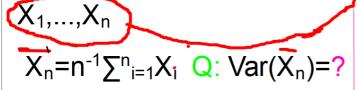
## **QUESTION: MORE OR LESS RANDOMNESS IN STAT?**

## **BOOTSTRAP METHOD WITH AN EXAMPLE**

POPULATION MEAN μ VARIANCE σ<sup>2</sup> UNKNOWN

BOX 1

DRAW RANDOM SAMPLE



Var DUE TO RANDOMNESS
IN BOX 1

BOX 2:BOOTSTRAP WORLD

DRAW B SAMPLES SIZE n
CALCULATE SAMPLE MEANS

 $\overline{X}^*_1, ..., \overline{X}^*_B \text{ WITH MEAN } \overline{\overline{X}}^*$   $B^{-1} \sum_{i=1}^B (\overline{X}^*_i - \overline{\overline{X}}^*)^2 \sim \text{Var}(\overline{X}_n)$ RANDOMNESS BOX 1
BOX 1+BOX 2