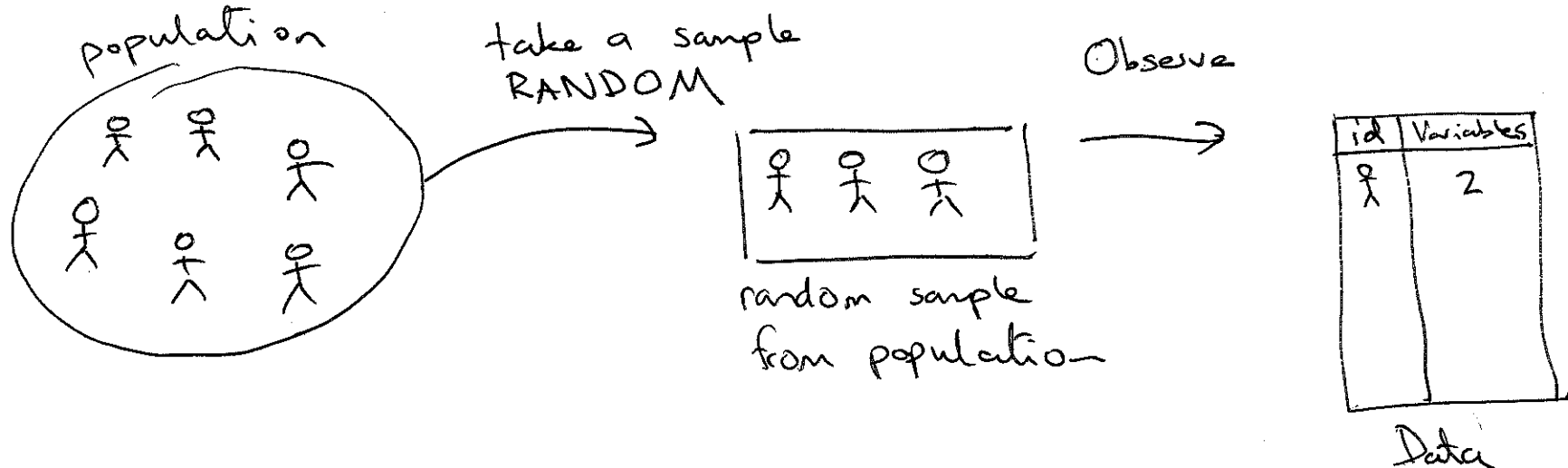


# Headlines from last time

- “59 Percent Of You Will Share This Article Without Even Reading It”  
*population ? people who saw headline*
- “A Glass Of Red Wine Is The Equivalent To An Hour At The Gym, Says New Study”  
*causal. treatment is glass of red wine results in some benefit equivalent to “hour at gym”  
population = humans*
- “Gut Bacteria May Play a Role in Weight Loss”  
*causal population = humans*
- “Get up at least once every 30 minutes. Failure to do so may shorten your life, study finds”  
*causal population*
- “Bats crash into windows because of a glitch with their ‘sonar’”  
*causal*
- “Lightning storms triggered by exhaust from cargo ships”  
*causal  
population ? not clear*

# Random sampling study

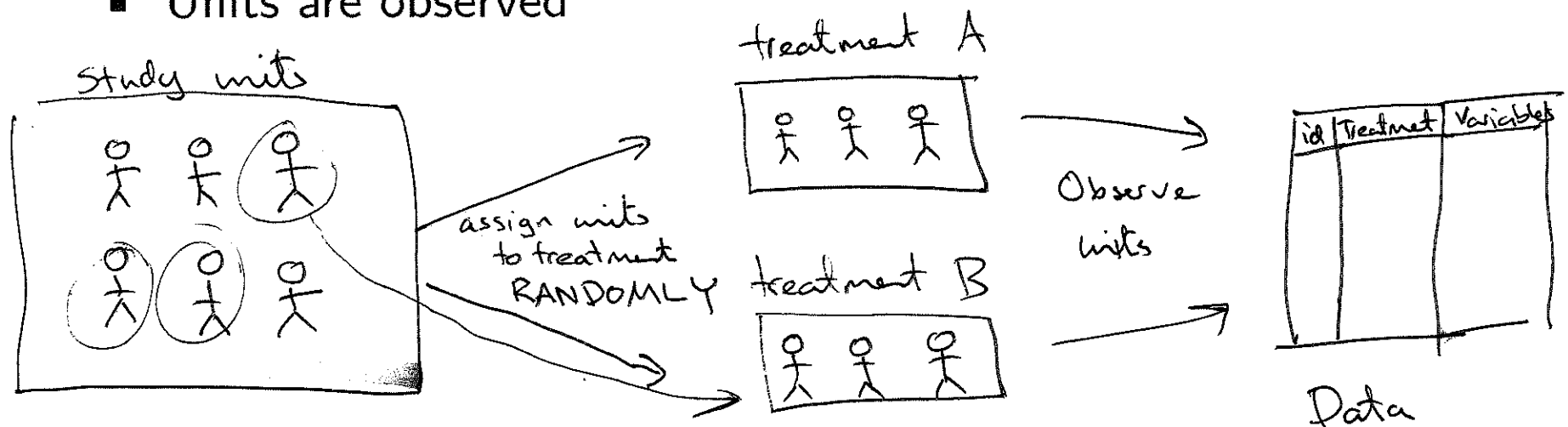
- A population(s) is defined
- Units are **randomly sampled** from the population(s)
- Units are observed



Statistical methods focus on quantifying the uncertainty in values population parameters.

# Randomized experiment study

- A group of units is selected
- Units are **randomly assigned** to different levels of a treatment variable
- Units are observed



Statistical methods focus ~~focus~~ on quantifying the uncertainty in the existence and size of treatment effects