

What Accounts for Cross-Cultural Variation in the Expression of Homosexuality?

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Introduction

Humans are not, and perhaps have never been, passive players in their sexuality and reproduction. According to Marvin Harris (1987), “Much evidence indicates that human reproductive patterns are seldom completely at the mercy of sexual and environmental imperatives and that preindustrial population rates reflect some form of optimization effort engaged in by individuals and groups, rather than a culturally unregulated surrender to sex, hunger, and death” (1). It is thus a fair assumption that all cultures have mechanisms for controlling reproduction and fertility, whether the aim is to increase, maintain, or reduce their population. How rigid and proscriptive these mechanisms are depends heavily on a people’s mode of production (how they sustain themselves) and perceived and actual population pressure (the factors that limit the number of people able to survive within a particular environment). Methods of controlling fertility rates include infanticide, contraceptives, post-pregnancy sex taboos, extended periods of breast-feeding, abortion, *coitus interruptus* and deferring marriage. Fertility rates can also be affected by tolerance or encouragement of non-reproductive expressions of sexuality including masturbation, non-coital sex, and homosexuality. It is true that attitudes towards homosexuality in particular vary greatly cross-culturally and there is no single causal element that can account for this variation. In this paper, however, I argue that population pressure can play a key role in whether or not homosexuality is practiced in a given culture.

“What is homosexuality?” is a question that would not be similarly

Chrestomathy: Annual Review of Undergraduate Research, School of Humanities and Social Sciences, School of Languages, Cultures, and World Affairs, College of Charleston
Volume 8 (2009): 99-114

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answered the world over. For example, the U.S. tends to think of homosexuality as a concrete identity based on some inherent biological predisposition. Perceptions of homosexuality and how it is defined among Native American groups are complicated by the fact that some Native American tribes of North America, especially among the plains tribes, recognize four genders: male, female, berdache male, and berdache female. "The berdache among North American Indians may be roughly defined as a person, usually male, who was anatomically normal but assumed the dress, occupations, and behavior of the other sex to effect a change in gender status." (Callender and Kochems 1983: 443). In these Native American cultures only sexual interactions between people of the same gender are considered homosexual (Embers et. al. 2007: 355). Yet another way in which homosexuality is sometimes defined is as a distinctive, systematic phase in one's life such as in the "mentor" relationships between older and younger males in ancient Greece. It is important to note that, in this essay, descriptions of homosexual behavior outside of a modern context are almost exclusively limited to males. This is because recognized and reported female homosexual behavior is extremely rare in traditional societies (Embers et. al. 2007: 355). Due to the wide variety of conceptions of "homosexuality," it is important to establish what one means by the term. For the purposes of this essay homosexuality will be defined as any "erotic activity with another of the same sex" (Merriam-Webster). This definition establishes the basis for perceiving homosexuality as an alternative, non-reproductive expression of human sexuality that may constitute one of the ways that cultures have regulated population growth.

Homosexuality as Related to Mode of Subsistence

In order to establish a valid correlation between homosexuality and population pressure, it was necessary to first examine a large scale cross-cultural sample to see if in fact the correlation can be supported. In their "Cross-Cultural Codes on Twenty Sexual Attitudes and Practices" (1976), Gwen J. Broude and Sarah J. Greene collected data about various aspects of sexuality for the 186 societies from Murdock and White's Standard Cross-Cultural Sample (1969). It is important to note that Broude and Greene did not go into the field to gather this

data but instead conducted a review of the ethnographic literature in anthropology available for each of the 186 societies. Sexuality and sexual behavior are difficult subjects to study in the field since they do not lend themselves to participant observation and not all people being studied or ethnographers are willing to discuss such topics; therefore not all societies had information available for all twenty of the sexual codes in Broude and Greene's study. The code we are most interested in is frequency of homosexuality, which was available for 69 of the 186 societies. Cultures either received a 1, indicating that homosexuality was absent or rare, or a 2, indicating that homosexuality was present or not uncommon. Using Murdock and White's (1969) original categorizations of the primary and secondary modes of subsistence it was possible to examine the relationship between a culture's mode of subsistence and expression of homosexuality. Although both of these studies used are relatively old by academic standards, they are still useful because they reflect data gathered on traditional societies, which is difficult to obtain today. Due to outside influences, traditional cultural practices have drastically changed in the last 50 to 100 years. If one wants reliable information on these unique practices, older data is often actually preferable.

