

THE LAW OF LARGE NUMBERS (LLN)

The LLN guarantees that theoretical probabilities will “crystallize” in the long run. That is, observed **relative frequencies** from repeated trials will approach the corresponding **theoretical probabilities** as the number of trials approaches infinity.

In each column below, we simulate the flipping of a fair coin. The **relative frequencies of heads** are plotted against the **numbers of flips** over 10 flips, then over 100 flips, then over 1000 flips.

In each column, we see that the relative frequencies of heads may be somewhat erratic over the **first few flips**, but they then settle down and approach 0.5 **after many flips**.

