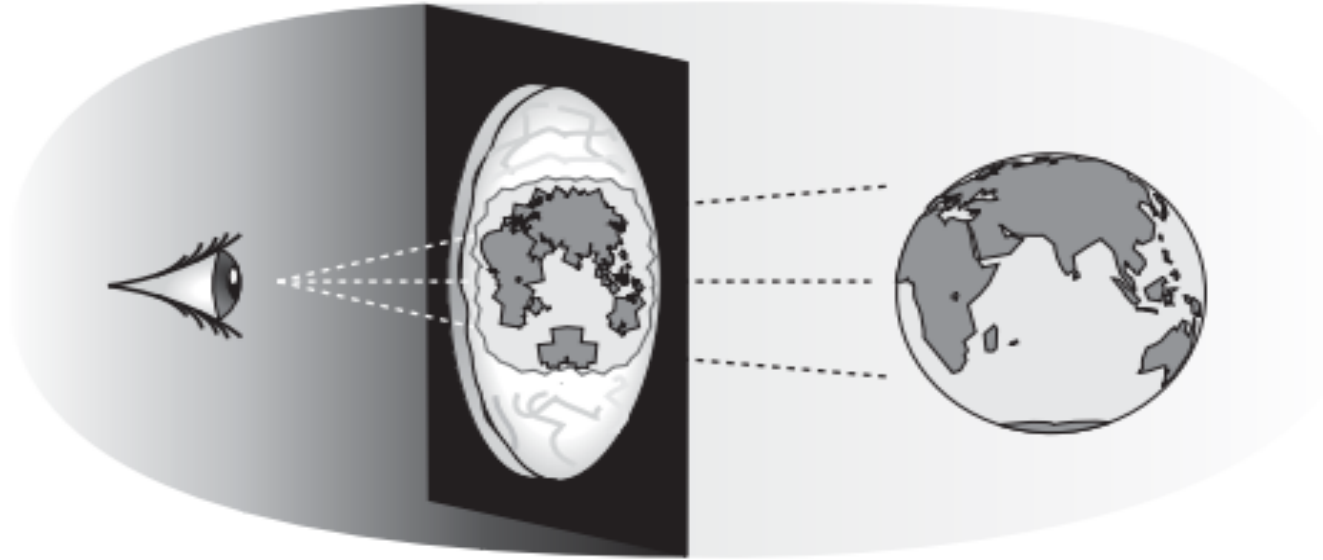


BIG IDEAS FOR STATS 108

Academic Skills Conference Semester 1 2018



PURPOSE



Decisions in business, science and in our community rely on a what is happening in our world.

