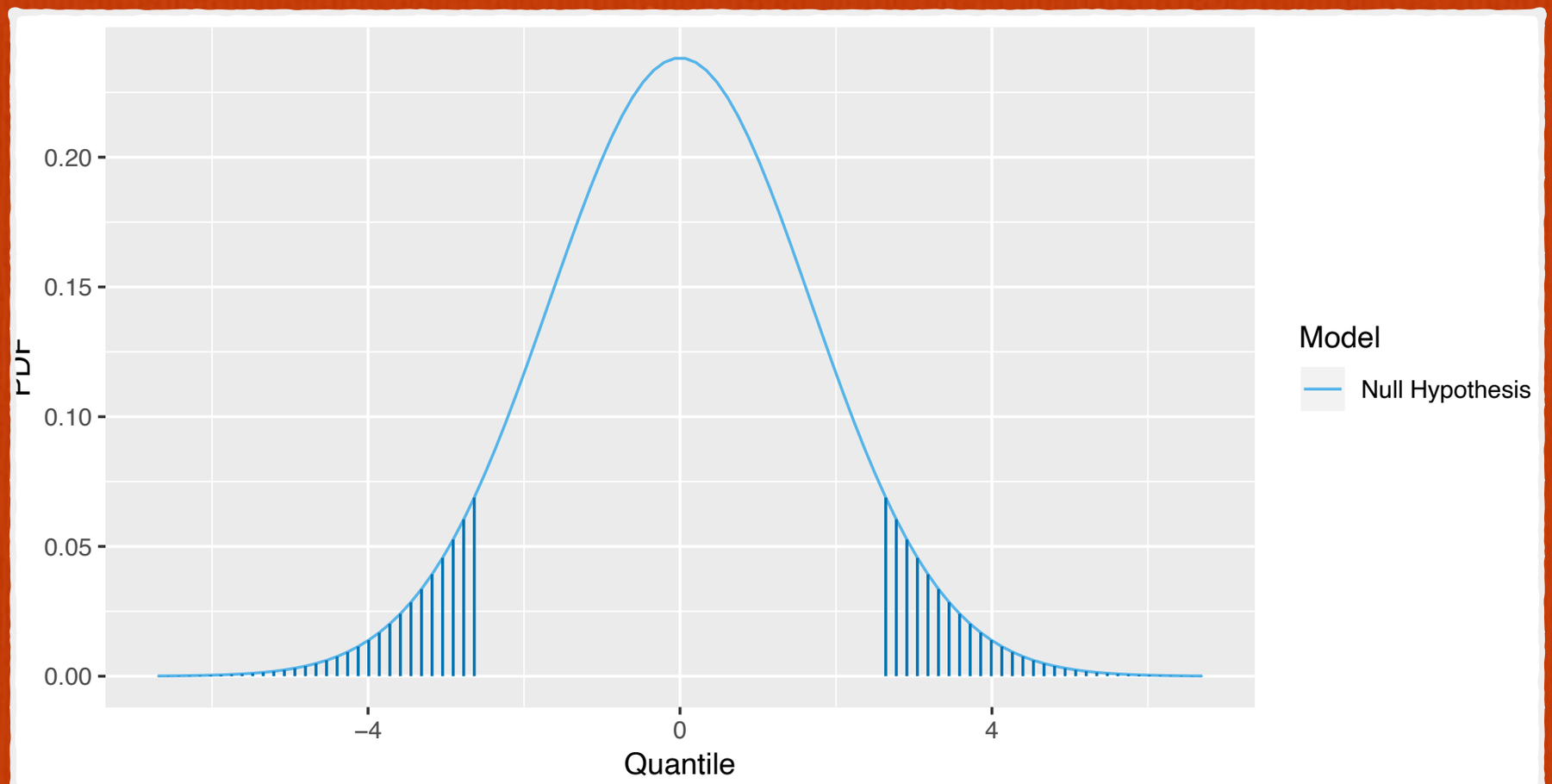
Likelihood Ratio

- We typically use log-likelihoods

$$\ell_1\left(\mu_1, \sigma^2 \,|\, y_1, \ldots, y_n\right) = \log\left\{\mathscr{L}_1\left(\mu_1, \sigma^2 \,|\, y_1, \ldots, y_n\right)\right\}$$

- and

$$\frac{\mathscr{L}_2\left(\mu_2, \sigma^2 \,|\, y_1, \ldots, y_n\right)}{\mathscr{L}_1\left(\mu_1, \sigma^2 \,|\, y_1, \ldots, y_n\right)} = \ell_2\left(\mu_2, \sigma^2 \,|\, y_1, \ldots, y_n\right) - \ell_1\left(\mu_1, \sigma^2 \,|\, y_1, \ldots, y_n\right)$$



Probability vs Likelihood

Using maximum likelihood estimates from our 'naive' analysis,

$$\widehat{\mu} = 2.52, \widehat{\sigma}^2 = 2.83$$