

## Genes, environs shape gay behaviour

The world's biggest study on twins has thrown up enough evidence to suggest that a combination of genes and environmental factors shape homosexual behaviour.

The study, led by Niklas Langstrom of Karolinska Institutet, conducted the first truly population-based survey of all adult (20-47 years old) twins aged between 20 and 47 year old in Sweden.

This study looked at 3,826 same-gender twin pairs (7,652 individuals), who were asked about the total numbers of opposite sex and same sex partners they had ever had.

Studies of identical and non-identical or fraternal twins are often used to untangle the genetic and environmental factors responsible for a trait.

While identical twins share all of their genes and their entire environment, fraternal twins share only half of their genes and their entire environment.

Therefore, greater similarity in a trait between identical twins compared to fraternal twins shows that genetic factors are partly responsible for the trait.

The findings showed that 35 percent of the differences between men in same-sex behaviour (that is, that some men have no same sex partners, and some have one or more) is accounted for by genetics.

Qazi Rahman, co-author of the study and an expert on sexual orientation, explained: 'Men become gay or straight because of different developmental pathways, not just one pathway.'

For women, genetics explained roughly 18 percent of the variation in same-sex behaviour, non-shared environment roughly 64 percent and shared factors, or the family environment, explained 16 percent.

The study shows that genetic influences are important but modest, and that non-shared environmental factors, which may include factors operating during foetal development, dominate.

Importantly, heredity had roughly the same influence as shared environmental factors in women, whereas the latter had no impact on sexual behaviour in men.

'The study is not without its limitations . . . Despite this, our study provides the most unbiased estimates presented so far of genetic and non-genetic contributions to sexual orientation, ' said Qazi.

The findings of the study are being published in the forthcoming issue of the journal Archives of Sexual Behaviour.

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