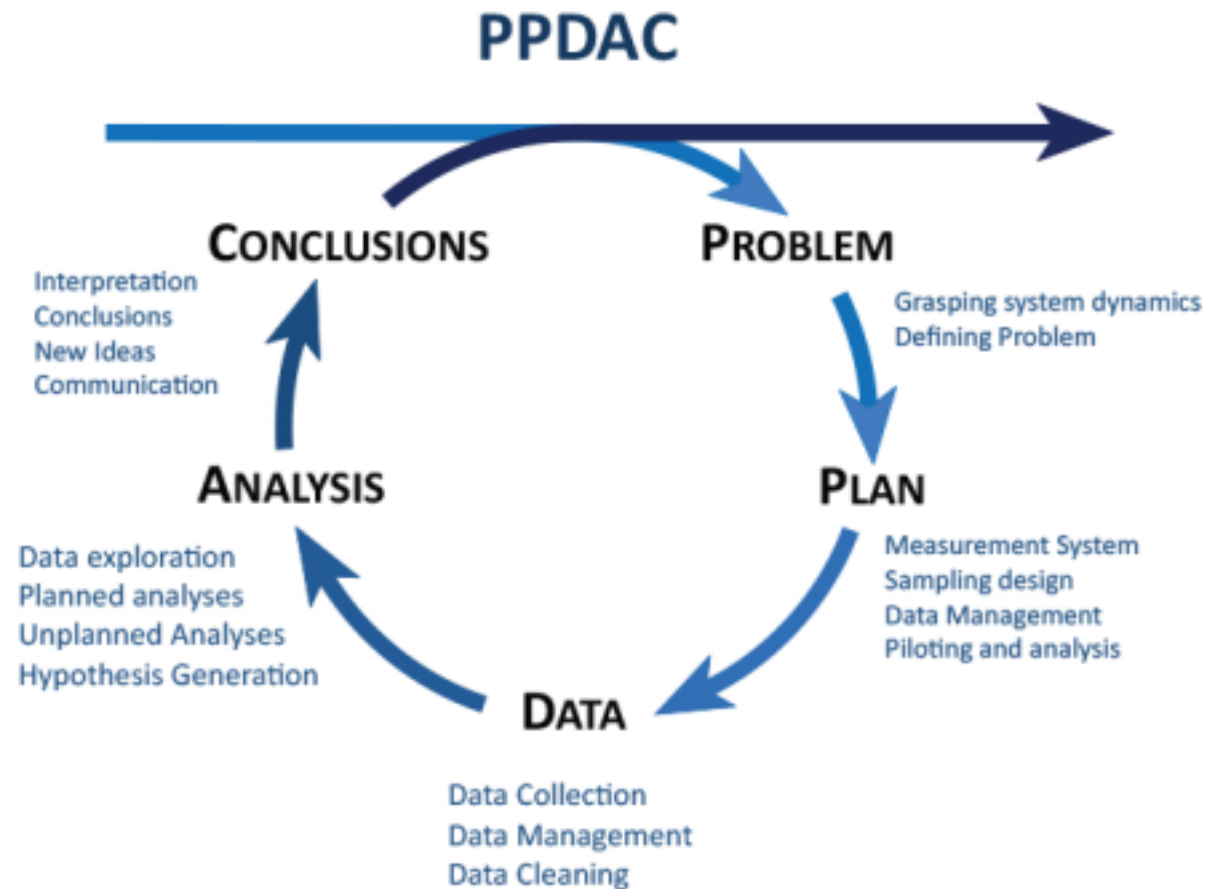
We use statistics to get a view of this world.

Statistics is the lens that we see the world through.
Beware of the distortions that this lens may produce.

“What we see is not quite the way it is.”

