Key Concepts

You will learn how to....

- Use statistical research methods.
- Compute and interpret values like: Mean, Median, Mode, Sample, Population, and Standard Deviation.
- Compute simple probabilities.
- Explore data through the use of bar graphs, histograms, box plots, and other common visualizations.
- Investigate distributions and understand a distributions properties.
- Manipulate distributions to make probabilistic predictions on data.

Inicialmente foi trabalhado uma atiidade para discutir sobre como se mede a memória, eu particularmente não acho que isso seja medido, mas foi falado em aula sobre os construtors

BBC criou um teste de memória utilizando memória de rostos no teste

Resultado do teste

Recognition score: 100% - Average score: 92%

This is a measure of your ability to remember the photos you've seen, regardless of the part in which you saw them. From all 24 photos shown in Parts 1 & 2, you recognised: 24 photo(s).

Temporal memory score: 83% - Average score: 68%

This is a measure of how often you recognised a photo and matched it to the correct part, instead of just remembering which ones you'd seen. From all the photos you recognised, you matched: 20 photo(s) to the correct part.

Variáveis camufladas

Amostras

Exemplo utilizado ref. a pesquisa do BBC

Formula: μ Referente a população Média das amostras: ~X
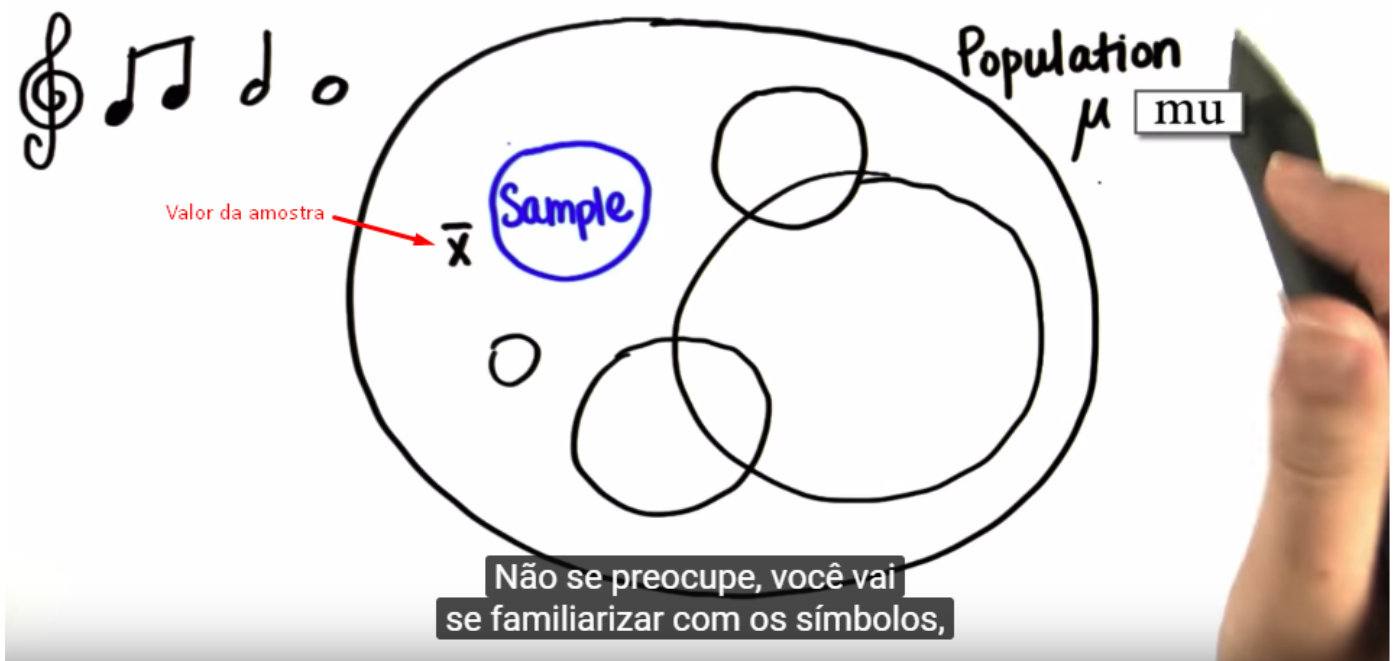
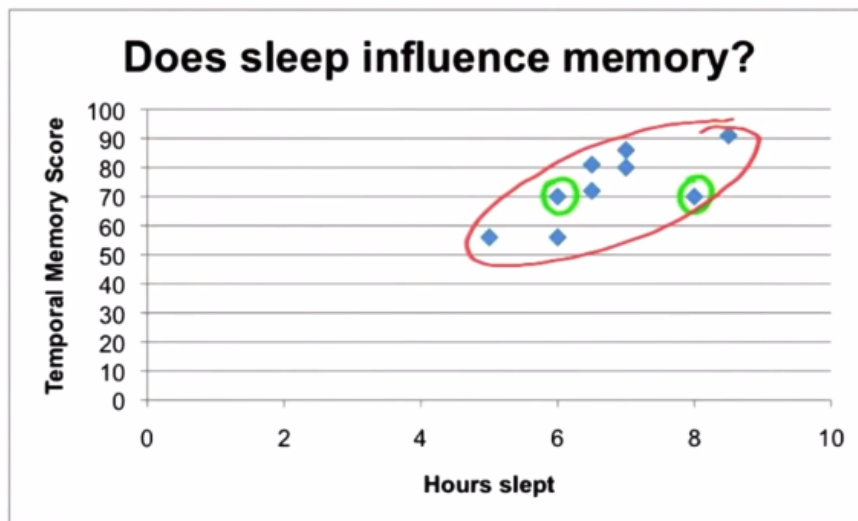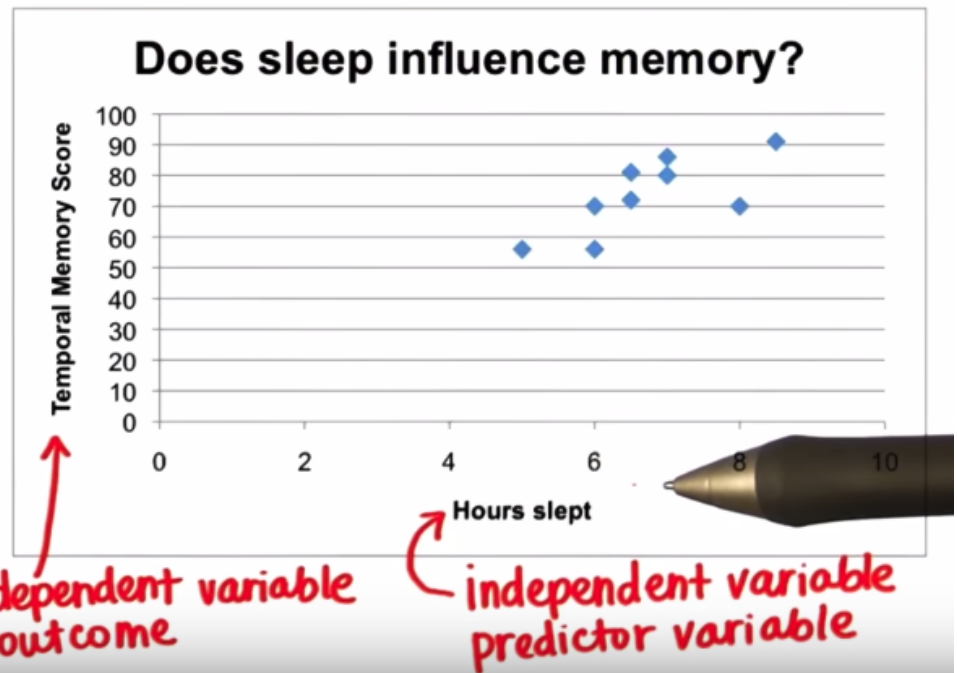O valor da M - X (Amostra) - Dif. entre os valores - é equivalente a erro de amostragem

