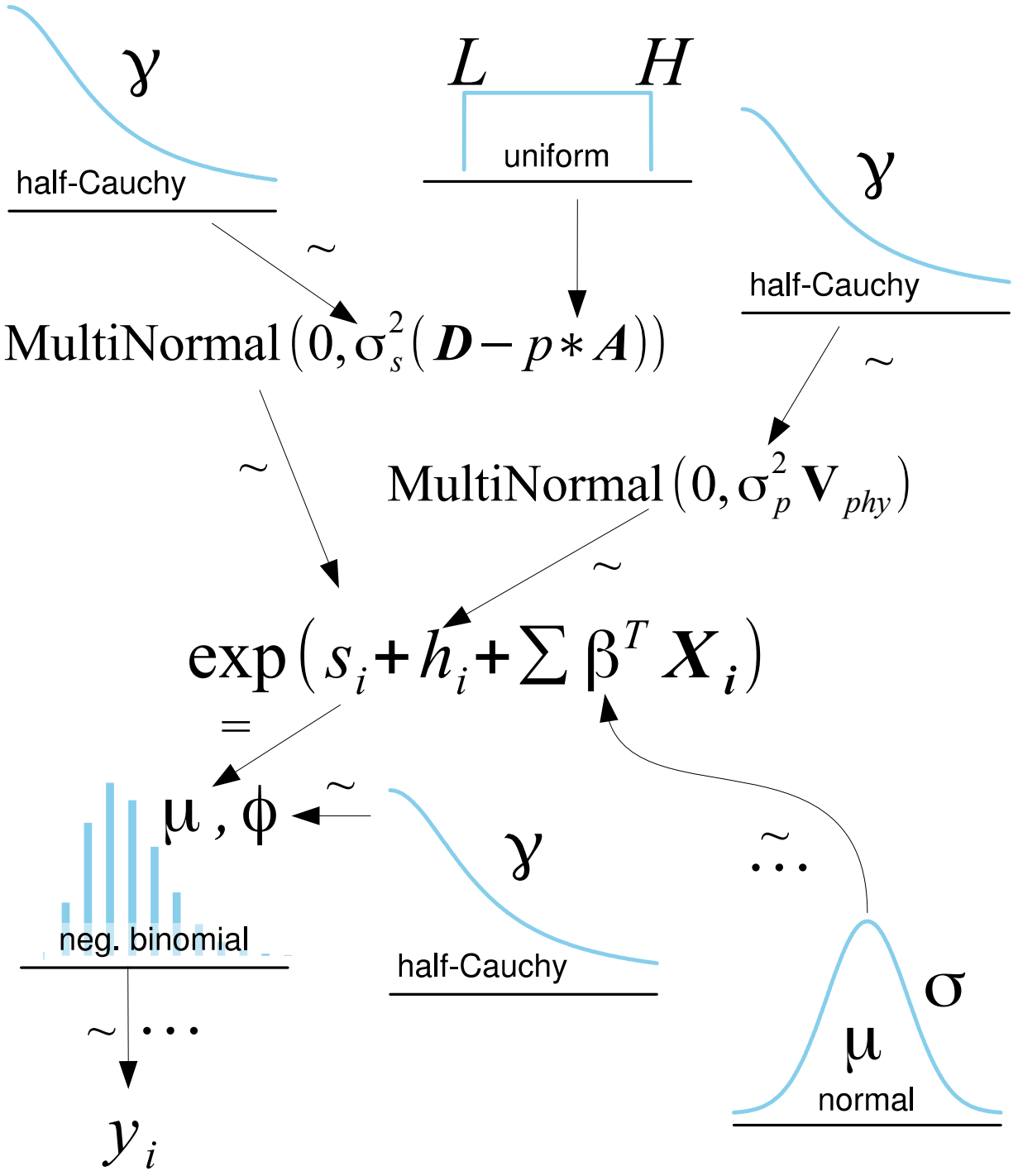

$$y_i \sim \text{NegBinom}(\mu, \phi)$$
$$\phi \sim \text{half-Cauchy}(2.5)$$
$$s_i \sim \text{MultiNormal}(0, \Sigma_s)$$
$$\Sigma_s = \sigma_s^2(\boldsymbol{D} - p * \boldsymbol{A})$$
$$\sigma_s \sim \text{half-Cauchy}(2.5)$$
$$p \sim \text{Uniform}(0, 1)$$
$$h_i \sim \text{MultiNormal}(0, \Sigma_p)$$
$$\Sigma_p = \sigma_p^2 \mathbf{V}_{phy}$$
$$\sigma_p^2 \sim \text{half-Cauchy}(2.5)$$
$$\beta \sim \text{Normal}(0, 10)$$