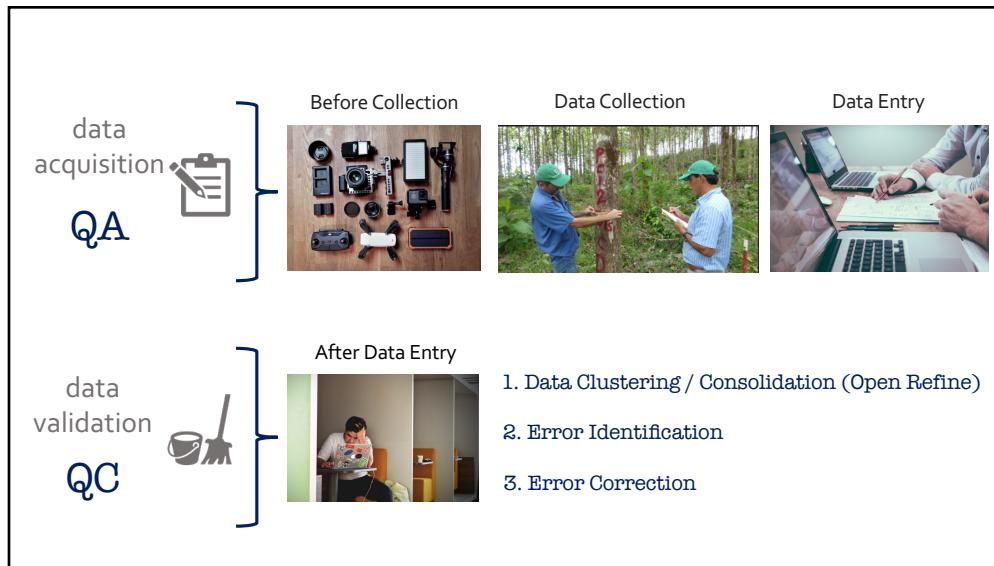
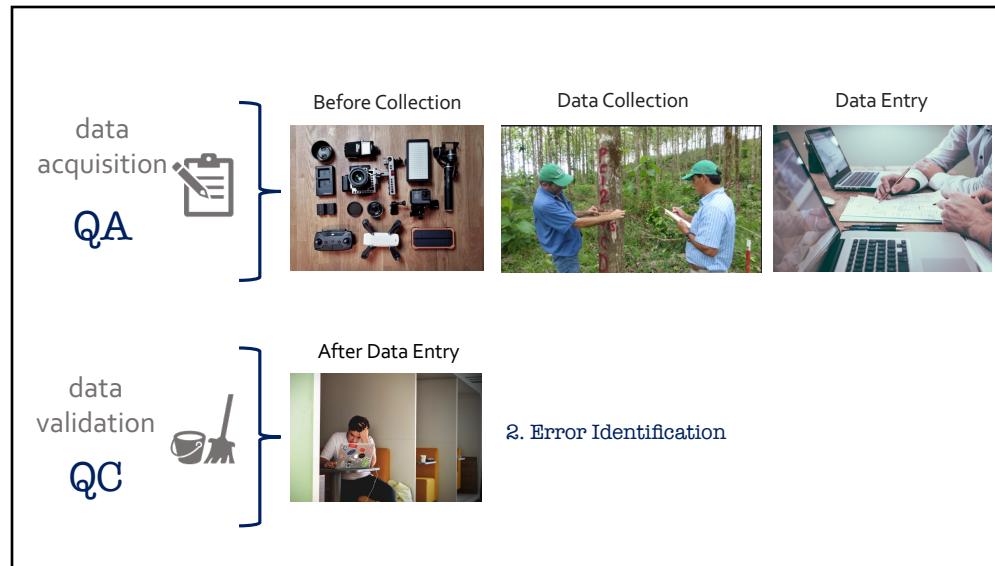


1



2

1



3



Data
Detectives

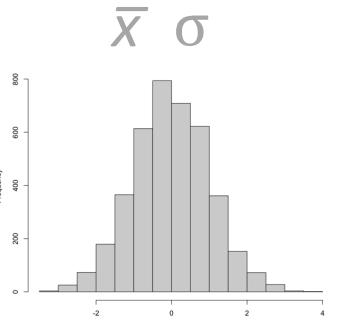
4

How can we find errors?

