

# SUMMARY



This is a summary of more than 20 years of research into homosexuality. It draws on more than 10,000 scientific papers and publications from all sides of the debate.

The research is orthodox, and objective, undertaken by a New Zealand scientist (PhD - Biochemistry) whose international career has spanned more than 40 years.

It is essentially a summary of our book, *My Genes Made Me Do It! - Homosexuality and the Scientific Evidence* (published USA, 2000, revised 2010, 2013, 2015, 2016 and kept current on this website.)

\* SSA is shorthand for Same Sex Attraction, OSA for Opposite Sex Attraction

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Those researchers who know most about genes and same sex attraction say, "Your genes did not make you do it". Bear in mind that many of the following arguments apply to all human behaviours.

**These summary statements are much more deeply explored in each chapter.**

## Change

The huge amount of change in sexual orientation is one of the clearest evidences that homosexuality is not hard-wired by genes or anything in the biological environment.

Large studies now show that:

*For adults:*

- About half of those with exclusive SSA move towards heterosexuality over a lifetime. Put another way, 3% of the practising heterosexual population (both men and women) claim to have once been either bisexual or homosexual.
- These changes are not therapeutically induced, but happen "naturally" in life, some very quickly.
- Most changes in sexual orientation are towards exclusive heterosexuality.
- Numbers of people who have changed towards exclusive OSA are greater than current numbers of bisexuals and exclusive SSA people combined. In other words, "Ex-gays outnumber actual gays."
- Exclusive OSA is 17 times as stable as exclusive SSA for men, and 30 times as stable as exclusive SSA for women. (Women move about more in their sexual orientation than men.)

*For adolescents:*

- Most teenagers will change from SSA. In fact, in the 16 to 17 year age group, 98% will move from homosexuality and bisexuality towards heterosexuality.

- 16 year olds saying they are SSA or Bi-attracted are 25 times more likely to say they are opposite sex attracted at the age of 17 than those with a heterosexual orientation are likely to identify themselves as bi-sexual or homosexual.
- 16-year olds who claim they are opposite sex attracted will overwhelmingly remain that way.

## Genes

### *Twin Studies:*

These very complex comparisons of identical twins and non-identical twins definitively rule out genetic determinism. Identical twins with identical genes are about 11-14% concordant for SSA. If homosexuality were “genetic,” identical co-twins of homosexual men and women would also be homosexual 100% of the time. In classic twin studies the genetic fraction is less than 23% for men and 37% for women, and may be as low as 10%. Twin studies continue to find steadily lower genetic input into homosexuality as methodology improves and samples become larger. Everyone has at least a 10% genetic influence in their behaviour— because without genes there can be no human behaviour of any kind. Twin studies show that individualistic reactions to chance events (in which one identical twin reacts differently from the other) are by far the strongest contributors to homosexuality. In other words personal individual reactions to random events are a strong factor.

### *Other*

- A scan of the whole genome has not found any homosexual genes, unlike the case for schizophrenia (which has still only identified 4 genes linked to 3% of schizophrenia.)
- From an understanding of gene structure and function there are no plausible means by which genes could dictate SSA (or other behaviours) in a person.
- So far, genetically dictated behaviours of the “one-gene-one-trait” variety have been found only in very simple organisms. Generally, geneticists agree that many genes (from at least five or six to many hundreds) contribute to any particular human behaviour.
- Any genetic influence is believed to be weak and indirect.
- No genetically determined human behaviour has yet been found. The most closely genetically-related behaviour yet discovered (mono-amine oxidase deficiency leading to aggression) has shown itself remarkably responsive to counselling.
- A genetically dominated SSA caused by a cluster of genes could not suddenly appear and disappear in families, as it does. It would persist through every generation for many generations. It is genetically implausible that many “heterosexual” genes could switch off at the same time.
- The human race shares most of its genes—something between 99.7% and 99.9%. That means all ethnic groups will have most of them. This has three implications.
  - If homosexuality is genetically dictated, homosexual practices will be identical or very similar in all cultures. But the enormous range and diversity of homosexual practice and customs in different cultures (and within cultures), argues against this.
  - There would be a similar percentage of homosexuality in all cultures. But homosexuality has been unknown in some cultures and mandatory in others.
  - Changes in homosexual practice and behaviour in different cultures would take place very slowly, over many centuries. But this is not what history shows. (The decline of whole models of homosexuality (the Greek, over a couple of centuries, and the Melanesian, within a century); the relatively sudden (in genetic terms) emergence of the present Western model over a couple of centuries; and abrupt changes of practice within an ethnic group, even over a single generation, are not consistent with anything genetic. Even less so the swiftly changing sexual practices within the current Western model.)
- The occurrence of SSA in the population is too frequent to be caused by a faulty pre-natal developmental process, so it is not innate in that sense either. This

includes epigenetic processes. If SSA were genetically determined, and led to same-sex contact only it would have bred itself out of the population in only several generations. It would not exist today. The age of first same-sex attraction could be about 10% genetically influenced and opposite sex attraction about 15%. (Remember, everyone has a 10% genetic input into anything they think or do.) First attractions (both SSA and OSA) occur on average at age 10 and are rarely “earliest memories,” meaning attraction is mostly socially induced.