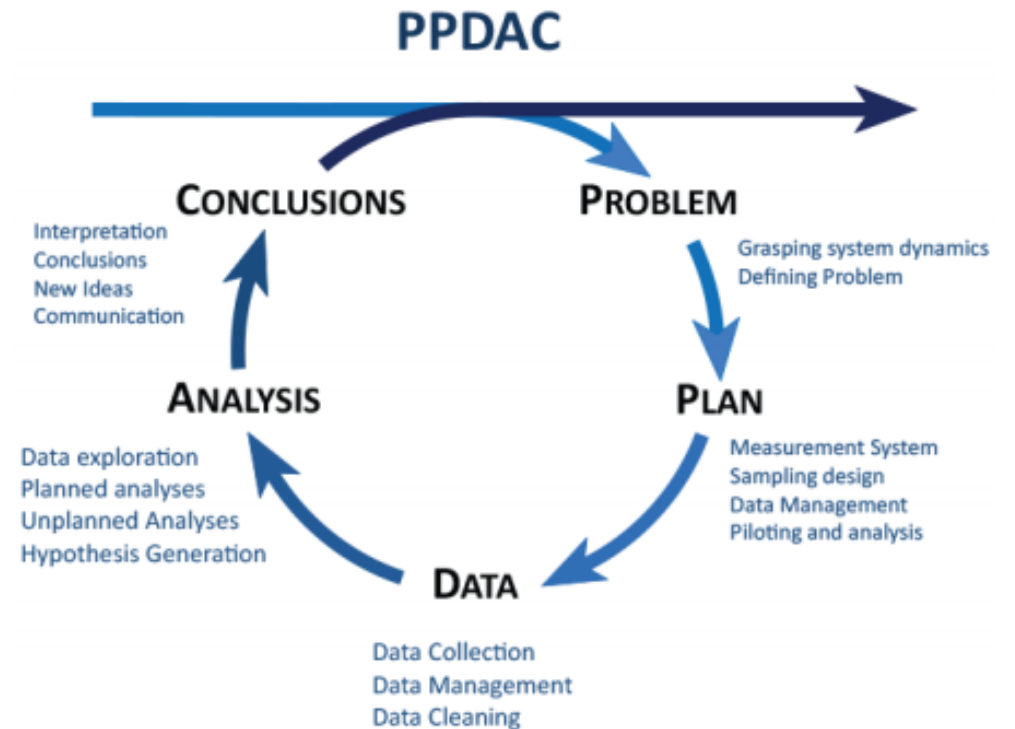


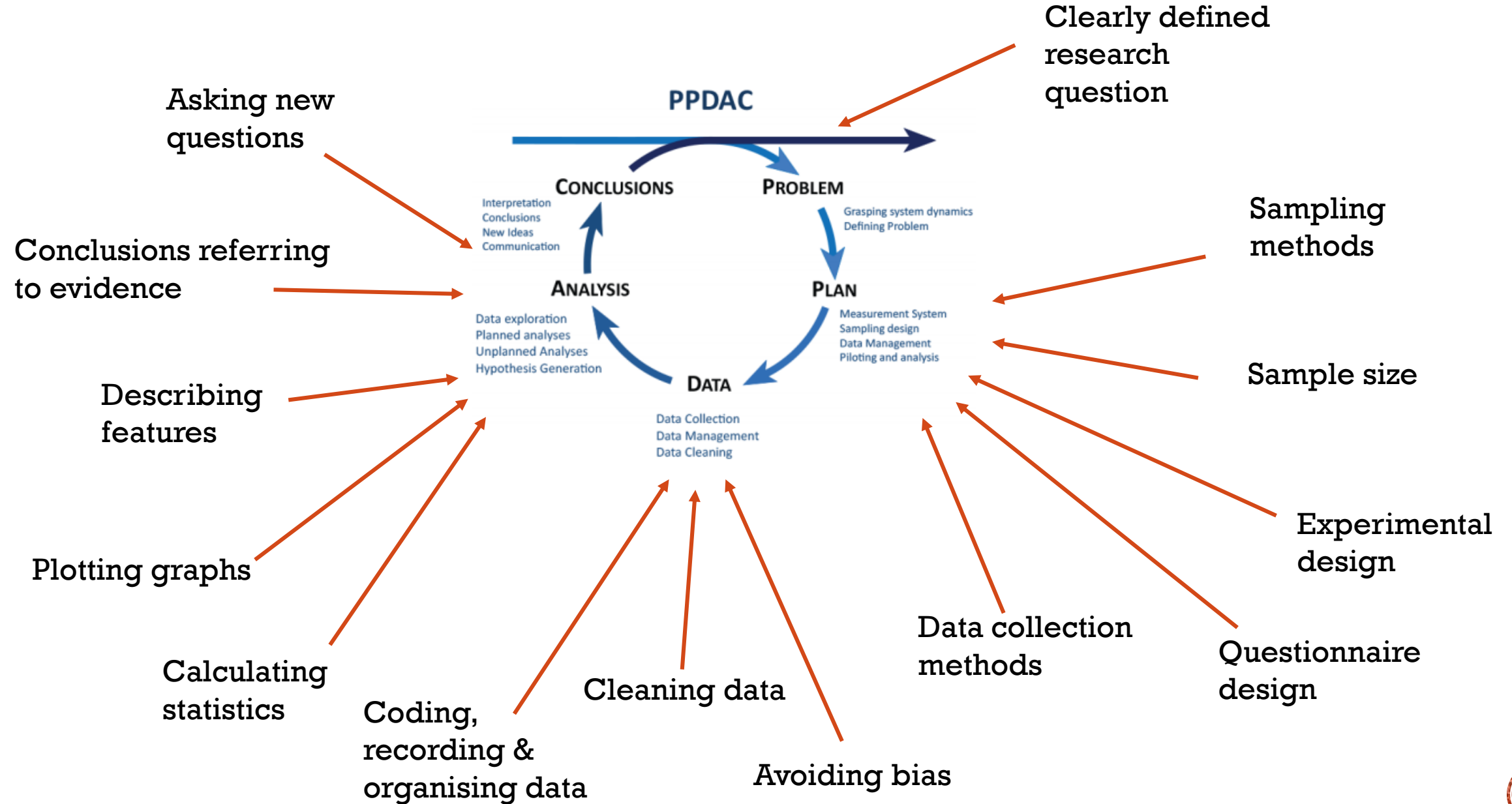