Sig. que podemos realizar palpiter instruídos em amostragem, porém, provavelmente não serão 100%

Population parameters (such as mu, or μ) are values that describe the entire population. Sample statistics (such as X-bar, or $\bar x$) are values that describe our sample; we use statistics to estimate the population parameters. Estimates are our best guesses for the population parameters. So, for example, we would use X-bar to estimate mu.

Hours Slept	Temporal Memory
7	86
8	70
6	56
5	56
6	70
7	80
6.5	72
8.5	91
6.5	81
7	86

Does sleep influence memory?

Temporal Memory Score (y-axis): 0 to 100

Hours slept (x-axis): 0 to 10

dependent variable
outcome

independent variable
predictor variable

Does sleep influence memory?

Is it necessarily true that if you go to bed early, your memory will definitely be better tomorrow?

o Yes
✓ No

CORRELATION DOES NOT PROVE CAUSATION.

Show relationships ⇒ Observational studies
Surveys

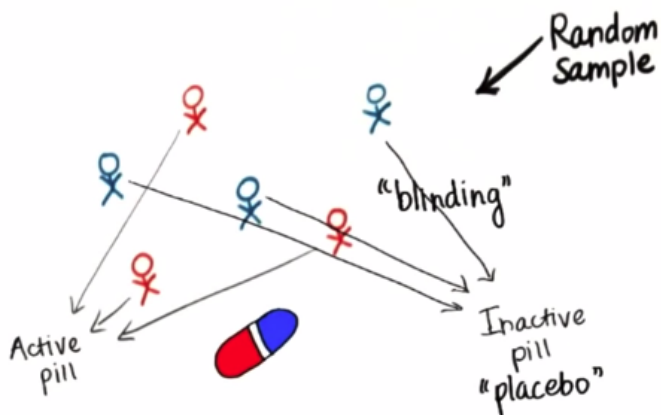Show causation ⇒ Controlled experiment

Survey

Ask people if their memory is better when they sleep more

What are some downsides to surveys?
- ☑ Untruthful responses
- ☑ Biased responses
- ☑ Respondents not understanding the questions (Response bias)
- ☑ Respondents refusing to answer (Non-response bias)

Education Longitudinal Study

Gender → Effort ← Enjoy school

Teachers   Value school

Random Sample

"blinding"

Active pill

Inactive pill "placebo"

São tratamentos falsos; o grupo de controle não sabe

Why are participants not told which pill they received?

- ○ Because all good research includes deception
- ○ They may not participate if they knew they were receiving a drug
- ✓ To make them all believe they are receiving medication
- ○ They may not participate if they knew they weren't receiving a drug

In [ ]: