

# Are homosexuals born that way?

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*When Lady Gaga released the song Born This Way in February 2011, the response was phenomenal. The song reached number one in 19 countries, including Australia, Austria, Canada, Germany, Ireland, Japan, New Zealand, Switzerland and Sweden. In the United States, it topped the Billboard Hot 100 chart for six weeks. And it became the fastest-selling song in iTunes history, selling one million copies in five days.<sup>1</sup> Why?*

After repeating the chorus line “I was born this way” umpteen times, Lady Gaga goes on to equate homosexuality with race:<sup>2</sup>

*Rejoice and love yourself today  
Cause baby you were born this way  
No matter gay, straight, or bi  
...  
No matter black, white or beige  
...*

*I was born this way hey!*

Equating sexuality with race – as something a person is born with – has become a widely held view. For example, when the Experience Project website posed the question: “Do you think people are born Gay?” one response was the following post:<sup>3</sup>

*People are born either gay or straight. You can't choose to be tall or short, you can't choose to be black or white and you can't choose to be gay or straight... If being gay was a choice, we would have only half the gay people we do now because most people wouldn't choose to be part of a hated and ridiculed group consciously. No, being gay is not a choice.*

What does determine a person's sex, identity and sexuality? This paper looks at the evidence.

## Biological sex

Human beings have 46 chromosomes carrying some 32,000 genes.<sup>4</sup> All the chromosomes carry the genetic material that gives us our biological characteristics. The 23rd pair are the sex chromosomes that determine our sex – XX for females and XY for males.

At conception, the father's sperm carrying 23 chromosomes unites with mother's egg, also carrying 23 chromosomes, and the fertilised egg quickly becomes a cell with 46 chromosomes arranged in 23 pairs. The mother contributes one of her X chromosomes. The father contributes either an X or Y chromosome, thereby determining the sex of the child. An XX

combination in the fertilised egg produces a female, and an XY combination produces a male.

**Thus, almost everyone – including homosexuals and lesbians – is born chromosomally female (XX) or chromosomally male (XY).**

## Genetic disorders

In rare cases – typically fewer than one in a thousand births – these standard combinations do not happen, and other combinations result for reasons that are still not very clear.<sup>5</sup>

In one rare condition an X chromosome can be “lost,” leaving only a single X. These fertilised X cells still grow normally, but produce individuals who are very short and physically female, but have no ovaries and are infertile. This is called Turner syndrome. In another rare condition, a fertilised cell can end up XXX, which grows into a woman with a normal female body, but with diminished fertility and sometimes mental retardation.<sup>6</sup>

In rare cases, males can be XYY, with male body type, reduced fertility and increased height. In another rare male condition, known as Klinefelter syndrome, the fertilised egg has XXY or XXXY chromosomes and grows into a man with male body type, but with an unusually small penis, shrunken testes, and low production of the male hormone, testosterone, so that at puberty they become only moderately masculine and have scant body hair.<sup>6</sup>

**People with these rare genetic disorders generally identify as male if a Y chromosome is present and female otherwise – and they are generally not homosexual in orientation.**

## Intersex conditions

In extremely rare cases – typically fewer than one in 5,000 births – a person's sex

may be ambiguous. The person's body may (a) not be easily classifiable as either male or female due to having both male and female genitalia or (b) have gonads (testes or ovaries) or external genitals that are inconsistent with their chromosomal sex.

The term *intersex* is used to describe such cases. Expert medical advice may be needed to assign the appropriate sex and for corrective surgery or hormone treatment.

This term is also claimed by those whose biological sex is quite clear but who wish for psychological or other reasons to be considered as neither male nor female.

**People with these extremely rare intersex conditions generally identify with the sex they are assigned – and they are generally not homosexual in orientation.**

Homosexual men overwhelmingly have normal male XY chromosomes and male gonads and genitalia. Lesbian women overwhelmingly have normal female XX chromosomes and female gonads and genitalia.

## Gender identity

The term *gender identity* is used to describe a person's self-understanding as male or female: “I am a boy (or man)” or “I am a girl (or woman)”.<sup>7</sup> In almost all cases this corresponds to the person's biological sex determined at birth.

A person's gender identity is largely formed during the first six or seven years of childhood and is influenced by both genetic and cognitive (rational) factors. The genetic factor is the child's biological sex. The cognitive factor is the child's growing understanding of gender.

The genetic factor is evident even in one-day-old babies, as Cambridge University researcher, Jennifer Connellan, found when she studied the response of one-day-old infants to either a face or a mechanical mobile.<sup>8</sup> Baby girls preferred the face while the baby boys were more fascinated by the mobile.

