Lecture 8:

Parameter recovery

How well do our model fitting routines work?

Find out using parameter recovery simulations

↳ based on Farrell & Ludwig (2008), PBR, 15, 1209-17

Step 1 - assume a hierarchical data-generating process.

For RTs, we assume an individual's RT distribution is drawn from ex-Gaussian density with parameters μ_i, σ_i, τ_i.

In turn, these parameters are drawn from ~~independent~~ parent ~~normal~~ distributions: ~~with common variance~~.

In symbols,

$$\mu_i \sim \text{Normal}(\gamma_1, \gamma_2)$$

$$\sigma_i^2 \sim \text{Inv Gamma}(\alpha_1, \alpha_2)$$

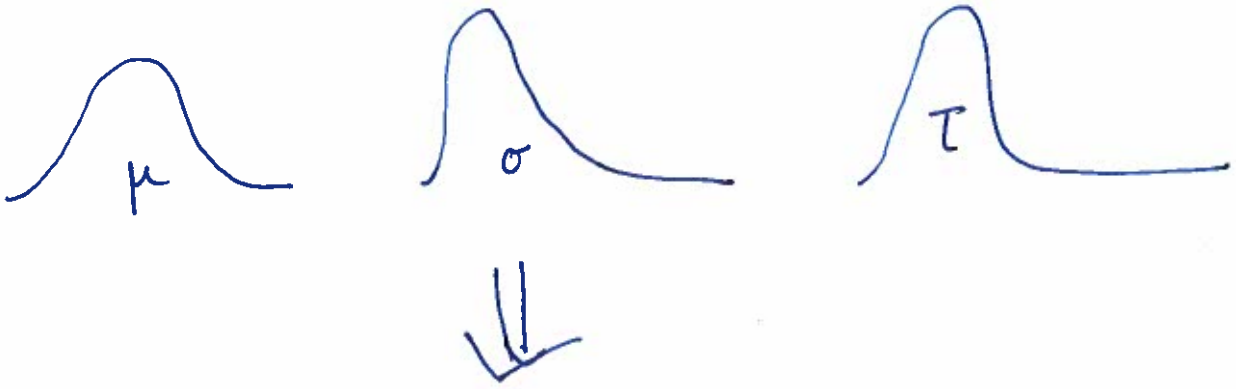
$$\tau_i \sim \text{Inv Gamma}(\beta_1, \beta_2)$$

followed by

$$RT_i \sim \text{ExGaussian}(\mu_i, \sigma_i, \tau_i)$$

Picture

Population:



Individuals: