

Bayesian Methods

J Banfelder & A Clerkin

9/30/2020

Flipping a Coin with my Honest Sister

$$P(M_{0.50}|D_{13}) = \frac{P(\text{ObservedHeads}|\text{bias} = x)P(\text{bias} = x)}{P(\text{ObservedHeads})}$$

Number of bins:

101
▼

Total Flips:

0

200

0 20 40 60 80 100 120 140 160 180 200

Heads:

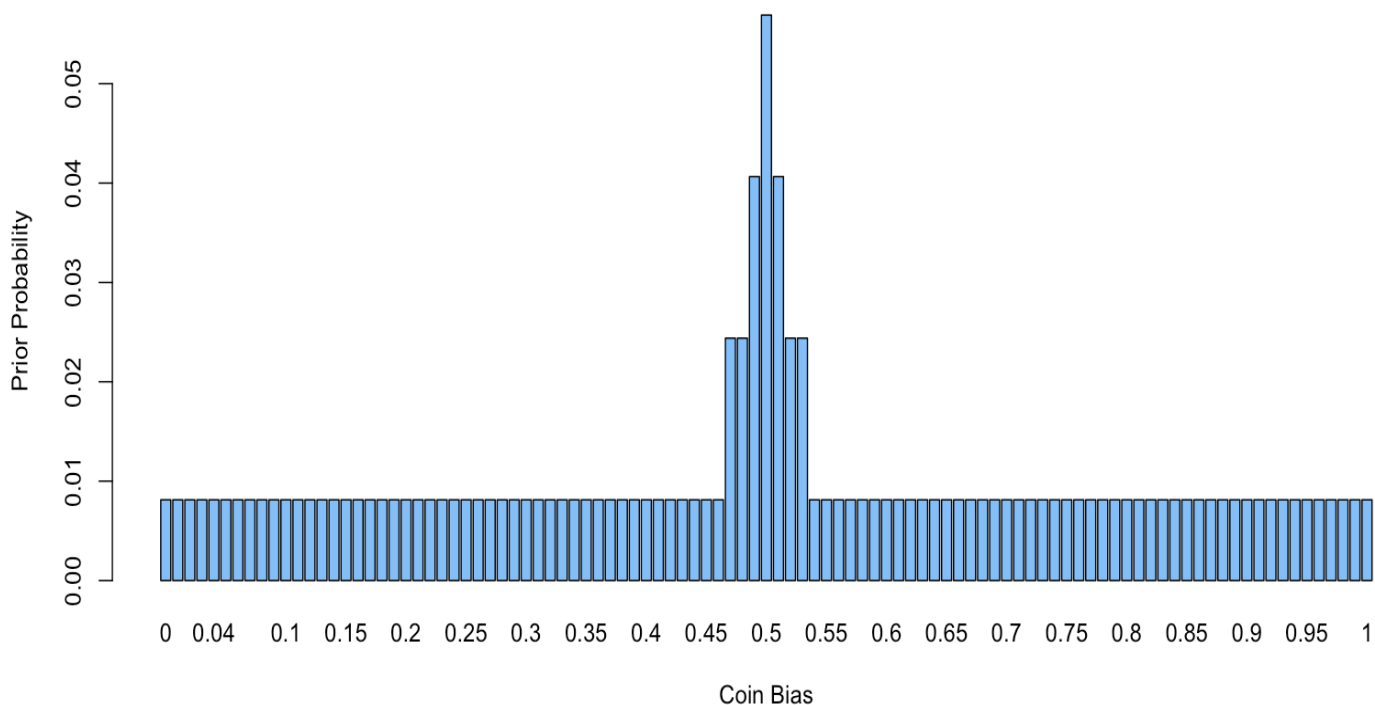
0

130

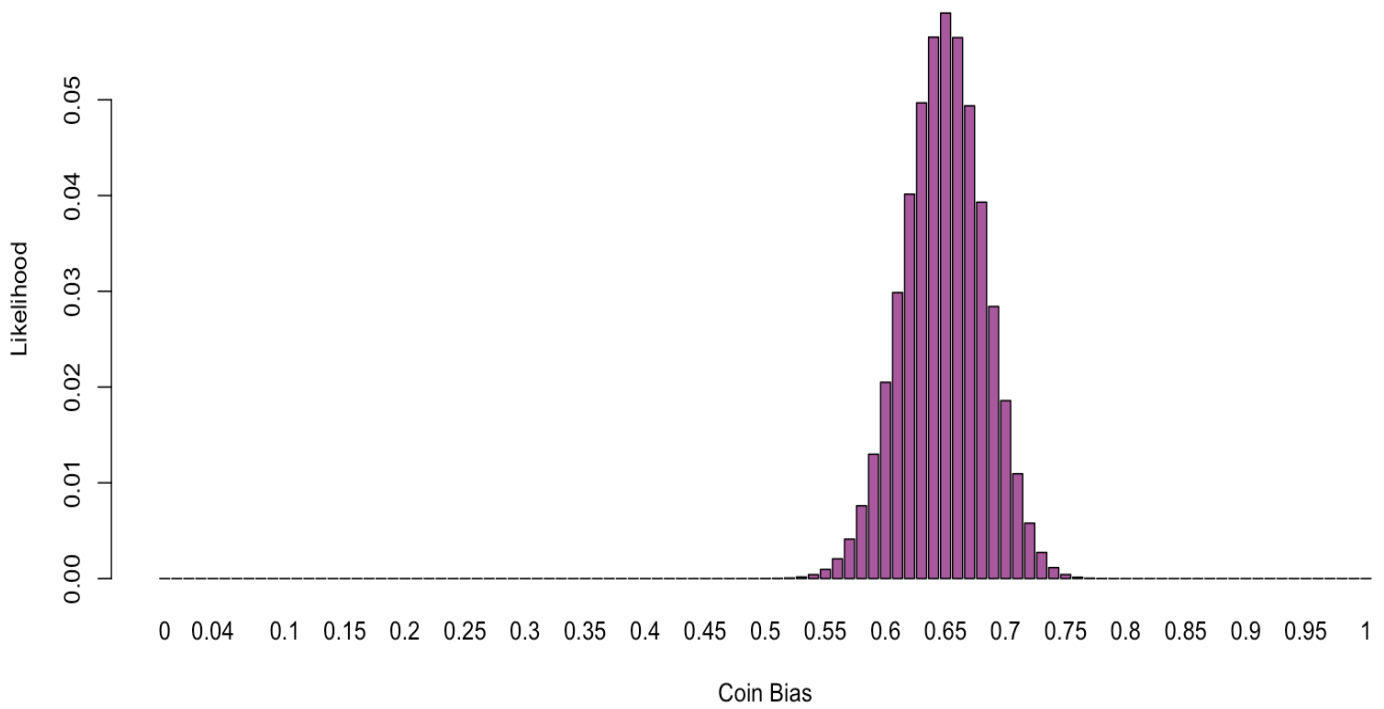
200

0 20 40 60 80 100 120 140 160 180 200

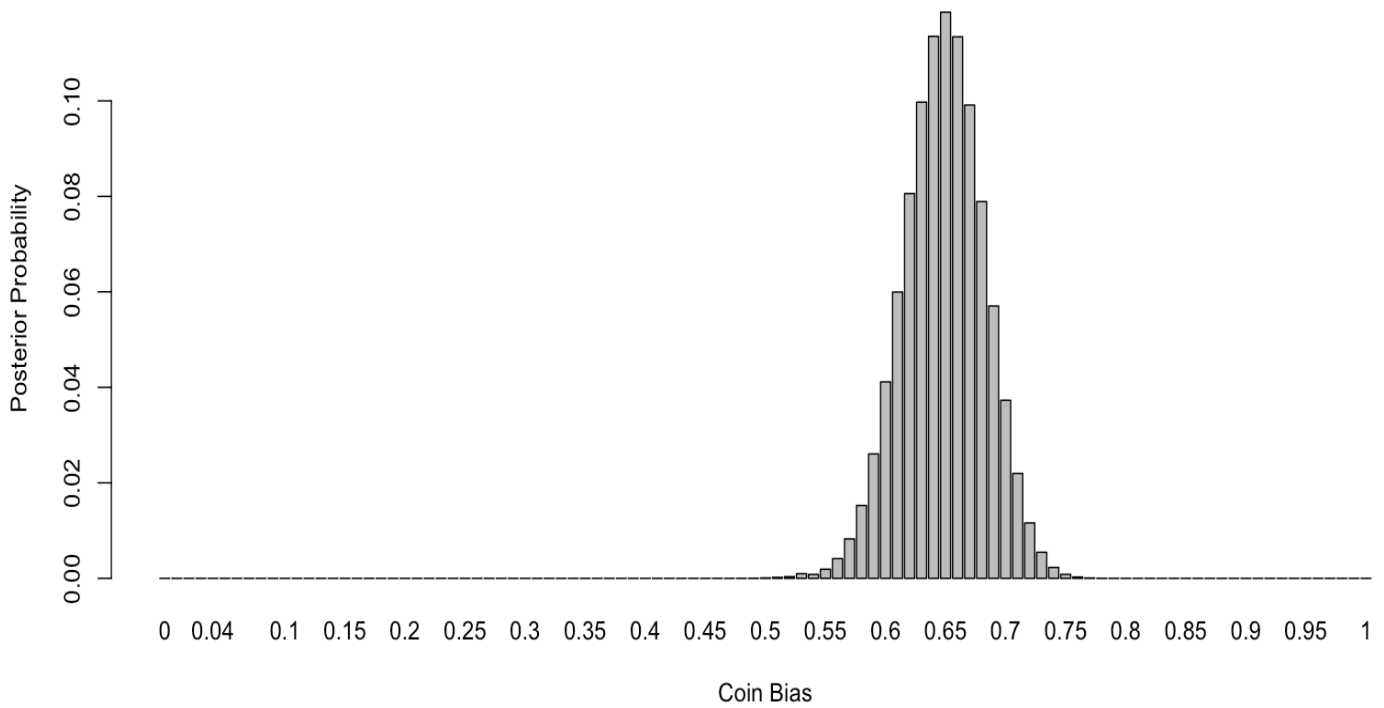
Prior Probability Density: Most Coins are Roughly Fair



Likelihood vs Coin Bias



Posterior Probability Density



Marginal Likelihood (Probability of Selected Heads) = 0.00404946144470368