Many parents have observed differences which child psychologist Professor David Elkind summarised as follows:

*Girls, on the average, talk earlier than boys and are generally more verbal. Boys are more likely than girls to engage in aggressive*

play. While girls seem to socialise on the basis of personality and appearance, boys tend to socialize around activities, mainly sports. Although both boys and girls are comparable in over-all intelligence, boys on average do better on tests of spatial ability and girls on tests of verbal facility. It must be remembered that these are not absolute but overlapping differences so that some boys may have exceptional verbal skills and some girls have really extraordinary spatial abilities.<sup>9</sup>

The cognitive factor – the child’s growing understanding – was described by US child development psychologist, Lawrence Kohlberg, as progressing in stages.<sup>10</sup> The first stage is the simple ability to label oneself as a boy or girl and others as a boy, girl, man or woman – usually reached by the age of two years. The second stage is the recognition that gender remains constant over time – from babyhood to adulthood – usually reached by the age of four years. The final stage involves understanding that gender is independent of external features such as hair length or clothing – usually reached by the age of seven years.

**The result of the gender development process is that almost all adults – including homosexuals and lesbians – have a gender identity that matches their biological sex.**

### Intersexuality

What is the gender identity of adults in those extremely rare cases where the genitals at birth are ambiguous or don’t match their chromosomes?

Several university studies have traced the gender identity after puberty of people born with normal male XY chromosomes but with feminised or severely abnormal genitals.<sup>11, 12, 13</sup> Other studies have traced the gender identity of those born with normal female XX chromosomes but with masculinised genitals.<sup>14</sup> In these extremely rare cases associated with hormone disorders, some were assigned at birth as male and raised as boys; others were female-assigned at birth and raised as girls.

Almost all those with male XY chromosomes but feminised genitals, who were male-assigned at birth and raised as boys, subsequently developed and maintained a male gender identity.

Most of those with male XY chromosomes but feminised genitals, who were female-assigned at birth and raised as girls, subsequently developed a female gender identity. However, after puberty, some developed male secondary sex characteristics – deeper voice, masculine muscles, and body and facial hair – and a male gender identity.

Most of those with female XX chromosomes but masculinised genitals, who were female-assigned at birth and raised as girls, subsequently developed a female gender identity. However, after

puberty, some developed a male gender identity.<sup>15</sup>

Medical understanding of the diagnosis, appropriate gender assignment and management of these rare intersex cases is still developing.

**In these extremely rare cases – fewer than one in 5,000 births – people are generally not homosexual in orientation.**

### Transgenderism

The term *transgender* is used to describe the very small proportion of men who assert a female identity or women who assert a male identity.<sup>16</sup> The term is used for people who have normal XY chromosomes and male genitalia or normal XX chromosomes and female genitalia. They are not to be confused with intersex people or those with genetic disorders.

Transgenderism is a form of *Gender Identity Disorder* (GID) or *Gender Dysphoria*, recognised as a medical disorder.<sup>17</sup> In the United States, diagnosis of the condition permitted by the American Psychiatric Association excludes those with intersex characteristics. The International Classification of Diseases excludes those with a chromosomal abnormality.

A recent estimate of the prevalence of transgenderism from New Zealand passports, which allow a transgender category, is about 0.03% for male to female and 0.004% for female to male transgenders.<sup>18</sup>

Gender Identity Disorder may be compared with *Body Integrity Identity Disorder*, formerly known as *Amputee Identity Disorder*, a psychological disorder in which sufferers feel they would be happier living as an amputee. It is typically accompanied by the desire to amputate one or more healthy limbs to achieve that end.<sup>19</sup>

### Sexual attraction

The large scale *Sex in Australia* survey conducted in 2001/2002 found that 97.4% of Australian men identified as heterosexual, 1.6% as homosexual and 0.9% as bisexual. For women 97.7% identified as heterosexual, 0.8% as lesbian and 1.4% as bisexual.<sup>20</sup> These figures are far smaller than the false 10% figure sometimes quoted.

Since the prevalence of homosexuality is some 10 times greater than the prevalence of genetic disorders (0.1%) and fifty times greater than intersex cases with hormonal disorders (0.02%), almost all homosexuals are XY males and almost all lesbians are XX females.

If homosexuality is not caused by genetic or hormonal disorders, how does it

develop? More generally, how does sexual or romantic attraction for another person develop?

As children develop into adults they mature sexually in stages governed by hormones. When the adrenal gland releases increased levels of androgens, pubic hair starts growing about the age of six to eight years.<sup>21</sup> Following this, the ovaries in girls and the testes in boys begin to grow and release sex hormones.<sup>22</sup> Puberty starts for girls at age 10 to 11 and for boys about 12 to 13 years – and is complete about 15 to 17 for girls and about 16 to 18 for boys.<sup>23</sup>

Sexual attraction to another person, whether opposite-sex or same-sex, is usually first experienced during this transition period from child to adult.<sup>24</sup> But what influences whether a person’s sexual attraction is towards an opposite-sex or a same-sex person?

