

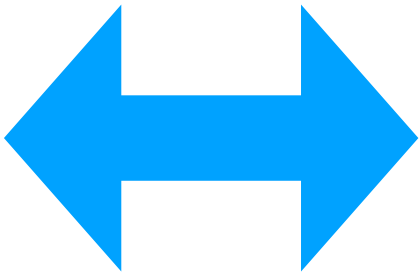
Generative models

- If we disallow improper priors, then Bayesian modeling is generative

$$\theta^* \sim p(\theta)$$



$$y^{\star} \sim p(y|\theta^{\star})$$



$$y^{\star} \sim p(y)$$

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$$\begin{array}{ccc} \theta^* \sim p(\theta) & & \\ \downarrow & \longleftrightarrow & y^* \sim p(y) \\ y^* \sim p(y|\theta^*) & & \end{array}$$

Prior predictive checking:

fake data is almost as useful as real data

What do vague/non-informative priors imply about the data our model can generate?