0 Point Estimation: An Overview

1. We have a sample from a known family of distribution, but we do not know the parameters θ.

   - Example: tossing an unfair coin, where P(H) is unknown.

2. We want to use the sample to infer or make a hypothesis about the unknown parameters.

3. What do we do? Choose a function of the sample: estimator/statistic. Note that this estimator is a RV too.

4. However, we could choose infinite functions of the sample...

5. Evaluating (choosing) estimators:

   - Unbiasedness
   - Efficiency
   - MSE
   - Consistency
   - Asymptotically efficient

6. How can we come up with possible estimators?

   - MM (matching moments)
   - MLE (maximizing the likelihood/probability of observing what was observed)