

$$\pi(\Theta|D) \propto L(\Theta|D)\pi(\Theta)$$

$$\prod_{i=1}^n \prod_{j=1}^J f(y_{ij}|b_{g_j}, \theta_{z_i}) f(b_{g_j}) f(\theta_{z_i}) f(g_j) f(z_i) \pi(\Theta).$$