



$$H_i^A \sim \text{Binomial}(\theta h_i^A, s)$$

$$Fa_i^A \sim \text{Binomial}(\theta f_i^A, s)$$

$$H_i^B \sim \text{Binomial}(\theta h_i^B, s)$$

$$Fa_i^B \sim \text{Binomial}(\theta f_i^B, s)$$

$$\theta h_i^A \leftarrow \phi\left(\frac{1}{2}D_i^A - C_i^A\right)$$

$$\theta f_i^A \leftarrow \phi\left(-\frac{1}{2}D_i^A - C_i^A\right)$$

$$\theta h_i^B \leftarrow \phi\left(\frac{1}{2}D_i^B - C_i^B\right)$$

$$\theta f_i^B \leftarrow \phi\left(-\frac{1}{2}D_i^B - C_i^B\right)$$

$$D_i^A, D_i^B \sim \text{Gaussian}(0, 0.5)$$

$$C_i^A, C_i^B \sim \text{Gaussian}(0, 2)$$

$$\tau_i^H \leftarrow \theta h_i^A - \theta h_i^B$$

$$\tau_i^F \leftarrow \theta f_i^B - \theta f_i^A$$