Murdock and White's Standard Cross-Cultural Sample was designed to be a useful, representative sample of the world's cultures since societies were chosen specifically to represent independent culture clusters. In preliminary work with the chosen sample, Murdock and White defined each society in terms of its primary and secondary mode of subsistence. These categories included hunting, gathering, fishing, exchange, domestic animals, simple or shifting cultivation, horticulture, and advanced agriculture (Murdock and White 1969). To connect this data with the information regarding homosexuality collected by Broude and Greene, it is necessary to establish my first assumption: for the purposes of this essay, increasingly sophisticated modes of adaptation to the environment will be viewed as a reflection of increasing population pressure. The theoretical framework for this argument is based on archaeologist Mark Cohen's concept of population pressure as the cause of human global expansion and the resulting need for labor intensification which is manifested as the origins of agriculture (Cohen 1977).¹ By combining the data on homosexuality

with mode of adaptation we would expect to find a correlation between the two variables roughly equivalent to an increasing frequency in homosexuality as the intensity of mode of adaptation increases.

Thus I divided the 69 societies for which homosexuality data was available into three categories: low population pressure, medium population pressure, and high population pressure, as related to the intensity of their mode of adaptation. (The intensity of a mode of adaptation depends on the severity of the exploitation of the environment.) I characterized societies as experiencing low population pressure when their mode of subsistence consisted of any combination of hunting, gathering, and fishing. Medium population pressure societies were characterized by horticulture, domestic animals, and simple or shifting cultivation. High population pressure societies had advanced agriculture as either their primary or secondary mode of adaptation. In their original categorizations Murdock and White also used exchange as a descriptor, but since exchange can contextually mean different things, it was factored in as implicit in each mode of adaptation. It is important to note that a society having horticulture as their primary and fishing as their secondary mode of adaptation was considered to have medium population pressure. In other words, the most intense mode of adaptation determined the category of population pressure assigned to each society. I further divided the low population pressure societies into those with fishing as part of their subsistence and those exclusively hunting and gathering since fishing itself is a form of intensification in terms of one's relationship with the environment. The table below presents the results.

These results strongly support the idea that homosexuality is increasingly likely to be present as population pressure increases. The percentages demonstrating the presence of homosexuality: 0 (Low, hunting and gathering), 33 (Low, hunting, gathering, and fishing), 44 (Medium, Horticulture, etc.), 57 (High, Intensive agriculture) demonstrate a marked correlation between the presence of homosexuality and the intensity of a society's adaptation to the environment. That *none* of the exclusively hunter-gatherer societies had any significant manifestations of homosexuality is particularly noteworthy, especially considering that *over half* of high population pressure societies have significant expressions of homosexuality in

their culture. Since data on the question of homosexuality was not available for all 186 societies in the sample used, the sample size is relatively small and uneven in its distribution between the three different levels of population pressure. The results therefore do not represent the actual percentages of cultures that practice homosexuality around the world, but they do indicate a convincing relationship between population pressure and the likelihood of homosexuality being practiced in a given culture. The data registers a Spearman Correlation of .276, which is a moderately positive correlation significant at $p=.011$.

Presence of Homosexuality as Related to Population Pressure

Pressure Level	Total	Absent/ rare (no.)	Absent/ rare (%)	Present (no.)	Present (%)
Low (all)	16	13	81	3	19
Low (hunting and gathering)	7	7	100	0	0
Low (hunting, gathering, fishing)	9	6	67	3	33
Medium (Horticulture, domestic animals)	32	18	56	14	44
High (intensive agriculture)	21	9	43	12	57
Total	69	40	58	29	42

Evolutionary Context

This correlation between population pressure and practice of homosexuality reflects a dynamic process of changing attitudes towards fertility and alternative expressions of sexuality that has been going on since our emergence as a species. If this theoretical framework is to be validated, it must make sense in the evolutionary history of

humans. Homosexuality would superficially seem to be contradicted by the division of labor by sex, which is one of the most basic, fundamental, and universal aspects of the relationship between men and women. As a non-reproductive expression of sexuality, that is, homosexuality would seem to undermine the sexual exchange necessary for this economically cooperative relationship and also its ultimate goal of reproductive success. Thus homosexuality's positioning within this universal reality of the division of labor by sex must be explained.

