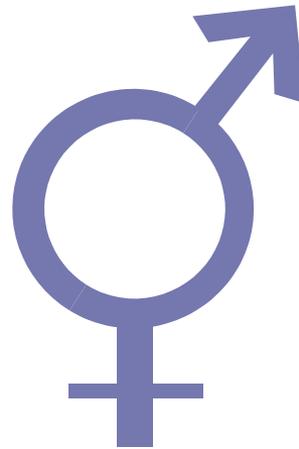




The Science of Sexual Orientation

Dr Daniel Thomas

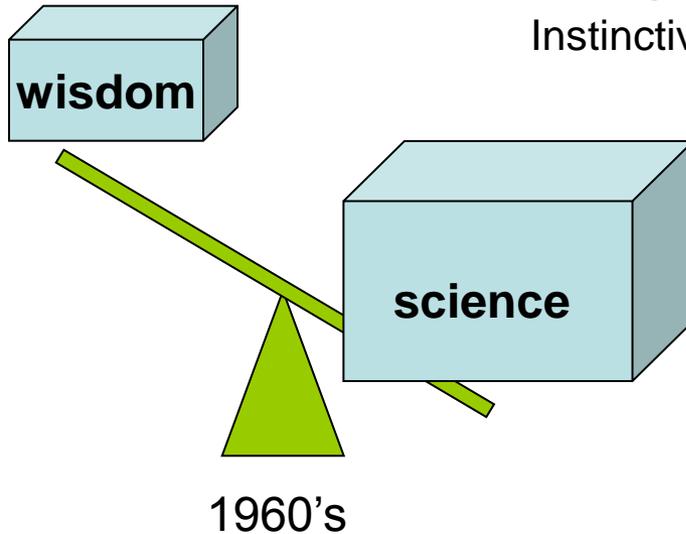


Why does that person behave like that?

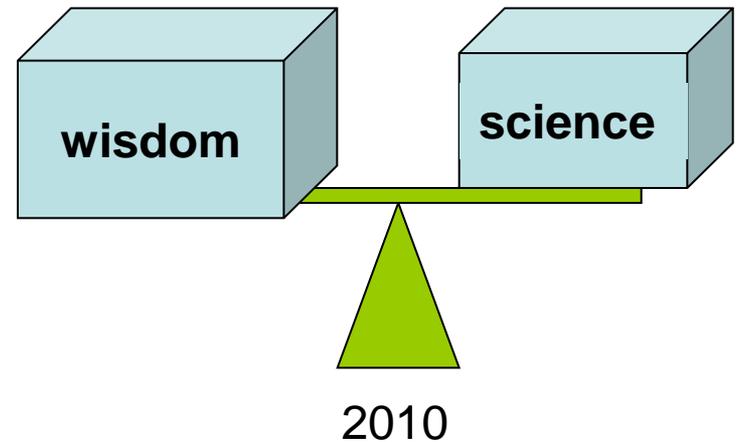
Science: *testable hypotheses for consistent reproducible phenomena*

Wisdom: science + metaphysical narrative, intuition, word of God, dreams

Nature vs Nurture
Genes vs Environment
Race vs Culture
Inherited vs Learned
Instinctive vs Conditioning



“Technology will solve man’s problems
The world is getting better
We can control population
Cancer will soon be cured
Genes explain everything
The bible is out of date”



“Technology will not solve man’s problems
Global warming confusion
Fraud in science
Anti-promethianism
Rise in mental illness
Breakdown of family unit
Dissatisfaction with Western medicine”

Why do we have sexual reproduction?

- Sexuality *remains a mystery to science*
- In 1861 Charles Darwin wrote “*We do not even in the least know the final cause of sexuality; why new beings should be produced by the union of the two sexual elements, instead of by a process of parthenogenesis*”
- The two-fold cost of sex: a new mutation which causes asexual reproduction will quickly wipe out males : Why hasn't this happened?
- “*The search for selective advantages to sex has gone on for many decades and is still unsolved despite the assumption that there is an obvious advantage to sex from generating increased variability*” Brian Charlesworth *Current Biology* (2006)



Eph 5:32 I tell you a profound mystery: I am talking about Christ and the Church

Are there lots of homosexual plants and animals?

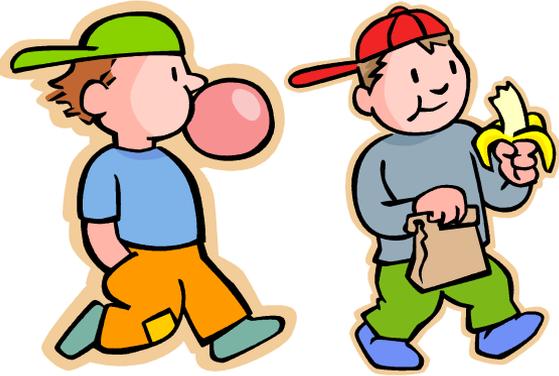
- No – surprising how few examples there are!
- Sexual reproduction is the norm for the majority of eukaryotes: all mammals and birds reproduce sexually and there is only a handful of **parthenogenetic** species of reptiles, amphibia and fish. In plants less than 0.1% reproduce asexually
- Parthenogenesis = *virgin + birth*
 - Eggs hatch unfertilized from a female and give live female offspring
 - Offspring are always XX so *males can soon become extinct*
 - Komodo dragons (some), whiptail lizard (all females), hammerhead shark, some queen bees at certain times, crayfish
 - Perhaps useful in colonising new islands to allow rapid reproduction from single female



What determines sexual orientation?

- We still don't really know
- Two major scientific theories
 - (1) Hormones present when the baby was in the womb
 - Hypothalamic nucleus in gay men similar to women (LeVay 1991)
 - Women exposed to testosterone as babies experienced homosexual fantasies and cross-gender behaviour
 - (2) Genes
 - Numerous studies show families where many members are homosexual
 - Is this genetic or environmental?
 - **Strong correlation** between childhood gender nonconformity and sexual orientation (Bailey and Zucker, 1995)

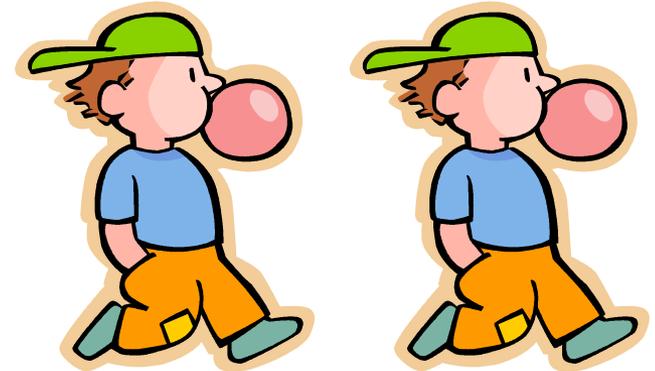
Twin Studies



Non-identical twins
Different genes
Same family
Same environment

30% had a twin brother
with the same trait

Alcoholism

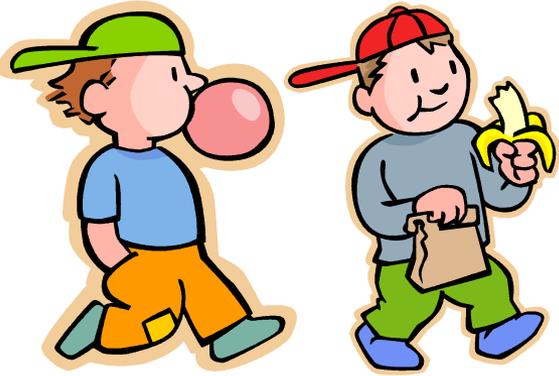


Identical twins
Identical genes
Same family
Same environment

50% had a twin brother
with the same trait

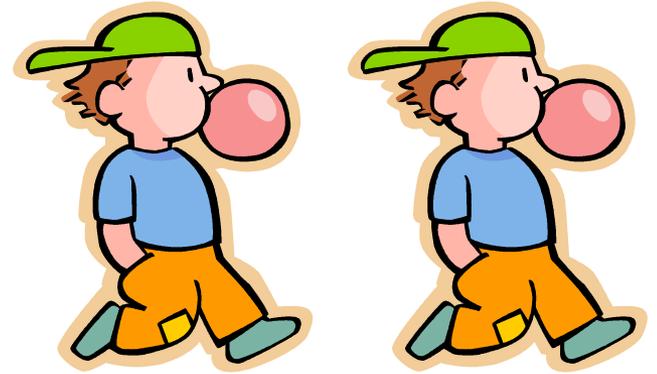
= mild genetic component, 30%

Twin Studies



Non-identical twins
Different genes
Same family
Same environment

40% had a twin brother
with obesity



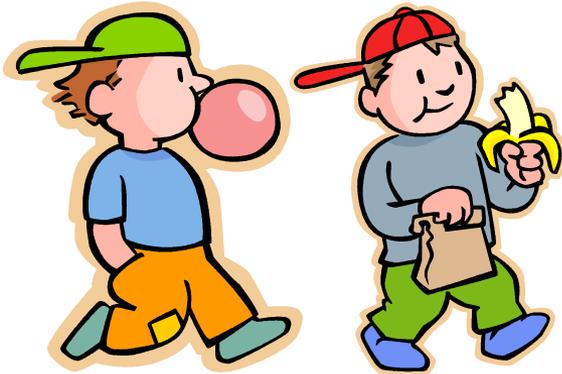
Identical twins
Identical genes
Same family
Same environment

77% had a twin brother
with obesity

Obesity

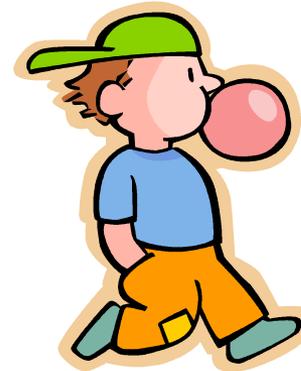
= moderate genetic component, 70%

Completely heritable trait

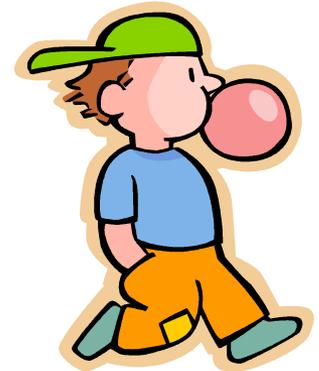


CF

0.001% of non-identical twins



CF



CF

100% of identical twins

Cystic Fibrosis

The heritability of CF is 100%
If you get the genes you **will** get the disease
You will not be able to work full-time
You do not have a choice in how you live

Unfortunately the word *gene* or *genetic* in the public sphere implies “total causality”

Genetics of Sexual Orientation

- A number of studies since 1950's have shown higher levels of homosexuality in families and in identical twins
 - One study linked a gene on X-chromosome to homosexuality with weak association
 - Most suffer from ascertainment bias and subjects were recruited through gay literature rather than unbiased surveys and DNA was not checked
 - More recent studies show no strong linkage between X chromosome and homosexuality
 - All studies agree there is a small heritable component

Genetic and Environmental Influences on Sexual Orientation and Its Correlates in an Australian Twin Sample

