

Are gays “born” that way?

WHAT SCIENCE SAY - The latest study (30 Aug 2019)

<https://science.sciencemag.org/content/365/6456/eaat7693>

INTRODUCTION

Across human societies and in both sexes, some 2 to 10% of individuals report engaging in sex with same-sex partners, either exclusively or in addition to sex with opposite-sex partners. Twin and family studies have shown that same-sex sexual behavior is partly genetically influenced, but **previous searches for the specific genes involved have been underpowered to detect effect sizes realistic for complex traits.**

RATIONALE

For the first time, new large-scale datasets afford sufficient statistical power to identify genetic variants associated with same-sex sexual behavior (ever versus never had a same-sex partner), estimate the proportion of variation in the trait accounted for by all variants in aggregate, estimate the genetic correlation of same-sex sexual behavior with other traits, and probe the biology and complexity of the trait. To these ends, we performed genome-wide association discovery analyses on **477,522 individuals** from the United Kingdom and United States, replication analyses in 15,142 individuals from the United States and Sweden, and follow-up analyses using different aspects of sexual preference.

RESULTS

In the discovery samples (UK Biobank and 23andMe), five autosomal loci were significantly associated with same-sex sexual behavior. Follow-up of these loci suggested links to biological pathways that involve sex hormone regulation and olfaction. Three of the loci were significant in a meta-analysis of smaller, independent replication samples. Although only a few loci passed the stringent statistical corrections for genome-wide multiple testing and were replicated in other samples, our analyses show that many loci underlie same-sex sexual behavior in both sexes. In aggregate, all tested genetic variants accounted for 8 to 25% of variation in male and female same-sex sexual behavior, and the genetic influences were positively but imperfectly correlated between the sexes [genetic correlation coefficient (r_g) = 0.63; 95% confidence intervals, 0.48 to 0.78]. **These aggregate genetic influences partly overlapped with those on a variety of other traits, including externalizing behaviors such as smoking, cannabis use, risk-taking, and the personality trait “openness to experience.”** Additional analyses suggested that sexual behavior, attraction, identity, and fantasies are influenced by a similar set of genetic variants ($r_g > 0.83$); however, the genetic effects that differentiate heterosexual from same-sex sexual behavior are not the same as those that differ among nonheterosexuals with lower versus higher proportions of same-sex partners, which suggests that **there is no single continuum from opposite-sex to same-sex preference.**

Scientists quash idea of single 'gay gene'

<https://www.theguardian.com/science/2019/aug/29/scientists-quash-idea-of-single-gay-gene>

No 'gay gene': Massive study homes in on genetic basis of human sexuality

<https://www.nature.com/articles/d41586-019-02585-6#ref-CR1>