



Priors

$\mu_i^A \sim \text{Gaussian}(0, 100)$ ,  $\sigma_i^A \sim \text{Exponential}(0.1)$

$\mu_i^B \sim \text{Gaussian}(0, 100)$ ,  $\sigma_i^B \sim \text{Exponential}(0.1)$

$k_i^n \sim \text{Exponential}(0.1)$ ,  $\lambda_i^n \sim \text{Exponential}(10)$

$k_i^\epsilon \sim \text{Exponential}(0.1)$ ,  $\lambda_i^\epsilon \sim \text{Exponential}(10)$

Subject specific parameters

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

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

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

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

Stimulus driven noise for repeated game

$\epsilon_{isg} \sim \text{Gaussian}(0, \sigma_{is}^\epsilon)$

Free noise for each game

$n_{isgr} \sim \text{Gaussian}(0, \sigma_{is}^n)$

Observed choices

$\Delta Q_{isgr} \leftarrow \Delta R_{isg} + A_{is} \Delta I_{isg} + B_{is} + n_{isgr} + \epsilon_{isg}$

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