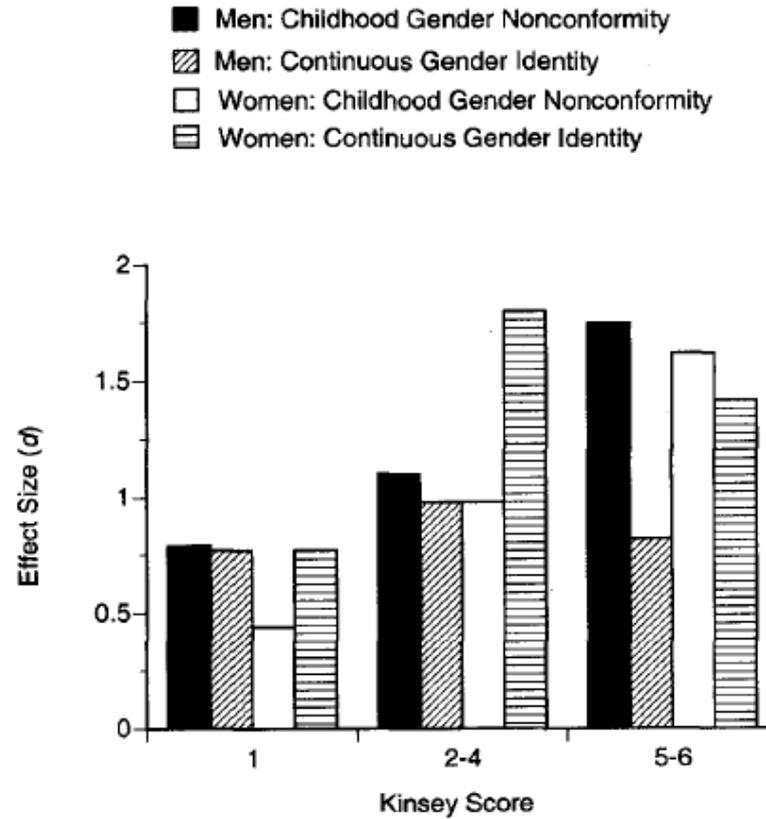
J. Michael Bailey
Northwestern University

Michael P. Dunne
Queensland University of Technology

Nicholas G. Martin
Queensland Institute of Medical Research and University of Queensland

Australian Twin Study: 4901 twins
Homosexual orientation lower than previous studies ~3%
No reporter bias in the way the data was collected
There was evidence for a weak genetic effect of 30%
Not clear why genetic effects that promote homosexual orientation should remain in population

The close association with childhood gender issues



Conclusions

- Genes control and regulate sexual desire and behaviour
- Science cannot adequately explain why living things reproduce sexually
- There is a mild genetic component of ~30% of homosexual orientation according to unbiased twin studies
- The public think this means homosexuality is 100% genetic just like cystic fibrosis: this is not true
- This is much less than the genetic component of obesity or alcoholism
- The reason for a minor genetic component is not understood
- There is a strong link between gender non-conformity in childhood and later development homosexuality
- There is no single gene that causes/predicts whether you are going to become a homosexual

Science and Morality

- What is the main aim for such research?
 - To see if there is a genetic cause for homosexuality/homosexual behaviour
 - A justification for morally debated actions
 - The underlying assumption is that a genetic cause ensures such a moral justification

The Limitations of Science

- What can science teach us about morality?
 - Nothing
- The Nature of Morality
 - Objective morality must come from God

Genetic Determinism

- Richard Dawkins (River out of Eden)

“In a universe of electrons and selfish genes, blind physical forces and genetic replication, some people are going to get hurt, other people are going to get lucky, and you won't find any rhyme or reason in it, nor any justice. The universe that we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil, no good, nothing but pitiless indifference.”

“DNA neither cares nor knows. DNA just is. And we dance to its music.”

- The Bible is the transcendent source that provides us with a basis for morality
- It is also the source that provides us with the details of the gospel of Jesus Christ that offers of forgiveness of sins



My approach in evangelism

- Every human is a reflection of the triune God though we may want to recognise it
- Every human has dignity and value because they bear that image regardless of future or past sin
- That image can never be erased no matter how maligned it becomes
- God's love, purpose and dignity bestowed on the believer (plus the in-filling of the Holy Spirit) is better than any sexual satisfaction or relationship this world can offer
- If homosexuality is anti-ontological as stated in God's word, then it may be associated with a sense of shame and death, though not often expressed or articulated.