## Hormones

- There have been many studies, none of which has shown any convincing relationship between homosexuality and exposure to pre-natal hormones, although several have shown very weak links between pre-natal hormone exposure and infant play. Studies examining effects of very high doses of female hormones to pregnant mothers show no effect on males and a dubious effect on women. Therapy changing levels of adult male and female sex hormones has been shown to affect sex drive but not orientation.
- The idea that homosexuality results from immune attack on male brain characteristics by the mother is poorly supported. In that case male testes and genitalia (having the largest cluster of male-specific targets) should be attacked but are not.

## Brain structure

- Numerous older studies of brain microstructures, e.g in the nineties, have failed to come up with replicable differences between adult heterosexual and homosexual brains.
- Modern studies show male and female brains at birth are not structurally different, making the likelihood of a specifically “homosexual” brain remote indeed. The main consistently replicable difference between male and female brains, from about age two or three, is their size.
- The environment has effects on the brain from birth to puberty and beyond.
- Sexual dimorphism of the brain mainly occurs at puberty, but even so, experts still have difficulty identifying structural differences between adult male and female brains (let alone heterosexual and homosexual). There is substantial overlap.
- Neuroscientists are finding that the brain is extraordinarily plastic. The scientific consensus now is that even as an adult, we are what we are making our brains, even though we may not be aware of the constant ongoing process. These changes in microstructure are visible in brain scans, within months.
- If differences are found between homosexual and heterosexual brains they could easily be the result of years of conditioning (repeated thinking patterns and behaviour).

## Social, sociological

### *Intersexes*

- About 90% of Western “intersex” children (those born with ambiguous genitalia) choose to remain in their gender of upbringing when puberty reveals their true genetic gender and surgical interventions are offered. Often, this choice is made in the face of very contrary physical and hormonal characteristics. It argues for predominant environmental influences on the formation of gender orientation and behaviour.

### *Other*

- Divorce doubles the risk of later homosexuality in children

- The stages of psycho-social development toward adult heterosexuality are well defined and accepted by developmental psychologists, and are so obviously learned that heterosexuality is clearly not genetically mandated. In surveys of adult homosexuals many show deficits in several of these developmental stages—suggesting that homosexuality is cultural and environmental rather than genetic.
- There is a much higher occurrence of homosexuality among those who have been raised in large cities, rather than in rural areas, arguing that the environment is much more powerful than genes in the development of homosexuality.
- A scientific/sociological tool, Path Analysis, has been argued to show that there is no social or familial basis to homosexuality, but rather a biological one. However, social and family paths leading to homosexuality were collectively significant, though individual paths were not. In contrast genetic paths were collectively insignificant.

## Instincts

- Our instincts, such as self-preservation, hunger, and reproduction, are among the most deeply embedded and strongest impulses we have, but these are able to be controlled and even adapted. If we want to argue homosexuality is also a deeply ingrained instinct, we can also argue it should be malleable and responsive to training.

## Genetic content of homosexuality is minimal

Geneticists, anthropologists, developmental psychologists, sociologists, endocrinologists, neuroscientists, medical researchers into gender, and twin study researchers are in broad agreement about the role of genetics in homosexuality. Genes don't make you do it. There is no genetic determinism, and genetic influence at most is minor. Individualistic reactions to random factors are very important.

Those who say homosexuality is genetically influenced are correct, but only to about this degree:

If a girl becomes pregnant at age fifteen, we could argue that she is genetically predisposed to. We could say that in her culture, her genes gave her the kind of face and figure that send male hormones into orbit and bring her under a level of pressure that she is unable to resist. But that's about the strength of the genetic influence. There are a huge number of environmental factors that could also have brought the pregnancy about, from cancellation of the basketball game she was going to watch with a girlfriend, permission to use Dad's car, her boyfriend's company, the movie they had just viewed together, and failure to use a contraceptive, to big environmental factors like personal values systems, peer group pressure, and an emotionally distant father.

Is this consensus likely to change? Might some major biological link be discovered which could change everything?

