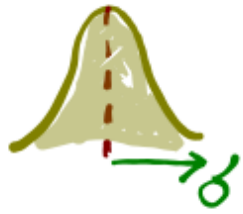
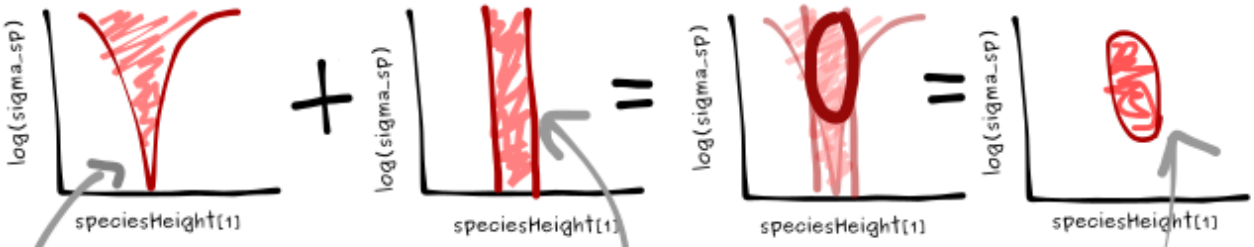
Centred parameterisation

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



Plenty of observations per species

Prior + Likelyhood = Posterior = Posterior



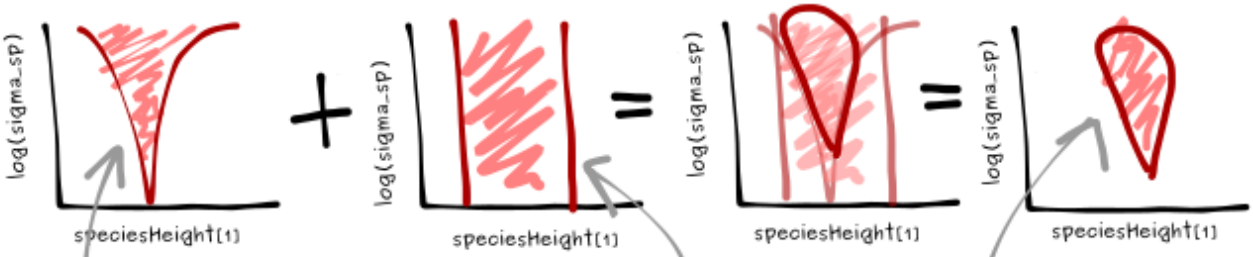
When the model is testing small values of sigma_sp then the speciesHeight values will cluster close the mean (mu; location parameter) value. When the model tests large values of sigma_sp then each speciesHeight value can be much more different from the mean.

An informative likelyhood means there are enoph observations in speciesHeight[1] that the model is pretty sure what the value of speciesHeight[1] should be. This means that it doesn't matter how wide a sigma_sp the model is trying - the speciesHeight[1] value doesn't change much.

The informative likelyhood cuts off the very wide top and very narrow bottom of the prior funnel, giving us a nice posteriod that can be explored easily by the model

Not enouph observations per species

Prior + Likelyhood = Posterior = Posterior



The prior distribution is still funnel shaped

Because we don't have much data for speciesHeight[1], the model is very unsure what the value is. This means there are many options according to the likelyhood.

This time the likelyhood is so wide that it doesnt cut off the problem areas of the prior distributon, meaning the model still has to explore a funnel shape for the posterior.