It important to first describe the nature of the division of labor by sex as a universal part of human life before then examining how homosexuality could possibly fit into this framework. All societies have this division of labor by sex, but how it is manifested and the relative contribution of women to overall subsistence, varies markedly. Historically, many prominent anthropologists, including Malinowski (1913) and Murdock (1949), have posited that the division of labor stemmed from the greater physical strength of males. The physical strength argument, however, seems unlikely to account for the fundamental nature of the division of labor cross-culturally for two reasons: there are cultural variations in the disparity of physical strength between men and women, and some of the tasks that are universally and nearly universally assigned to males require limited physical strength (White et. al. 1977). Women's physiology in terms of motherhood and its implications, however, does seem to be integral to understanding this question of the division of labor. Judith K. Brown explores this line of thinking, and it is this specific framework for understanding the division of labor that seems most likely to be able to incorporate alternative expressions of sexuality, including homosexuality. The more women's activities are compatible with childcare, the higher a society's fertility rate. The more a society values high fertility, the less likely they are to tolerate non-reproductive expressions of sexuality such as homosexuality. The converse is also true; if a society places less value on fertility and women performing activities compatible with childcare, the more likely they are to tolerate homosexuality and other non-reproductive expressions of sexuality. These correlations will be further explored in the contemporary examples section of this paper, but first one must understand the tenets of Judith K. Brown's theory.

Judith K. Brown's childcare compatibility theory states that "If the economic role of women is to be maximized, their responsibilities in child care must be reduced or the economic activity must be such that it can be carried out concurrently with childcare" (Brown 1970: 1075). Many anthropologists have noted that the areas of subsistence to which women make major contributions are largely limited to: gathering, hoe agriculture, and trade (Brown 1970: 1076). Since all societies need women to be mothers, and all mothers perform some child care duties, it would make sense that some activities would be incompatible with the expectations of motherhood. This does seem to be the case since it is noted that "no society depends on its women for the herding of large animals, the hunting of large game, deep-sea fishing, or plow agriculture" (Brown 1970: 1076). Since this fundamental division of labor tends to be centered around the expectations of motherhood and fertility with each sex performing certain tasks exclusively, the relationship between the sexes seems to be based on economic cooperation geared towards reproductive success. Homosexuality, as a non-reproductive expression of sexuality between people of the same sex does not initially seem to fit into this framework of the division of labor by sex. However, population pressure dictates that it is not always best for a society to have the highest possible rate of reproductive success; thus, homosexuality, which seems to lower reproductive success, could coexist with the division of labor, which seems geared towards reproductive success, when one considers that different cultures experience differing levels of population pressure and must appropriately balance behaviors surrounding reproductive success in order to survive.

On the level of the individual, homosexuality seems to contradict the principles of evolutionary fitness. Is it not the goal of all living organisms to maximize their own reproductive success? Since homosexuality is not reproductively successful, why would it be practiced or tolerated? A society often cited when discussing extreme practice of homosexuality that may provide some insight into this quandary is the Etoro of New Guinea. In "A Cross-cultural Perspective on Theory and Research on Male Homosexuality" (1979: 358) Dennis Werner summarizes the case of the Etoro as follows:

The Etoro, who live along the southern slopes of Mount Sisa in Papua New Guinea, have beliefs about sexual preferences somewhat the reverse of our own. Heterosexuality is thought to make crops wither and die, while homosexuality causes them “to flourish and yield bountifully” (Kelly 1974b). Not only is heterosexual copulation prohibited for an estimated 205-260 days a year, it is also forbidden in many locations. Heterosexual behavior is allowed “only in the forest, never within a garden, in a garden dwelling, in the longhouse, or in the general vicinity of the longhouse” (Kelly 1974b). The men neglect sex with women but “inseminate” the Etoro youths nightly so that the “seed” planted in them will make the youths grow. As we might expect under such conditions, the Etoro have a rather low birth rate (Kelly 1974a: 33).

