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# Homosexuality and Evolution: Analyzing Homosexuality as an Adaptive Strategy

## Background

### Homosexuality Prevalence

The Lesbian, Gay, Bisexual, Trans, and Queer (LGBTQ) movement is growing. A poll by Gallup concluded that 4.5% of American adults were LGBTQ. Gallup also provides a gender breakdown of that for females (5.1%) and males (3.9%). While it may seem easy to split homosexuality into these five categories, as with analyzing anything closer, there is a near-infinite complexity that is rapidly discovered and this is before beginning to ask questions like, "why?" Homosexuality, in general, seems to be counterintuitive to adaptivity and would provide substantial barriers to the passing of genes; however, research is showing that this is not the case. Further inquiry is necessitated as Gallup also reports these numbers are growing.

Included in the LGBTQ category are gay males, lesbian women, bisexuals of the polar masculine and feminine ends of the gender spectrum, the gender queer (ex. Non-binary, gender fluid, and non-gender-conforming, etc.), and transgendered peoples. Within the gender queer and transgendered peoples are subsets of gay transgender men and lesbian transgender women, and further gender queer individuals. The focus of this literature review will not be on subtypes within the spectrum, but focusing on the adaptive strategies of homosexuality as it pertains to adaptation.

Homosexuality, according to Nila, Barthes, Crochet, Suryobroto, & Raymond (2015), should be disappearing according to their analysis of Male Homosexual Behaviors (MHP) and cited material which indicates MHP's heritability. Nila, et al. (2015) do note that records of homosexuality have existed throughout history in various texts. Also among their reports are the varying tendencies for eastern societies to have higher rates of homosexuality than western societies.

### Life History Theory

Literature surrounding homosexuality is often based on Life History Theory (LHT). Luoto, Krams, & Rantala (2017) describe LHT as a powerful tool for describing effort expenditure throughout life, and analysis of the tendency to cultivate personal growth versus the tendency towards reproductive acts. By looking at the life cycle of an organism, the conditions which it is

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born to, and the strategies they use to reproduce, LHT can be used to develop some causal relationships to mating behaviors. Luoto et al. (2017) note that, "Life history strategies are a composite of developmental, somatic, and psychological variables commonly represented on a fast to slow continuum". Based on biological facts LHT assigns gendered strategies. Evolutionary psychology will often consider LHT as it provides some focus on the development of an organism in the historical sense, across evolution, and analyzes existing behavior partly based on previous evolutionary adaptive changes.

## **LHT and Homosexuality**

Luoto et al. (2017) propose a hypothesis that homosexuality and bisexuality in women is a result of life history, this is due to erratic environments. That is, women in dangerous conditions resort to faster strategies of reproduction, including promiscuity so intense that they do not care if it would yield offsprings. While plausible, Figueredo (2018) contends that there is a need to divide this as a sex-specific phenomenon, otherwise male fast life strategies would include homosexuality innately, but do not necessarily. Figueredo also contends there are intrauterine determinations of homosexuality, including but not limited to homosexuality itself and different subtypes of each type. Figueredo (2018) makes a slight insinuation of environmental causes through discussions of the higher presence of factors that might make early life more unstable (i.e. unstable parent relations, absence of father figures, and adverse childhood conditions to name a few) are more present in the lives of homosexual males than that of heterosexual males; while also contending that these conditions which make women use more masculinized LHT strategies might feminize homosexual men into adopting feminine LHT strategies. This is counter-intuitive of LHT, as the language used to describe these roles is gendered. Adverse conditions should push men to hyper masculinity according to Figueredo (2018) which would include fathering many children to many mothers rather than homosexual strategies.

## **LHT Family Life Markers for Homosexuality**

Among the previously mentioned markers to predict homosexuality other events and traits serve as predictors to homosexuality. Petterson, Dixson, Little, & Vasey (2018) mention that cis-gendered and transgender males have more male relatives, older brothers, larger families, reduced offspring production, greater gender nonconformity in adulthood and childhood, as well as higher levels of childhood separation anxiety. All of these traits describe either a highly competitive market in terms of sexual partners or instability/insecurity in the structure of their family unit that, these markers transcend cultural boundaries to result in similar rates of homosexuality. Diamond & Alley (2018) note that high levels of adversity in development can cause rapid sexual maturation, sexual debut, and more risk-taking in sexual behaviors. Instability in one's own ability to secure a mate may necessitate alternative strategies to ensure genetic reproduction. To what degree are these strategies seated in psychology and

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development?

When measuring the response times and rating of attractiveness on a seven-point Likert scale by cis-gendered and trans-gendered men Petterson et al. (2018) saw there was little difference between response rates of either group towards males, whom they also found more attractive than women. Both took extended periods to view male composite photographs than they did female composite photographs, and both groups rated their attraction higher. Petterson rationalized this as a biologic and psychological similarity between groups. These conclusions result in a split decision between nature and nurture determination.