STATISTICAL INVESTIGATIONS



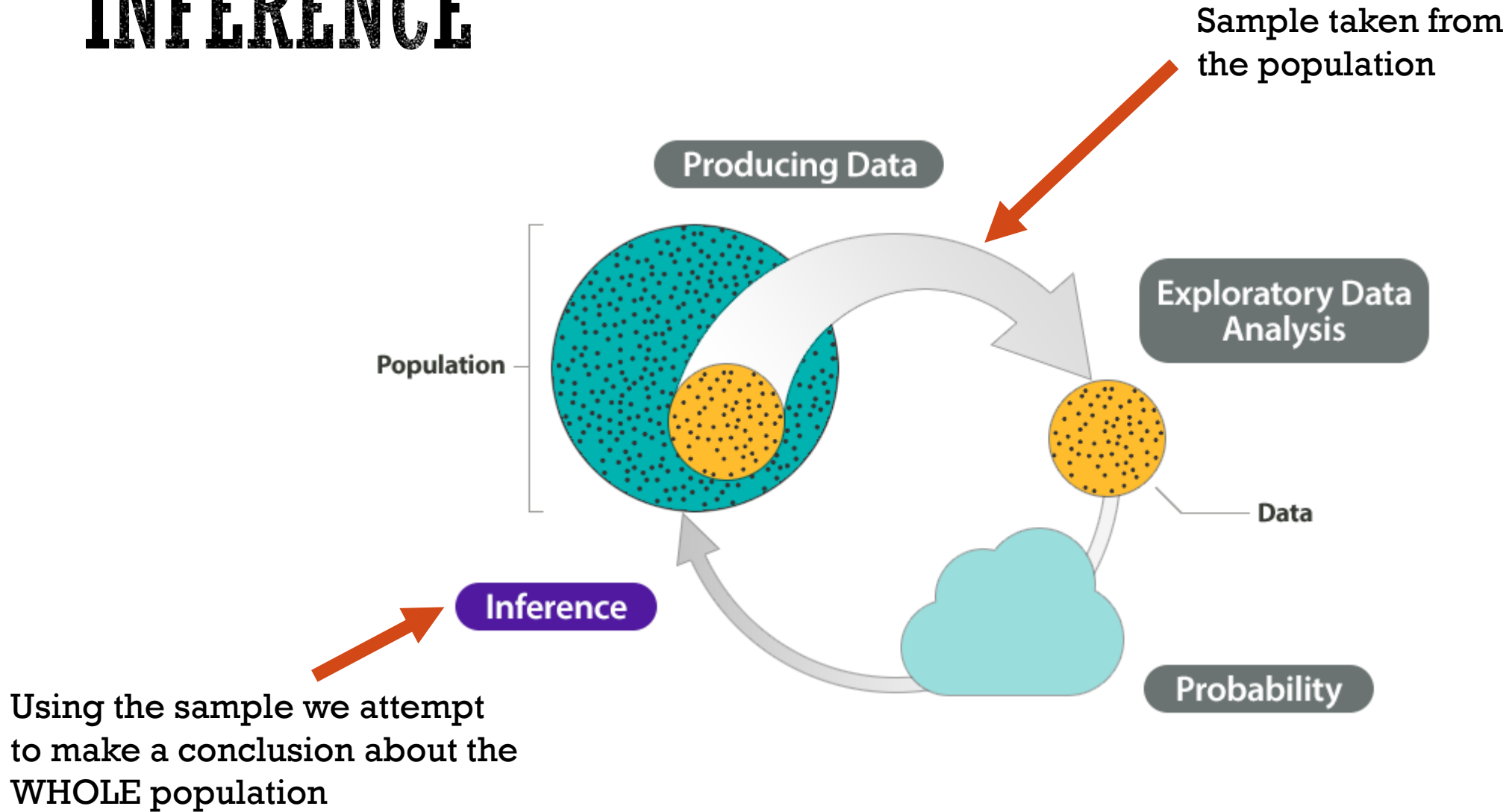
CAUSE OF DISTORTIONS?