Manual Review

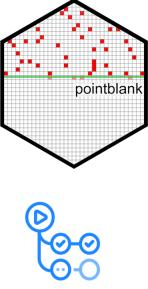


Data Summaries & Exploratory Visualization



\bar{x} σ

Automated Review



pointblank

GitHub Actions

5

Two types of error in particular....

1. Outliers

(relevant stock images get weird fast...)

6

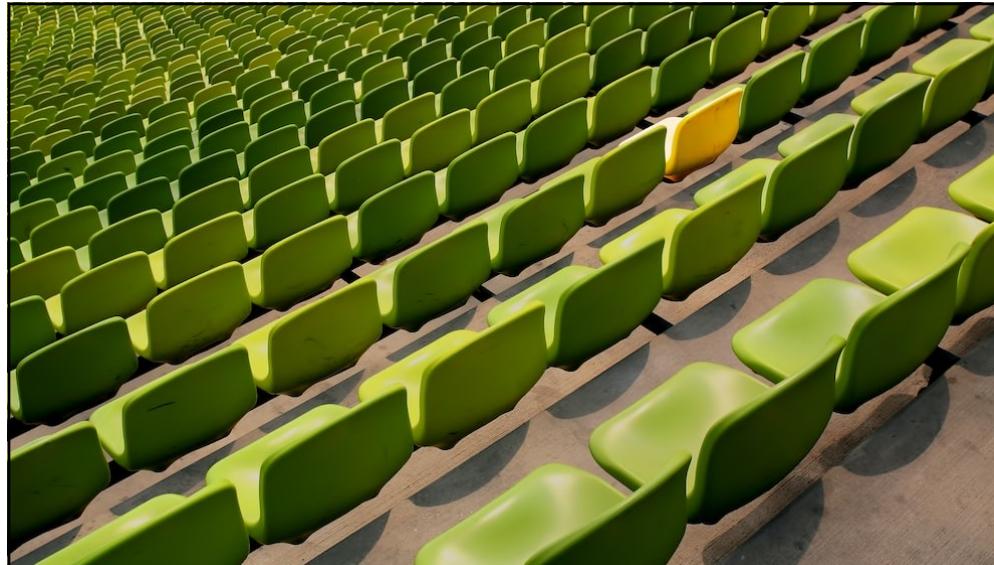
3



7



8



9



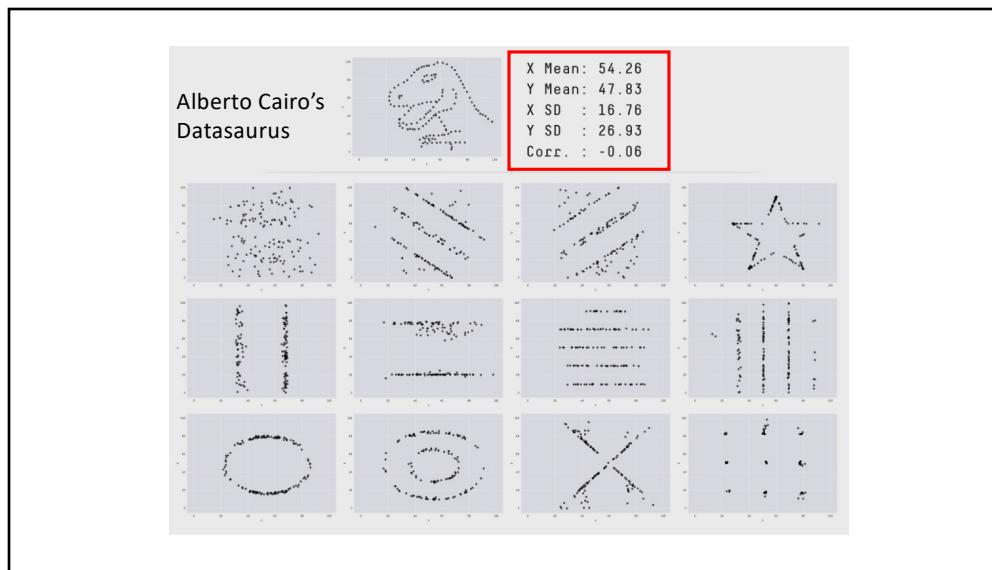
10

2. Systematic (structural)

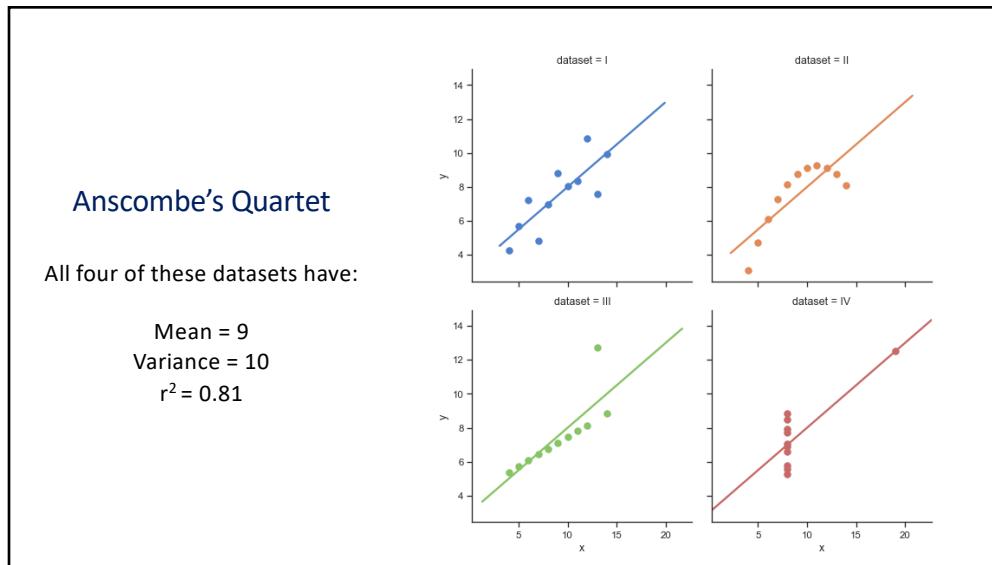
11



12



13



