$$y_{ij} \sim \mathrm{Multinomial}(\boldsymbol{\omega}_{ij})$$

$$\boldsymbol{\omega}_{ij} = \underbrace{\left(\omega_{ij0}, \omega_{ij1}, \cdots, \omega_{ijc}, \cdots, \omega_{ij(C-1)}\right)}$$

$$\omega_{ijc} = \sum_{b=0}^{C-1} \gamma_{cb} \pi_b$$

$$\tau_b \sim \mathrm{N}(0, 10^2) \qquad \tau_{(b+1)} \sim \mathrm{N}(0, 10^2) I(\tau_{(b+1)} > \tau_b)$$

$$\boldsymbol{\lambda}_c \sim \mathrm{Dirchlet}(\alpha_{c0}, \alpha_{c1}, \cdots, \alpha_{c(C-1)})$$

$$\pi_b = \Phi\left[(\tau_b - \nu^*_{ij})\sigma_j^{-1}\right] - \Phi\left[(\tau_{(b+1)} - \nu^*_{ij})\sigma_j^{-1}\right]$$

$$\nu^*_{ij} \sim \mathrm{N}(\lambda_j \eta_i, \sigma_j^2)$$

$$\sigma_j^2 = 1$$

$$\eta_i \sim \mathrm{N}(0, 1)$$

$$\lambda_j \sim \mathrm{N}^+(0, 5^2)$$