

Motivation

Little previous evidence for GxSex

Sexual dimorphism is pervasive and heritable contribution is expected to lie primarily in autosomes

Response to cues such as testosterone; evidence for GxE in non-human organisms

Heritability analysis often incompatible with either model or cannot distinguish between models

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Model

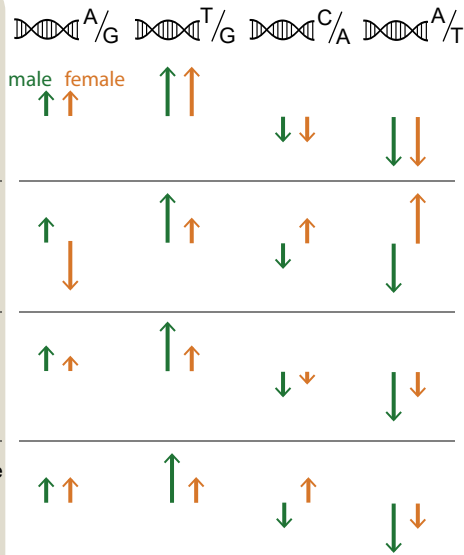
No GxSex

Weakly or negatively correlated genetic effects

Highly correlated effects, difference in magnitude ("amplification")

Mixture of covariance relationships

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Expectation from Heritability Analysis

- (a) h_m^2 and h_f^2 differ because of environmental differences
- (b) $h_m^2 < h^2$ or $h_f^2 < h^2$

- (a) Low or negative genetic correlation
- (b) $h_m^2, h_f^2 > h^2$, and the larger the difference, the lower the genetic correlation

- (a) High genetic correlation
- (b) h_m^2 or $h_f^2 < h^2$

Compatible with all observations; motives:

- (a) Direct estimation of genetic effect covariance, rather than sole reliance on heritability estimates
- (b) Modelling mixture components

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 - (a) Direct estimation of genetic effect covariance, rather than sole reliance on heritability estimates
 - (b) Modelling mixture components