

Diagram illustrating the relationship between the posterior distribution and its components, with arcs indicating the data types associated with each parameter:

- coordinates (tips and internal nodes)
- timetree
- dispersal
- effective pop. size
- sequences
- sampling locations

$$\underbrace{p(\mathbf{l}, \tau, \sigma, \theta | \mathbf{s}, \mathbf{e})}_{\text{posterior}} \propto \underbrace{\Pr(\mathbf{s} | \tau)}_{\text{"likelihood"}} \cdot \underbrace{s(\mathbf{e} | \mathbf{l}, \tau, \sigma, \theta)}_{\text{sampling}} \cdot \underbrace{f(\mathbf{l} | \tau, \sigma)}_{\mathcal{N}} \cdot \underbrace{h(\tau | \theta)}_{\text{coalescent}} \cdot \underbrace{\pi(\sigma, \theta)}_{\text{prior}}$$