- Every element of statistical enquiry cycle needs to be evaluated for possible sources of distortion



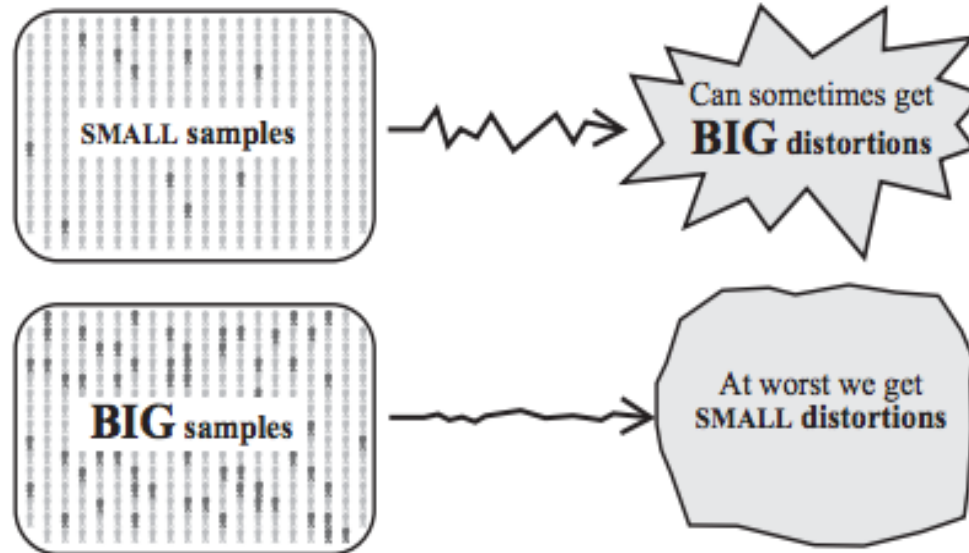
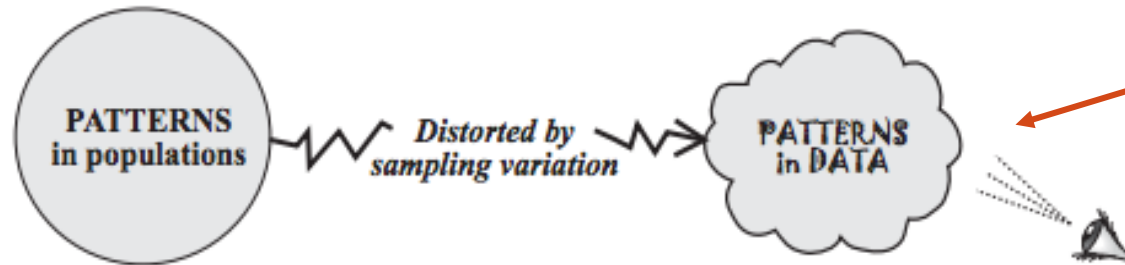