Werner studied how rates of homosexuality could affect the fertility rates in different societies. He did this in the context of a study by Barret and Marshall (1969) which “revealed that more acts of coitus are required for conception than most people realize” (Werner 1979: 357-58). For the Etoro, Werner (1975) found that their homosexual behavior reduced their overall annual fertility rate by 15%. Even though this percentage is “based on a number of crude assumptions, is extremely rough and should not be taken literally” (Werner 1979: 358), it suggests that homosexuality can have a significant effect on the overall fertility rate of a society. The indication that the practice of homosexuality can significantly reduce fertility rates gets us a step closer to understanding the evolutionary function of homosexuality, especially if we consider the geographical pressure on human societies. In a world in which humans have established themselves in all hospitable environments on the planet, all peoples are essentially circumscribed by others (Caneiro 1970; Cohen 1977).² In other words, space, in terms of the physical landscape and its resources, is important for all peoples; this limitation of space translates into differing levels of population pressure for different peoples.

The link between fertility and population pressure cannot be treated lightly if a group is to survive. Some societies have mitigated population pressure by tolerating, encouraging, or institutionalizing

homosexuality. This could help to explain to some degree why homosexuality exists even though it minimizes individual fitness or reproductive success. It is important to emphasize here that homosexuality and reproduction are not mutually exclusive, but, as seen with the Etoro, homosexual activity diverts a significant portion of sexual energy away from reproductive ends and thus decreases fertility. Perhaps homosexuality, which is inherently counterproductive for individual “fitness,” could in some circumstances be beneficial to group “fitness” in that it helps keep fertility rates at a sustainable level. There may also be elements of inclusive fitness involved in the expression of homosexuality. Inclusive fitness is the idea that individuals can pass on their genes through their own personal fitness *or* through supporting the fitness of closely related kin. Not having children does not, that is, mean that individuals are not aiding the passing on of their genes if they are in fact supporting the fitness or reproductive success of their siblings or sibling’s children. Indeed links with nieces and nephews have been found to be stronger with childless aunts and uncles, as they are their only connection to the next generation (Connidis 2009: 243).

Homosexuality and Fertility in Contemporary Examples

In order for the correlation between expression of homosexuality and population pressure to be theoretically valid, it must hold true in a contemporary context. More industrialized countries, presumably experiencing higher population pressure, would be expected to be more tolerant of homosexuality. Tolerance of homosexuality seems to be especially linked to whether or not a society values high fertility. An April 1 headline in the *LA Weekly* read “Octomom as Reproductive Lightning Rod: Do the Prochoice and Prolife sides in L.A. finally agree on something?” Nadya Suleman received criticism across the board for electing to have octuplets in addition to her sextuplets from a previous pregnancy. Many perceived her as negligent and irresponsible as a mother and as a global citizen (Dupuy 2009). In a world increasingly concerned with overpopulation, women are no longer encouraged to have many children. As women become increasingly integrated into the global market, their value is perceived in terms of their capital, not in their ability to produce children at a high rate.

Motherhood is now a choice, rather than a stage in every woman's life, and this transition reflects a cultural de-emphasis on fertility. This has profound implications for the issue of homosexuality in its contemporary context. If fertility is less valued, then presumably homosexuality, as a non-reproductive expression of sexuality, would be viewed more favorably or would be encouraged, as in the case of the Etoro. This could well be a factor in the growing acceptance of gay marriages in the US and other major industrial countries.³