## **Is Homosexuality An Alternative to Reproduction?**

Nila, et al. (2015) provide an alternative explanation for homosexuality's adaptivity. Nila, et al. explain that kin selection and "helping" behaviors may be the key to ensuring the continued spread of a homosexual strategy by using a pattern of behavior similar to matrilineal strategies. A homosexual male can contribute to the assurance of survival in other by favoring their nieces and nephews, produced by their siblings. Male reproduction was a mysterious affair prior to paternity testing according to Gaulin (2004, pp. 359) in his description of low paternity probability. In matrilineal societies resources are spread to the children of the sister rather than the direct descendant's son. There is some evolutionary explanation to this though since siblings share at least 25% of genes, and this is known since women's maternity is assured in primitive societies. That means that a nephew and uncle share at least 12.5% of their genetic makeup. In this way, homosexuality may form a protective barrier of one's genes without risking direct loss of kin, due to a greater support network and more providers. The only stipulation to this strategy working is that a sibling produces multiple offsprings to create a 50% share of genes, as opposed to heterosexual strategies requiring only one to create an equal share of genes.

Nila, et al.'s (2015) hypothesis predicted nieces and nephews to be given resources, based on previous research showing higher scores of altruism among homosexual and bisexual males, to create what they describe as indirect mating and avuncular tendency. By sacrificing their own mating potential homosexuals create a more likely candidate to continue their family line, even if they share fewer genes. While Nila et al.'s discussion is primarily on male subjects it is a possibility among lesbian and bisexual women as well. Nila, et al's work showed a low direct reproduction rate in homosexual males early in life, but as homosexual men aged they saw more indirect mating success as the subject's brothers had more children. This is consistent with slower mating strategies of LHT. While this work focused on a less industrialized area (Samoa) than the United States, it serves to reason that this could be the case in industrialized nations as well, thanks to industrial technology granting the ability to share resources farther away.

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## Female Sexual Fluidity

LHT strategies may more diverse than strict heterosexual and homosexual preference. Diamond & Alley (2018) were more focused on the exclusivity of women's sexual attraction and behaviors while analyzing Luoto et al.'s (2018) findings and methods. Diamond & Alley recognize previous research that distinguishes the behaviors of exclusive lesbians and bisexual women and finds a number of troubling interactions with their environment may have some root in the distinction between exclusive lesbians and bisexuals including early sexual behavior, promiscuity, delinquency, substance use, and high-risk sexual behavior. Diamond & Alley also present what could be a distinction between homosexuality and heterosexuality, namely that women's sexual pleasure and the act of reproduction are detached from each other and suggest that women might have a higher priority for sexual pleasure than reproduction.

The distinction presented by Diamond & Alley (2018) is punctuated by previous research they cite showing that women who have sex with women report more satisfaction and better orgasms than women who only have sex with men. Diamond & Alley stress that women's sexuality may be more flexible or fluid for these reasons, and conclude that all women may be capable of sexual contact with women. This is in contrast to those reporting as heterosexual males and homosexual males who are more likely to only be aroused by female partners and male partners respectively. It is not unreasonable conjecture then that women may flex between these strategies in an effort to spread their own genes directly, while also conducting some spread indirectly while pleasure is decoupled from reproduction.

## Discussion & Conclusions

### Reduced Mating Competition & Matrilineality-like strategies as Insurance

Homosexuality, by the author's account, is an effective strategy in genetic reproduction. There is room for homosexuality to be just as productive in genetic reproduction, but more importantly the phenomenon seems to be more about genetic production. Given that a homosexual has a sibling, homosexuality and patrilineal strategies serve to protect genetic shares in nieces and nephews rather than creating more competition for resources. In an environment where mating might be more difficult due to previous success of the sibling, homosexuals fill sexual needs while also providing resources and protection to their own share of genes carried in those nieces and nephews. This reduces challenges to that successful sibling, and in the case of more fluid subjects may allow them to engage in direct reproductive efforts later in life.

### Erratic Environments & Securing One's Own Genes

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In a more erratic environment homosexuality seems to serve the group. Take the case of these two siblings for instance. If one is heterosexual while the other is homosexual and the demands of environmental challenges include a food shortage, the homosexual brother can aid the heterosexual brother's offsprings without creating their own progeny to further strain food supply. In this way the homosexual brother protects his own genes in part by increasing their survival rate. The heterosexual brother abides the behavior because his progeny have more resources. Both brothers have their genes more securely passed. While not a strictly intuitive strategy it works to protect the genes of all involved.

## **Gendering LHT strategies**

LHT favors a cut and dry tendency that high adversity in the environment causes fast strategies in both sexes to reproduction, and low adversity in the environment causes slow reproductive strategies. Likewise, much of LHT assigns high probability of these strategies based on sex and gender. As more is learned about sex spectrums, as well as homosexuality, models of LHT need to be adapted. The literature contained produces a model which seems atypical to previous understandings given heritability of homosexuality and feminine sexual flexibility, as well as factoring in homosexuality as a strategy and needs reworked to suit these findings. Finally, there is also a need to disentangle homosexuality and study broader aspects such as lesbian females, gay males, bisexuality, as well as gender queer and transgender sexualities.

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