INFERENCE



SAMPLING VARIATION

We only see the patterns in the sample

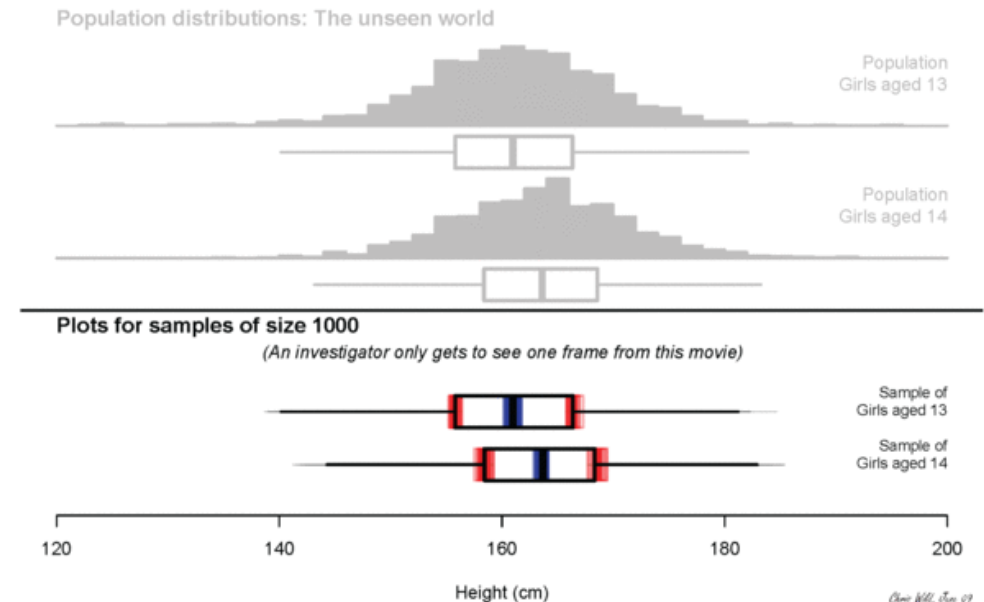
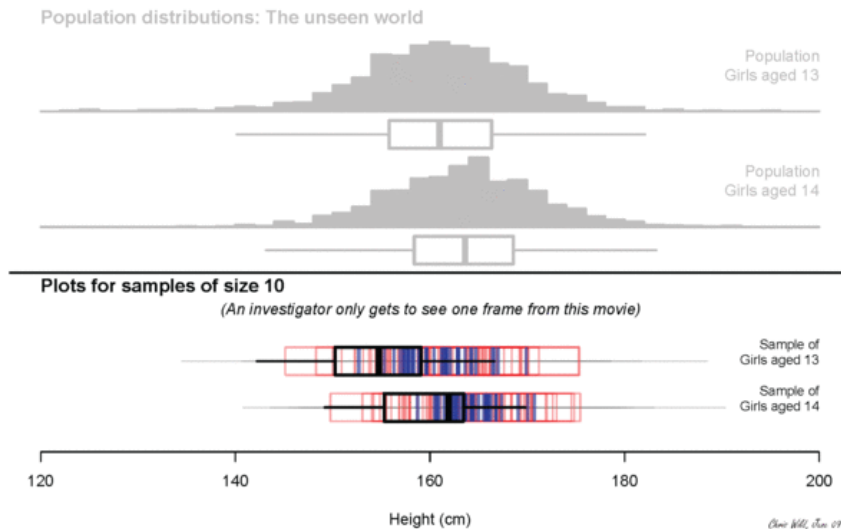


