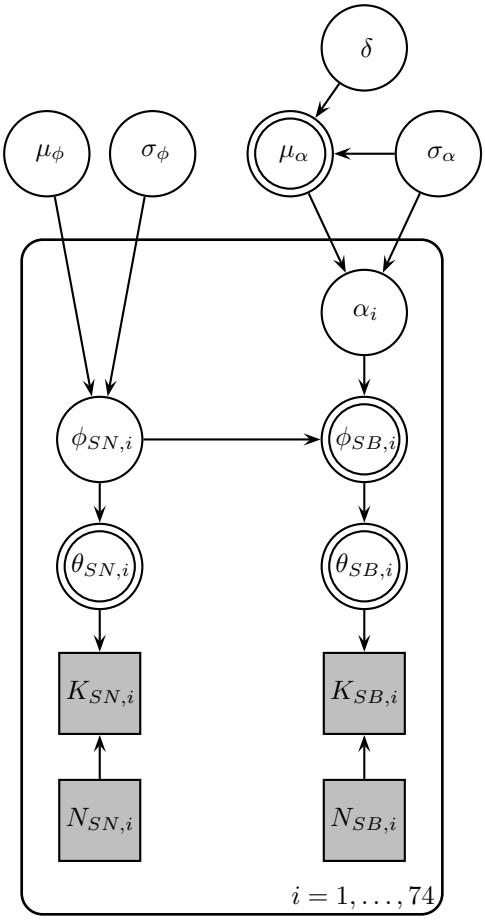

$$K_{SN,i} \sim \text{Binomial}\big(\theta_{SN,i}, N_{SN,i}\big)$$

$$\theta_{SN,i} = \Phi\big(\phi_{SN,i}\big)$$

$$\phi_{SN,i} \sim \text{Normal}\big(\mu_\phi, \sigma_\phi^2\big)$$

$$K_{SB,i} \sim \text{Binomial}\big(\theta_{SB,i}, N_{SB,i}\big)$$

$$\theta_{SB,i} = \Phi\big(\phi_{SB,i}\big)$$

$$\phi_{SB,i} = \phi_{SN,i} + \alpha_i$$

$$\alpha_i \sim \text{Normal}\big(\mu_\alpha, \sigma_\alpha^2\big)$$

$$\mu_\phi \sim \text{Normal}_{(0,+\infty)}\big(0, 1\big)$$

$$\sigma_\phi \sim \text{Uniform}\big(0, 10\big)$$

$$\mu_\alpha = \delta \times \sigma_\alpha$$

$$\sigma_\alpha \sim \text{Uniform}\big(0, 10\big)$$

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