



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

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

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

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

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

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

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

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

$$D_i^A \sim \text{Gaussian}(\mu_{Ai}^D, \lambda_{Ai}^D)$$

$$C_i^A \sim \text{Gaussian}(\mu_{Bi}^D, \lambda_{Bi}^D)$$

$$D_i^B \sim \text{Gaussian}(\mu_{Ai}^C, \lambda_{Ai}^C)$$

$$C_i^B \sim \text{Gaussian}(\mu_{Bi}^C, \lambda_{Bi}^C)$$

$$\mu_{Ai}^D, \mu_{Bi}^D, \mu_{Ai}^C, \mu_{Bi}^C \sim \text{Gaussian}(0, 0.001)$$

$$\lambda_{Ai}^D, \lambda_{Bi}^D, \lambda_{Ai}^C, \lambda_{Bi}^C \sim \text{Gamma}(.001, .001)$$

$$\delta_i \leftarrow D_i^A - D_i^B$$