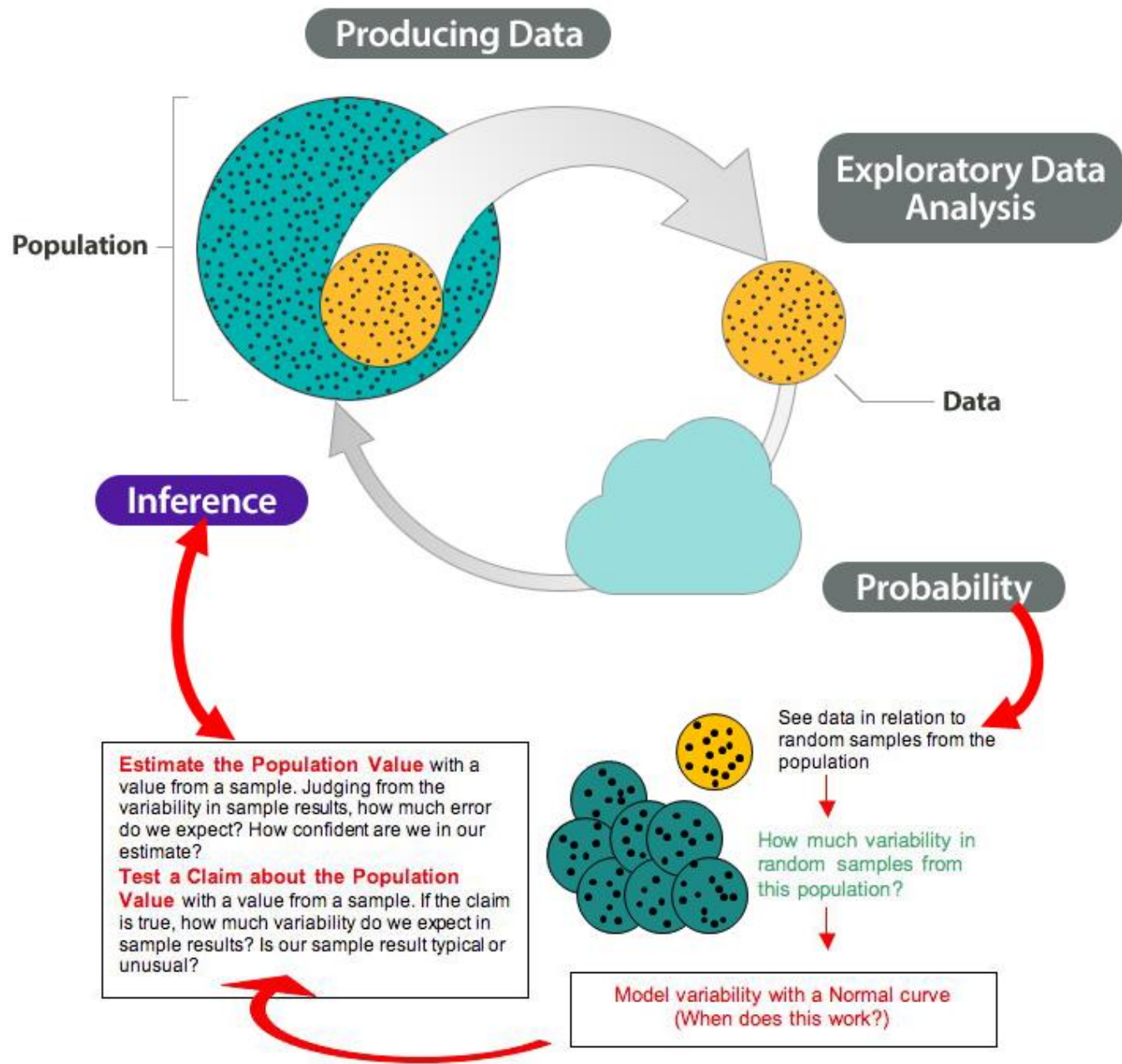
SIZE does
MATTER!



