$$\mu^D \sim \text{Gaussian}(0, 1)$$

$$\delta \sim \text{Gaussian}(0, 1)$$

$$\mu_A^D \leftarrow \mu + \frac{\delta}{2}$$

$$\mu_B^D \leftarrow \mu - \frac{\delta}{2}$$

$$\lambda_j^D \sim \text{Gamma}(.001, .001)$$

$$D_{ij} \sim \text{Gaussian}(\mu_j^D, \lambda_j^D)$$

$$C_{ij} \sim \text{Gaussian}(0, 1)$$

$$\theta_{ij}^H \leftarrow \phi(\tfrac{1}{2}D_{ij} - C_{ij})$$

$$\theta_{ij}^F \leftarrow \phi(-\tfrac{1}{2}D_{ij} - C_{ij})$$

$$H_{ij} \sim \text{Binomial}(\theta_{ij}^H, s)$$

$$Fa_{ij} \sim \text{Binomial}(\theta_{ij}^F, n)$$