For most of these scientific disciplines, the findings have been clearly established from facts that will not change. But what of future studies of brain micro-structure, or detailed analysis of genetic composition and function? Will they reveal links between brain structure and human behaviours, or behaviours and genetic sequences?

Of course they will. Papers will continue to be published. But we can safely conclude that even authors wanting to find such links will almost always include the standard scientific caveats that the influence is minor, and that the environment is important. What we can reasonably say about future research is that it will enter new fields and come up with new links, but none of them will be definitive.

This is proved once and for all by studies of identical twins. They have identical genes, but if one is homosexual the identical brother or sister usually isn't. There is only an 11-14% chance he/she is homosexual. This includes all the influences we know about now and those we know nothing about and have yet to discover. All of them, added together, only have a rather weak effect.

The first edition of *My Genes Made Me Do It!* in 2000 floated the trial balloon that the genetic content of SSA would ultimately turn out to be 10%. That is quite imprecise, and could be in the range 0-20%. But even if the final result is 20% this is a weak and indirect influence. At the time of writing, 2010, our assertion still holds, and is stronger than in 2000.

Homosexuality, as a genetic inevitability, has probably been gay activism's most effective PR initiative in the campaign for equal rights and special protections. Although it is no longer politically correct or fashionable in many circles to say that homosexuals can change, it is scientifically accurate to say so. We are not speaking only of behavioural changes but changes in attraction.

The fact is that nothing makes us do anything—neither our genes nor our environment.

### **What is the cause of SSA?**

There is no one cause. No single genetic, hormonal, social, or environmental factor is predominant. There are similar themes, e.g. childhood gender non-conformity, difficulties in developing a sense of gender identity (for a range of reasons), sexual abuse, peer and family dynamics, sexual history, but the mix varies with individuals, and individual personal responses to life-events are the single overriding factor. Two children from the same family and social environment can interpret the same incidents very differently. So random reaction, if it structures itself into self-image, can become a significant contributor to homosexuality — as twin studies show. Often, from early on, there is a felt inability to find acceptance in same-sex groups, often a defensive withdrawal from those groups in conflict with a desire to belong that can begin to intensify around some admired same-sex figure. After puberty that intense emotional focus can get confused with sexual feelings and activity, a response that, if the pattern continues for some years, can lead to self-identification as homosexual or lesbian and sometimes intentional adoption of a gay life-style. But each person is a unique combination of contributing factors and has a unique path out of homosexuality.

The homosexual orientation can and does change. The scientific literature is full of evidence of fluid sexuality. Where responses are deeply entrenched the process is longer. People who have not taken on the behaviour and lifestyle very deeply change more easily.

Is it all worth it? Those who take the process on will usually say it is, *if* they have had helpful input and support. In a therapeutic environment the sexual orientation of about two thirds of clients changes anywhere from slightly to profoundly. Others change greatly without any therapeutic input at all. Life itself brings along the ingredients for resolution of underlying issues. Half of all homosexual and bisexual people in the West become exclusively heterosexual over a lifetime. (Read more in Chapter 12 of *My Genes Made Me Do It!*) It may be heroic to "come out" to friends and family as gay, but it is even more heroic to swim against the tide and find a way back to what is still possible.

DNA is a ladder of nitrogenous bases and sugars that is a recipe for proteins, not sexual preferences. But it is also a ladder of destiny, a Jacob's ladder, and it is our choice whether angels or demons walk up and down it. We can decide to capitulate to the "genetic argument" or not. Do your genes make you do it? You can choose.

I saw, struggling in a stagnant pool, a bee which had somehow fallen in. It flapped its wings futilely and tried to dog-paddle, but made no progress. It seemed to be drowning. All around the bee were little creatures called water-fleas who hopped round, trouble-free on the surface of the water. They didn't seem interested in the bee at all. I took the bee out of the pool using a dead leaf from a tree, and set it down nearby on the slate surround. The bee staggered off the leaf, drunkenly wandering in its new freedom, headed straight back to the pool and fell in again. I lifted it out once more, and the bee staggered round rather aimlessly and seemed quite lost. I transferred it further away onto some grass. It tried to use its wings, but it looked to me as though they might be torn, and it might never fly again. It staggered from blade to blade, under some and over some in the three dimensional maze of the herbage. It even hopped from one blade to another, perhaps pathetically imagining it was flying. Then—suddenly—after I had practically given up, it flew! It wove a surprisingly straight course through the airy dimensions and was out of sight in seconds. I never saw it again. This I know: that bee reached heights the water-fleas couldn't even dream of and so can you.

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