In "Cultural Evolution and Gender Roles: A Re-Affirmation of J.K. Brown's Note" (2000), Wade C. Mackey and Nancy S. Coney establish a link between the role of women in society and the overall fertility rate of said society. This also coincides with strict control of sexuality, including restrictions upon homosexuality. Mackey and Coney sought to apply Brown's childcare compatibility thesis (Brown 1970) in a contemporary context. Their results suggest that "as more of a group's women perform tasks which are incompatible with child-rearing, the lower the fertility rate of that group's women" (Mackey and Coney 2000: 285). Women in Muslim communities tend to be largely limited to the domestic sphere in that they are excluded from the political realm and many types of occupations. In 1975 the vast majority of women in Yemen were illiterate and largely considered in purely sexual terms (Mackey and Coney 2000: 291). In general, Muslim communities tend to value high fertility rates and seek to facilitate women into the mother role: "In a society (Egypt) where the patriarchal fertility mandate is emphatic, the social and psychological consequences of 'missing motherhood — of being a woman unable to deliver a child for her husband, family, affines, community, faith, nation, and not inconsequentially her— are nothing if not profound" (Mackey and Coney 2000: 292). Mackey and Coney found that even after moving to Europe, many Muslim immigrants continue to exhibit higher fertility rates than their European counterparts. In Austria, for example, Turkish immigrants averaged 4.43 children per woman compared to 1.64 children per woman for Austrian nationals (Mackey and Coney 2000: 292). The US has had a rate of population increase below replacement value since 1972, which contrasts sharply with the high fertility rates found in such groups as the Amish, the Mormons, the Hasidic Jews, and the Hutterites. All of these groups have varying

degrees of restrictions for preventing full participation of women in the political and economic spheres. Mackey and Coney quote from the Mormon Gospel Principles (1978) to illustrate the expectations placed upon women: “ ‘motherhood is woman’s noblest calling.. A mother’s most important responsibility is to bring children into the world and to care for and teach them. Bearing children is one of the greatest of all blessings. To refuse to do so is a serious sin.’ ” (Mackey and Coney 2000: 294). All of the cultures described above, from the Muslims to the Mormons, have conservative religious views concerning sexuality and tend, as a consequence, to have a very narrow view of what constitutes proper sexual expression. In these groups sexuality is tightly controlled and follows a prescribed path towards reproduction. Homosexuality is generally not tolerated, as it strays from this prescribed path and undermines the overall goal of high fertility. Thus, homosexuality cannot be separated from this issue of fertility and control of sexual behavior. They are facets of the same issue: if high fertility is valued, sexuality will tend to be more controlled, including limitations of homosexuality.

The contemporary United States as a highly industrialized country exhibits both a de-emphasis on high fertility and a high tolerance of homosexuality. In the greater culture of the United States emphasis on fertility has become secondary to economic priorities. Motherhood is no longer an expectation imposed upon all women; instead it is increasingly being looked at as a personal choice. Children require a significant time and monetary commitment, and if a woman wants to be as successful as possible in a society that measures success by the bottom line, she may very well opt out of motherhood. In a random sample of 630 women from the *Who’s Who* of 1997, a list of the most successful individuals in the US, 42.5% were listed as childless (Mackey and Coney 2000: 290). As standard of living goes up, the cost to raise a child to maturity also goes up, thus making it largely unfeasible economically to have large numbers of children. In an article in the *US News and World Report* Phillip Longman found that in 1997 the cost of supporting one child all the way through college was approximately \$1,455,581 for a middle-income family (annual before-tax family income of \$35,500 to \$59,700) (Longman 1998: 9).

Since it has been established that fertility has been increasingly

de-emphasized in the US, what is the current state of homosexuality in the nation? In the beginning of April of 2009 the Supreme Court of Iowa ruled a law restricting marriage to that between a man and a woman unconstitutional, and Iowa became the third state to recognize gay marriage (Davey 2009). This came as a surprise to many, since a Midwestern state such as Iowa is not usually thought of as being on the forefront of progressive politics. Legally recognizing homosexual marriage is far more radical than one might assume because it divorces marriage from reproduction. Many prominent anthropologists have argued that the origin of pair-bonding was an economically cooperative unit geared towards raising dependent offspring (Lancaster 1985; Marlowe 2003). Gay marriage, therefore, seems a marked deviation from this standard in human history. The adoption of children by same-sex couples, another rising trend, further separates heterosexual marriage from reproduction and rearing of children. Although many individuals in the US still harbor prejudices towards homosexuality, it is increasingly becoming an accepted part of life in which each individual has the prerogative to choose his or her own sexual path. This is not intended to imply that individuals choose sexual preferences; merely that homosexuality as a form of sexual expression is increasingly socially acceptable.

