals, then the theory fails in that case. Given enough such embarrassments, it will be rejected in general. Of course, if any of these traits were rare—on the order of a mutational equilibrium, say—doubt would also be cast on the adaptationist hypothesis.

CONCLUSIONS

I cannot pretend to have proven that this theory is true, or even to have made a direct empirical case for it. However, data-gathering must be motivated by good theory; it is hard to prove or disprove a theory using only data gathered before the theory was proposed.

Good theory, in turn, must be motivated by the proper fundamental principles. Adaptation is the central question in sociobiology, and some of sociobiology’s greatest successes have been in demonstrating adaptation where others had found none. There is now a substantial body of experience backing up Trivers’s early assertion that maladaptive explanations are explanations of last resort (Trivers 1972; 1985, chap. 2), so it is not by accident that the earliest sociobiological theories of homosexuality were adaptationist. It is unfortunate that some sociobiologists studying human reproductive strategy have overlooked adaptationist models as they approach the more taboo areas of human sexuality. In the absence of extrasensory perception, I cannot fairly attribute base motives or poor training to them, and even if I could their views may yet turn out to be the correct ones. But that cannot be agreed upon until more adaptationist theories have been proposed, criticized, and tested. Evolutionary biologists conclude that adaptation has been at work when there is a “good” fit between an adaptationist explanation and a set of well-documented traits. Unfortunately, in assessing whether “good” is good enough there are no absolute standards, and there is thus no substitute for logical argument by well-trained, intelligent experts considering the evidence of experiment. It is in that spirit that the present theory is put forth.

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