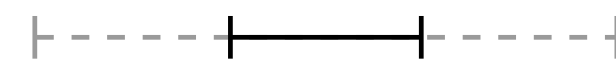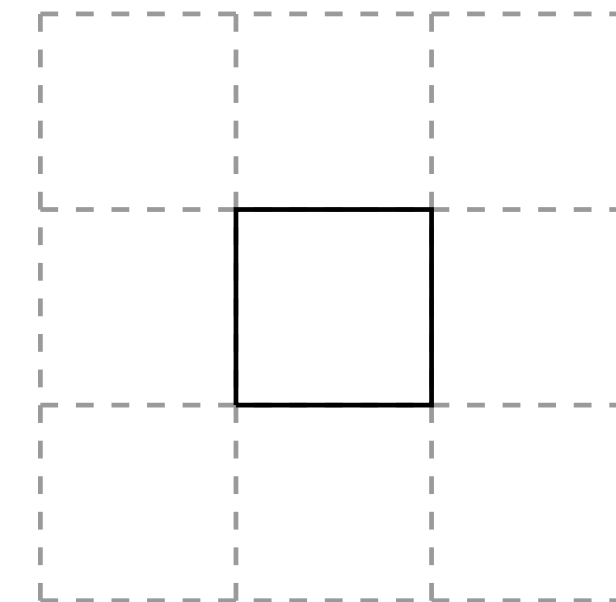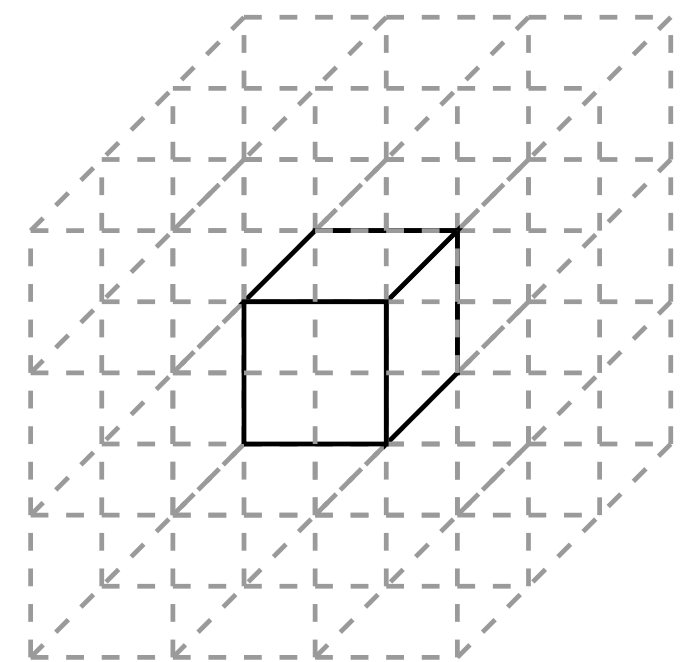# How to get posterior samples?

- There is no general method to find high probability regions in arbitrary probability distributions.

- This mean most models are fit using purely computational methods.

- For simple parameters spaces, we can do grid search or some brute force method to find high probability regions

- This breaks down quickly as the number of parameters increases

(a)   (b)   (c)

Betancourt, M. A Conceptual Introduction to Hamiltonian Monte Carlo. *arXiv [stat.ME]* (2017)

Typical set

$|q - q_{Mode}|$

Betancourt, M. A Conceptual Introduction to Hamiltonian Monte Carlo. *arXiv [stat.ME]* (2017)