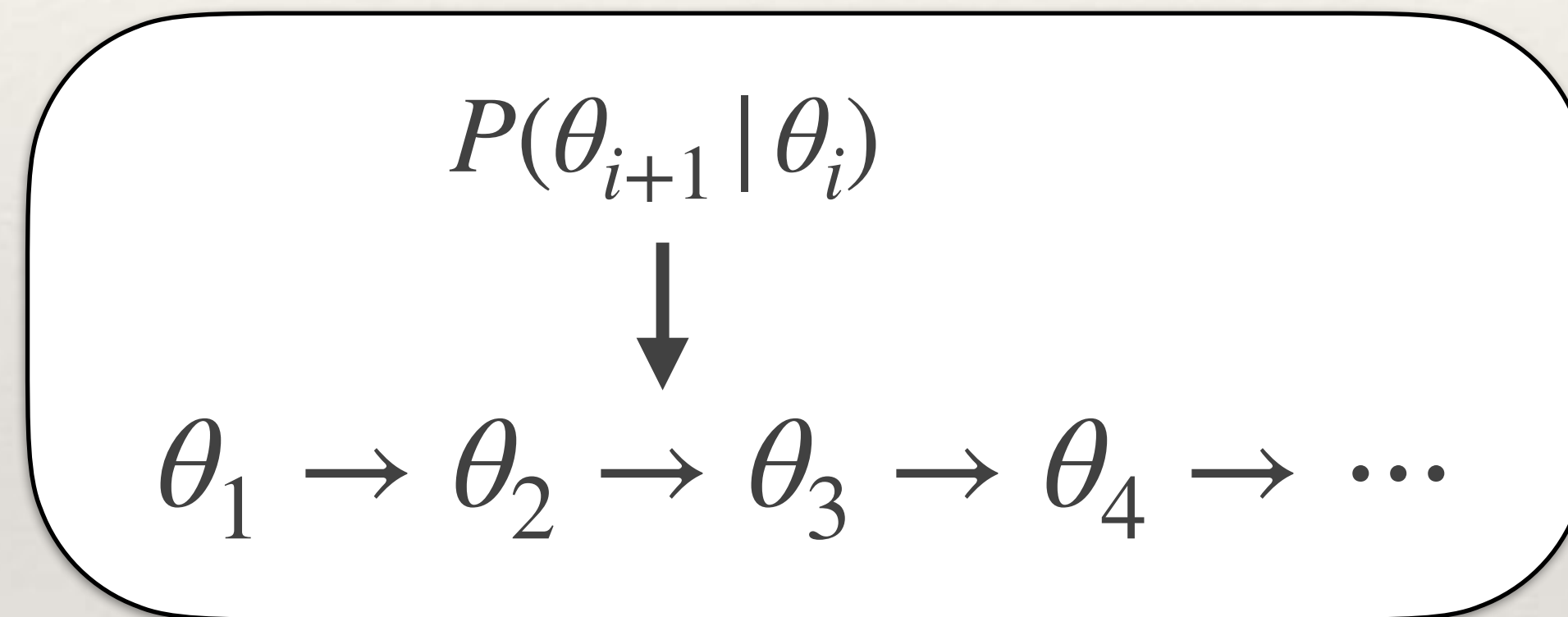


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# WHAT MAKES THESE SAMPLERS DIFFERENT?

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Basically the transition proposal distribution



We can visualize what is going on with different samplers:

<https://chi-feng.github.io/mcmc-demo/app.html>

# OUR MODEL FROM LAST CLASS

$$\begin{aligned}y_i &\sim \text{Normal}(\mu_i, \sigma) \\ \mu_i &= \alpha + \beta x_i \\ \alpha &\sim \text{Normal}(0, 20) \\ \beta &\sim \text{lognormal}(0, 1) \\ \sigma &\sim \text{Exponential}(1)\end{aligned}$$

```
# Data
library(rethinking)
d2 <- Howell1[ Howell1$age >= 18 , ]

# Model
ulam(alist(
  y ~ normal(mu, sigma),
  mu <- a + b * x,
  a ~ normal(0, 20),
  b ~ lognormal(0, 1),
  sigma ~ exponential(1)),
  data = list(y = d2$height,
              x = d2$weight),
  iter = 1000, chains = 4, cores = 4)
```