SAMPLING VARIATION

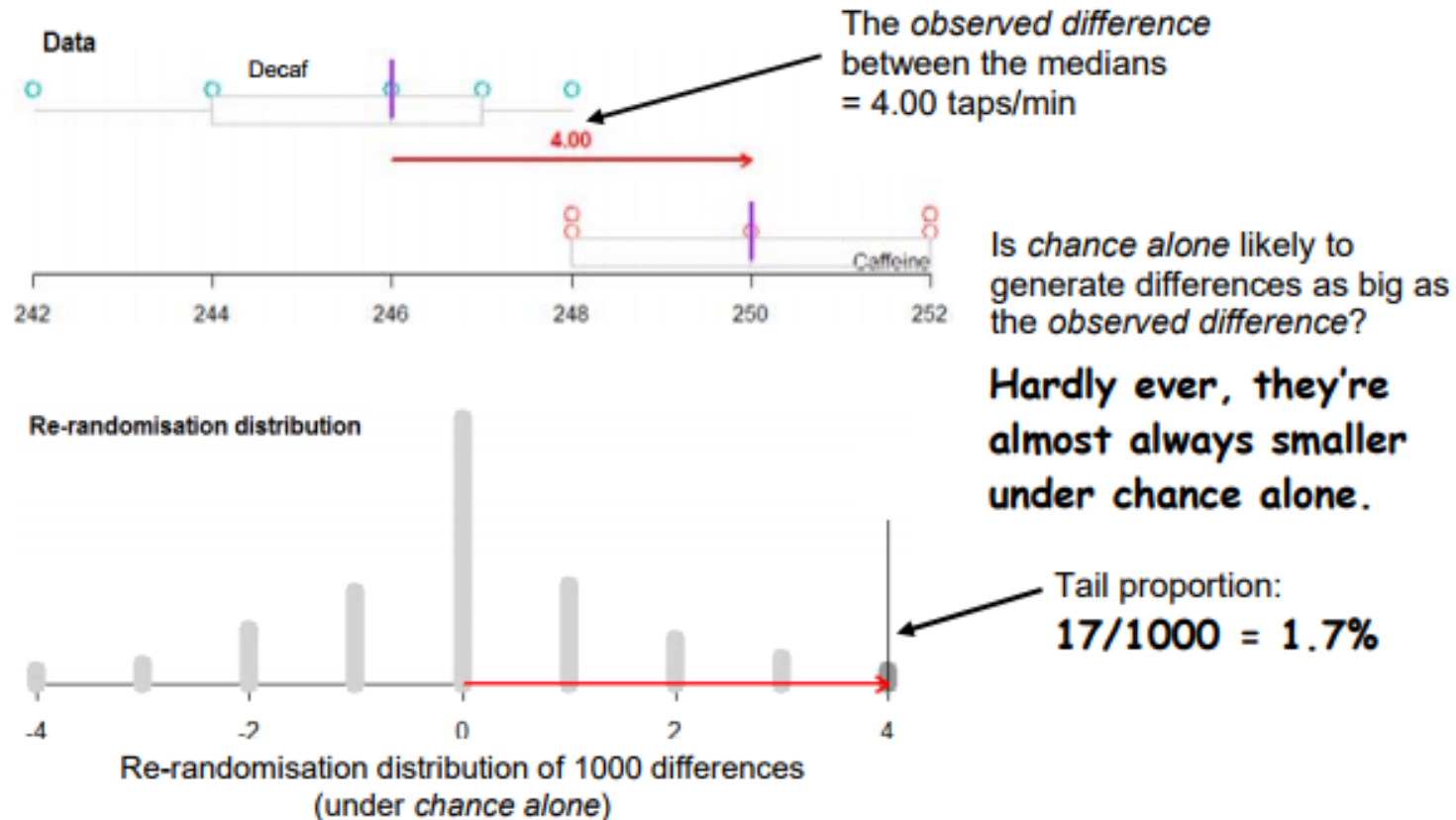
- If we repeatedly take a sample from a population we get a variation of results
- A small sample will give a wider range of variation





DUE TO CHANCE ALONE

- Any apparent difference between 2 groups may be due to chance alone



TYPES OF INFERENCES

Inference	Randomisation (data production)	Procees to evaluate “due to chance alone”	
Experiment- to causation Inference	Random assignment to treatment groups	3Rs Re-randomise Repeat Review	Chapter 3
Sample to population Inference	Random sampling of units from a population or populations	Calculate a confidence interval	Chapter 5



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Need further HELP?

