

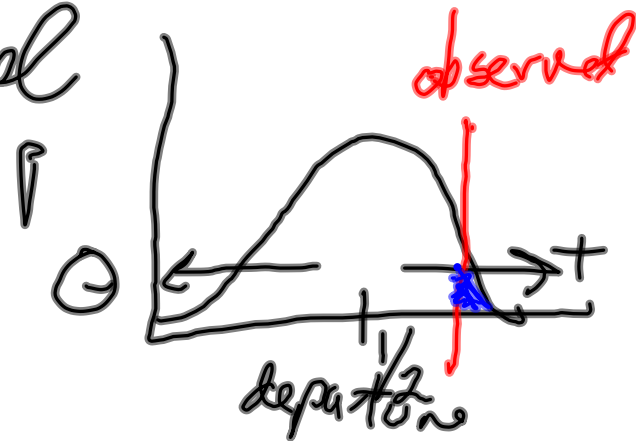
Bayesian Analysis

Non-Bayes: hypothesis testing

null model \equiv "hypothesis"

Q: what is probability of data
(actual) if it arose under
the null model

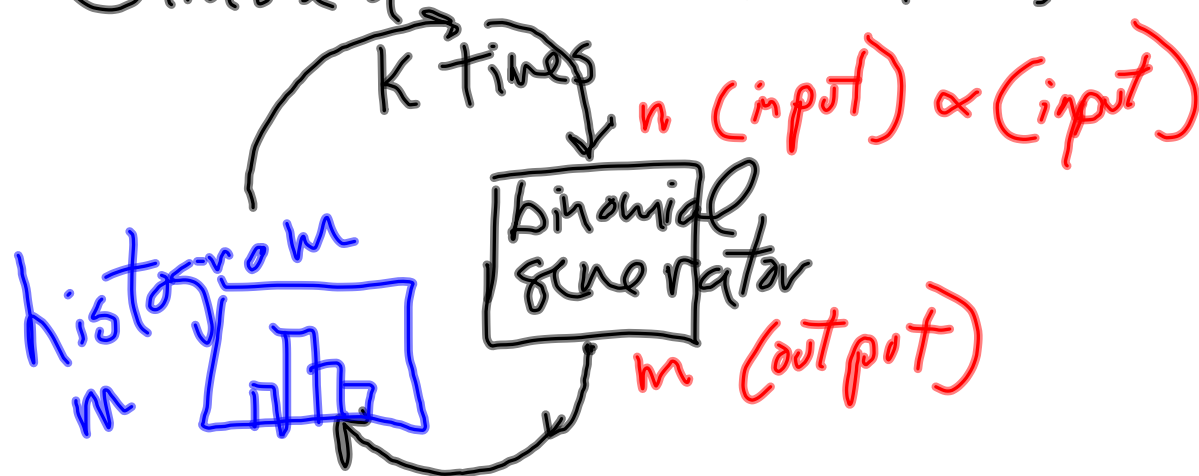
ratio $\frac{\text{heads}}{\sum \text{Total}}$



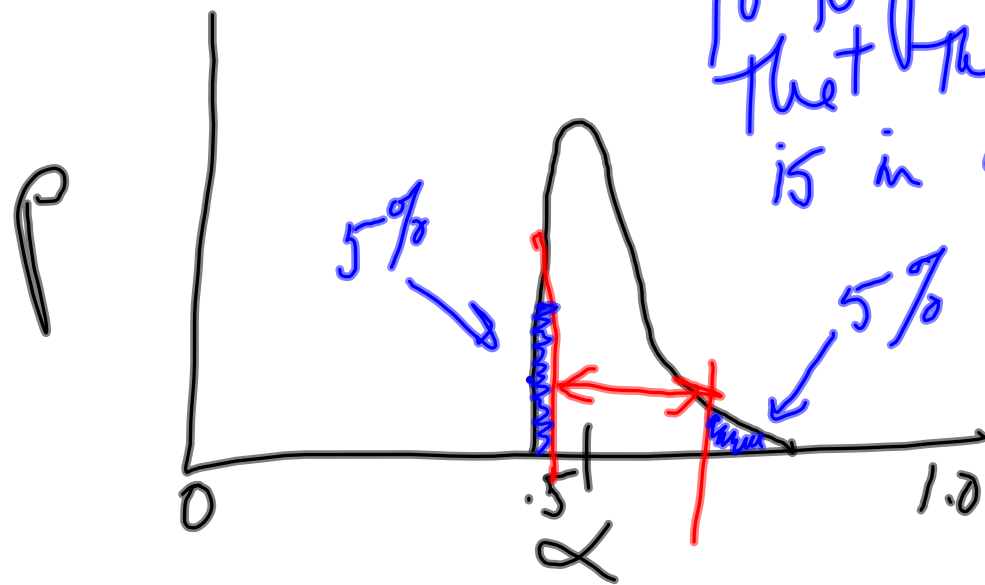
Binomial distribution

$$P(m | n, \alpha) = \alpha^m (1-\alpha)^{n-m} \frac{n!}{m! (n-m)!}$$

Simulation alternative:



Bayesian inference:
Estimate parameter



90% probability
that the "true α "
is in interval

Probability that next spin is heads when our knowledge about this coin is a probability distribution for θ .