The country of China is an interesting example to examine in this context since initially it does not seem to fit the model in which increasing population pressure corresponds to increasing tolerance of homosexuality. China is one of the most prominent examples of a systematic attempt at controlling fertility rates in the modern world. That nation's one-child policy is widely recognized as a radical attempt at curbing their exploding population growth and has largely been successful: "Had China not imposed its controversial but effective one-child policy a quarter-century ago, its population today would be larger than it presently is by 300 million—roughly the whole population of the United States, or of the entire world around the time of Genghis Khan" (Muelenberg 2004: 31). In China, where population growth is so strictly controlled, it is difficult to discern the status of homosexuality. The authorities claim that no tradition of homosexuality exists in China, and whenever it is encountered, they openly denounce such claims (Gil 1992: 571). Although acquiring

data is obviously difficult, the reality seems to be quite different. According to Gil (1992), “homosexuality has again surfaced [in China] and enjoys an invigorated openness among the younger generation... there is a strong male homosexual contingent in university campuses across the nation... a mainland sociologist, also estimated 7.4% of respondents from his survey samples- all individuals from urban areas- to have had same-sex sexual relations.” (Gil 1992: 571). This country appears to be making strides, however, in recognizing the presence of homosexuality and even moving towards some degree of tolerance. A 2001 headline in the *South China Morning Post* reads: “China decides homosexuality no longer mental illness” (“China”). The Chinese Psychiatric Association officially removed homosexuality from a list of perversions, a step the US took in 1973. The article also pointed out that “The step adds to growing tolerance of gays and lesbians in China, where an underground culture of gay bars, Web sites and sports clubs is flourishing.” Thus tolerance of homosexuality *has* apparently increased in China, although it appears that emphasis on population control predated and was much more significant than any allowances by the state for homosexuality. This is an important point because homosexuality does *not* have to coincide with efforts to reduce fertility or conscious, systematic attempts at population control. There merely exists an overall correlation between population pressure and the *likelihood* that homosexuality will be expressed. Population pressure, depending on cultural context, can lead to higher rates of abortion or a push towards asceticism. Homosexuality is merely one of a variety of ways that cultures respond to population pressure.

Conclusion

Homosexuality is an enormously variable practice cross-culturally. Some cultures prohibit homosexuality under any circumstances, while others, such as the Etoro, seem to favor homosexuality over heterosexuality. While the exact causes of homosexuality are still not clear, there does seem to be a correlation between population pressure, as manifested in the intensity of mode of adaptation, and expression of homosexuality in a given culture. In cultures or subcultures where high fertility is very important and sexuality is expected to follow a highly prescribed path, homosexuality is not likely to be practiced

because it is often perceived as a threat to high fertility rates. As previously noted, Werner's work has demonstrated that a marked reduction in fertility can occur as a result of homosexuality. Thus it is important to understand this relationship between homosexuality and fertility when examining the issue in its contemporary and evolutionary context.

Notes

¹ Ultimately this paper is based on a unified theory for the origins of agriculture which incorporates Mark Cohen's theory on global demographic pressure from his book *The Food Crisis in Prehistory* with David Rindos's theory of co-evolution presented in *The Origins of Agriculture: An Evolutionary Perspective*.

² Robert Carneiro linked geographic circumscription to the rise of state-level societies. Mark Cohen established that what he calls "the food crisis in prehistory," which necessitated the origins of agriculture, resulted from human beings saturating all the habitable environments on the planet. Global expansion was our first response to population pressure, which was feasible until approximately 10,000 years ago when foraging peoples occupied all areas that could support that mode of adaptation. Thus since 10,000 years ago all peoples have been socially circumscribed by others.

³ On April 2, 2009 the Associated Press reported that Sweden had joined The Netherlands, Norway, Belgium and Spain in allowing same-sex marriages, thus becoming the fifth European country to extend full marriage rights to gay couples choosing to get married ("Sweden").

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