



Priors

$$\mu_i^A \sim \text{Gaussian}(0, 100), \sigma_i^A \sim \text{Exponential}(0.01)$$

$$\mu_i^b \sim \text{Gaussian}(0, 100), \sigma_i^b \sim \text{Exponential}(0.01)$$

$$k_i^{ran} \sim \text{Exponential}(0.01), \lambda_i^{ran} \sim \text{Exponential}(10)$$

$$k_i^{det} \sim \text{Exponential}(0.01), \lambda_i^{det} \sim \text{Exponential}(10)$$

Subject specific parameters

$$A_{is} \sim \text{Gaussian}(\mu_i^A, \sigma_i^A)$$

$$B_{is} \sim \text{Gaussian}(\mu_i^B, \sigma_i^B)$$

$$\sigma_{is}^{ran} \sim \text{Gamma}(k_i^{ran}, \lambda_i^{ran})$$

$$\sigma_{is}^{det} \sim \text{Gamma}(k_i^{det}, \lambda_i^{det})$$

Deterministic noise for repeated game

$$n_{isg}^{det} \sim \text{Logistic}(0, \sigma_{is}^{det})$$

Random noise for each game

$$n_{isgr}^{ran} \sim \text{Logistic}(0, \sigma_{is}^{ran})$$

Observed choices

$$\Delta Q_{isgr} \leftarrow \Delta R_{isg} + A_{is} \Delta I_{isg} + b_{is} + n_{isgr}^{ran} + n_{isg}^{det}$$

$$c_{isgr} \sim \text{Bernoulli}(Q_{isgr} > 0)$$