### A ‘gay gene’?

The idea that homosexuals are “born that way” and that there is a “gay gene” has become a modern myth, widely believed in academic and media circles, and promoted by entertainers such as Lady Gaga. But what is the evidence?

There is now overwhelming evidence that single genes do not cause common disorders with a prevalence of about 1%, such as schizophrenia. Small contributions from several genes are much more likely. As researchers Plomin and McGuffin at the Institute of Psychiatry, King’s College London observe: “single-gene disorders tend to be severe but rare, whereas less severe but common disorders typical of

psychopathology are likely to be influenced by multiple genes.”<sup>25</sup>

Researchers Bearman and Bruckner at Columbia and Yale Universities comment that “social scientists and geneticists alike stress the obvious point that neither genes, nor hormones, nor specific social situations determine sexual behaviour by themselves. Rather, the extent to which same-sex and opposite-sex desires are expressed in the individual is seen to be a complex interplay of biological, social, and situational factors.”<sup>26</sup>

Human behaviour is complex. Humans are not robots. There is no single gene governing sexual preference or any other preference. There is no gene for smoking, dancing or making sarcastic remarks.<sup>6</sup>

The important question in human behaviour research is to understand how “the individual, whether consciously or not, directs his or her own life course and his or her power to do so.”<sup>27</sup>

**Humans are not robots. There is no single gene governing sexual preference or any other preference.**

## Twin studies

Some of the most important insights into the relative influence of genes and social environment on behaviour – nature and nurture – have come through twin studies.

Since identical (or monozygotic) twins share the same genes, any genetic influence on one twin will be expressed equally in the co-twin. For example, since eye colour is genetically inherited, if one twin has blue eyes the co-twin will also have blue eyes. Recent twin studies have confirmed that identical twins have the same eye colour in almost 100% of cases.<sup>28</sup>

An indication of family influence on behaviour can be gained from a comparison of identical and fraternal (dizygotic)

twins, since the latter share the same family environment but not identical genes. For example, a recent University of Queensland study found that both monozygotic (MZ) and dizygotic (DZ) female twins chose husbands of similar income with 25% correlation.<sup>29</sup> While the brides were free to choose, their choices were influenced by family environment.

Twin studies generally look for three kinds of influence: genetic (heritability), shared environment (family influence) and unique environment (chance or choice). For example, what influences people who take up smoking? Six twin studies summarised by researchers at the University of Texas found, for males, 37% heritability, 49% family influence and 17% other influence. For females they found 55% heritability, 24% family influence and 16% other influence.<sup>30</sup>

What does 55% heritability for female smoking mean? Are half the female population genetically destined to smoke? No! Are girls free to choose not to smoke? Yes! It also may mean that identical twin girls influence each other more than fraternal twins do. Identical twins may tend to take up smoking together or refrain from smoking together. Caution is needed when interpreting twin studies.

## Sexuality studies

Why are most people sexually attracted to the opposite sex?

One indicator of sexual attraction to the opposite sex is whether or not people marry (or cohabit). Some twin studies have considered the question: why do some people marry (or cohabit) and others not? As with other twin studies, they explored the influences of genes (heritability), family (common environment) and other influences (unique environment). They have found that the propensity to marry is dominated by genetic influence: a

heritability of up to 70%.<sup>31</sup> Little or no family influence was found.

The remaining influence was due to the unique life experience of each twin. This would include chance – meeting the right partner, or choice – deciding not to marry.

The strong genetic influence on sexual attraction to the opposite sex helps ensure the future of the human race.

Why are some people sexually attracted to people of the same sex?

Several large scale twin studies have addressed the question of same-sex attraction in recent years, including: Bailey (2000),<sup>32</sup> Långström (2010)<sup>33</sup> and Burri (2011).<sup>34</sup> Again, they have explored the influences of genes,

family and unique life experiences.

All three studies found that the dominant influence on same-sex attraction is not genes, but unique life experiences – with estimates of such influences ranging from about 55% to 75%.

In the Bailey and Långström studies, this was the only statistically significant influence found. No study found any family influence, namely due to the twin's common social environment. The Burri study found a small but statistically significant heritability of 25%. How should this be interpreted? The influence could be genetic, or identical twins could influence each other towards same-sex attraction more than fraternal twins do.

What are the non-shared social environment factors that dominate the development of same-sex attraction?

All studies based on a comparison of identical twins and fraternal twins assume that the non-shared environment includes anything that individual twins experience differently. Even a shared home may be a non-shared environment, since parents may treat different children differently. A family event, such as divorce, may affect children differently. Children may experience different interactions with siblings, relatives, peers, schooling and the media.

