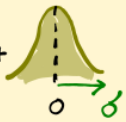
Normal distributions

Centred parameterisation

$$y = N(\mu, \sigma) =$$

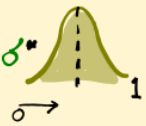
A grand mean and a distribution (partly non centred)

$$y = \mu + N(0, \sigma) = \mu +$$



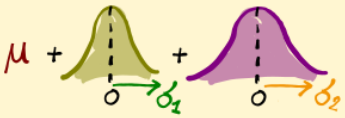
Non centred parameterisation

$$y = \mu + \sigma * N(0,1) = \mu + \sigma *$$



A grand mean and multiple distributions

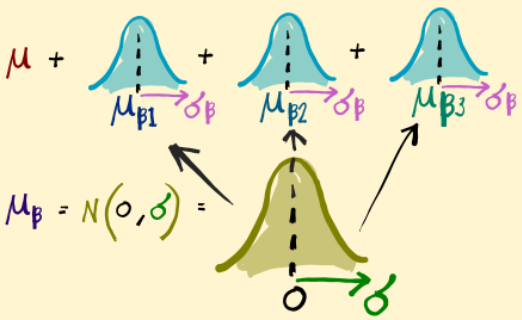
$$y = \mu + N(0, \sigma_1) + N(0, \sigma_2) =$$



Multiple levels of hierarchy

Version 1 – one normal distribution per hierarchical level

$$y = \mu + N(\mu_{\beta 1}, \sigma_\beta) + N(\mu_{\beta 2}, \sigma_\beta) + N(\mu_{\beta 3}, \sigma_\beta) =$$



Version 2 – one normal distribution for the first herarchical level, but multiple distributions for the second level

$$y = \mu + N(\mu_{\beta 1}, \sigma_{\beta 1}) + N(\mu_{\beta 2}, \sigma_{\beta 2}) + N(\mu_{\beta 3}, \sigma_{\beta 3}) =$$