One non-shared environment factor has been identified: significantly higher rates of childhood or adolescent homosexual molestation are reported among homosexual men and women than among heterosexuals.<sup>35, 36, 37</sup> For example, Dr Tòmeo reported that 46%

of the homosexual men surveyed were homosexually molested as a child, compared with 7% of heterosexual men. And 22% of lesbian women reported childhood homosexual molestation compared with 1% of heterosexual women.<sup>36</sup> Homosexual abuse during childhood or adolescence seems to be one of the major influences later on adult same-sex attraction.

## Childhood gender identity

Another significant finding of twin studies is that both heritability and unique environment influence *childhood gender nonconformity* of both males and females. This term describes childhood behaviour typical of the opposite sex – for example boys preferring to play with dolls and girls with trucks. It was assessed by participants completing a questionnaire recalling childhood behaviour under age 12 years.

Daryl Bem, a social psychologist at Cornell University, has proposed a theory known as Exotic Becomes Erotic.<sup>38</sup> The theory is that gender *conforming* children, who identify with other children of their own sex, tend to view children of the opposite sex as “different” or “exotic”.

When their romantic interest is aroused

during puberty, they are attracted to the opposite sex: exotic has become erotic. However, gender *nonconforming* children, who prefer to associate with opposite-sex children, view other children of their own sex as different or exotic. During puberty, the exotic again becomes erotic and they experience romantic attraction to others of their own sex.



**Twin studies: genes do not dictate sexual orientation**

Does childhood gender nonconformity in childhood lead to adult homosexuality? A study of 25 girls aged 3 to 12 with histories of *gender identity disorder* – a serious form of childhood gender nonconformity – were followed up as adults, some 15 years later.<sup>39</sup> Six (24%) had bisexual or homosexual behaviour, which is a higher percentage than the general population.

However, that also means that 76% did not. Childhood gender nonconformity has some influence, but it is not destiny!

There is no one path leading to homosexuality in adulthood, as Neil and Briar Whitehead make clear in their book *My Genes Made Me Do It*.<sup>6</sup>

Different people are affected by different social experiences resulting in many different paths to same-sex attraction.

## Can sexual orientation change?

One of the strongest arguments against homosexuality as an inborn, unalterable condition is change in sexual orientation. Scientific literature shows that sexual orientation is not fixed but fluid. People change between homosexual and heterosexual orientation to a surprising degree in both directions, but a far greater proportion of homosexuals become heterosexual than heterosexuals become homosexual. Some of the change is therapeutically assisted, but in most cases it appears to be circumstantial. Life itself can bring along the factors that make the difference.

### Spontaneous change

Several researchers have reported major spontaneous changes in sexual attraction and behaviour over time. For example, a study of Dutch adult males found that, of those who had experienced same-sex attraction at some stage of their lives, about half reported those feelings disappeared later in life.<sup>40</sup> And a New Zealand cohort study found that one half of females and one third of males with

occasional same-sex attraction at 21 years had only opposite-sex attraction as 26-year-olds.<sup>41</sup> Clearly, a third to a half of same-sex attracted young adults find themselves attracted to the opposite sex later in life.

Sexual attraction is particularly unstable in adolescents. US longitudinal research on adolescent health, using large scale surveys of 16, 17 and 22-year-olds, revealed major changes in romantic attraction and sexual behaviour between these ages.<sup>42</sup> Of the boys who identified at 16 years as same-sex attracted, 72% were opposite-sex attracted by the age of 22 years – they had “discovered” girls. And of the same-sex attracted girls at 16 years, 55% were opposite-sex attracted by 22.

If the US results on changes between the ages of 16 and 22 years are combined with the New Zealand changes between 21 and 26 years, some 80% of same-sex attracted boys and girls could become opposite-sex attracted as adults. The common claim that sexual attraction is unchangeable is a myth.

### Conclusion

Lady Gaga calls *Born This Way* her “freedom song” but it is actually the opposite.

Human beings are born male and female. Our biological sex is determined by our sex chromosomes – XX for female and XY for male – and remains unchanged throughout our lives. So called “sex change” operations only change bodily appearance, not biological sex. In very rare cases biological sex is ambiguous at birth and is assigned on expert advice.

Gender identity is how we feel about ourselves: “I am a boy/man” or “I am a girl/woman.” It is influenced by both biological sex and social environment.

Sexual attraction is first experienced during the puberty years and may be either opposite-sex or same-sex. Opposite-sex attraction has a strong genetic influence. Same-sex attraction is strongly influenced by life experiences and choice – but genetic influence is weak.

Spontaneous change in sexual attraction is common, both from homosexual to heterosexual and the reverse. Over two thirds of same-sex attracted adolescents change to opposite-sex attracted adults.

Homosexuals are not born. They are made through a variety of life experiences and choices. To suggest otherwise is not freedom but a cruel lie.

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