14



15

TODAY

Part 1: Summary Stats in R

base R

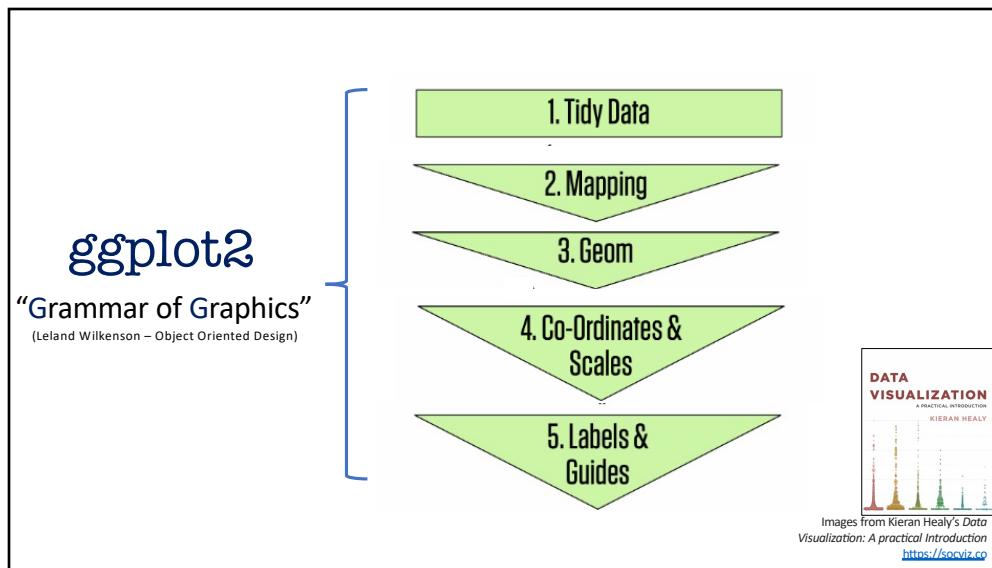
Tidyverse

Part 2: Graphing

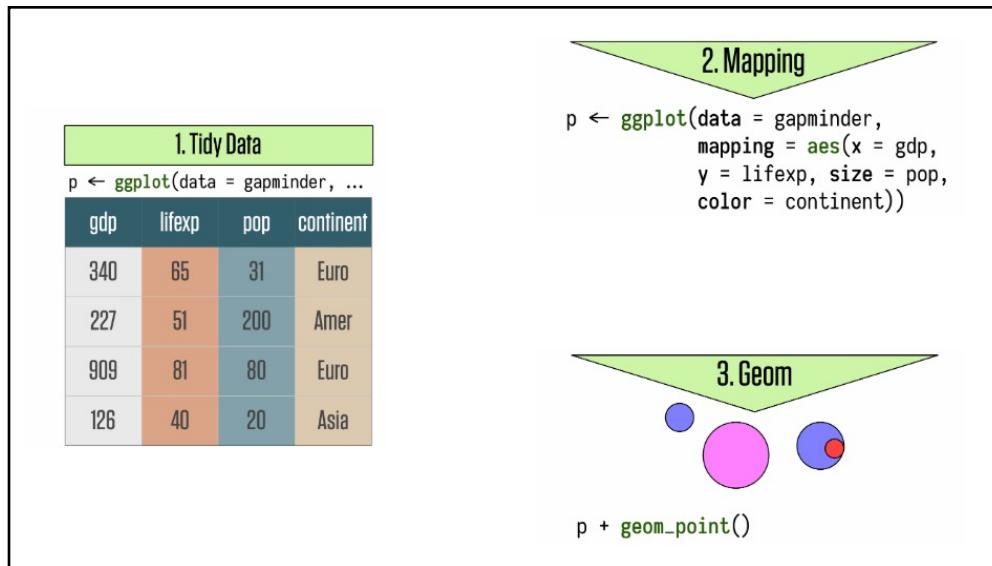
base R

Tidyverse

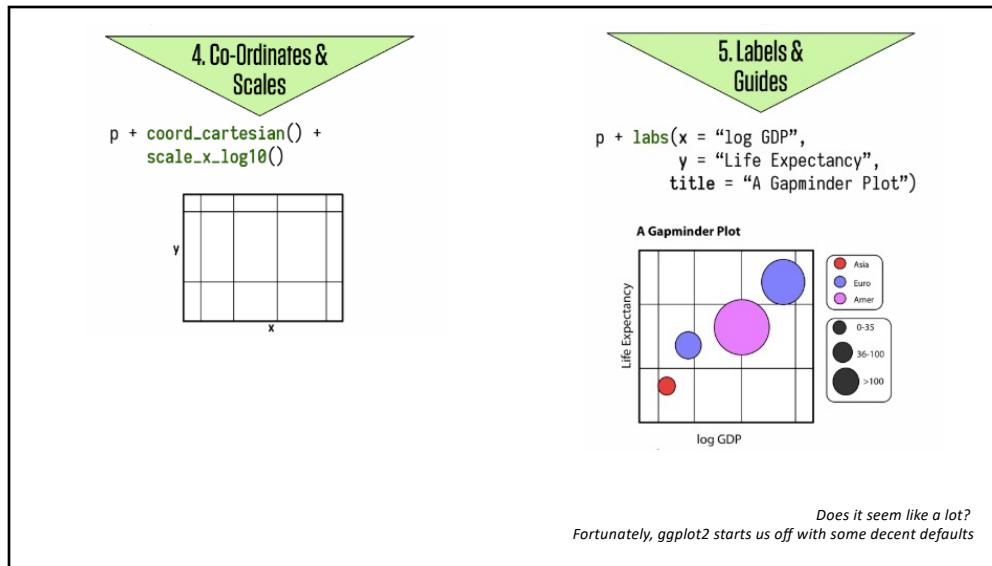
16



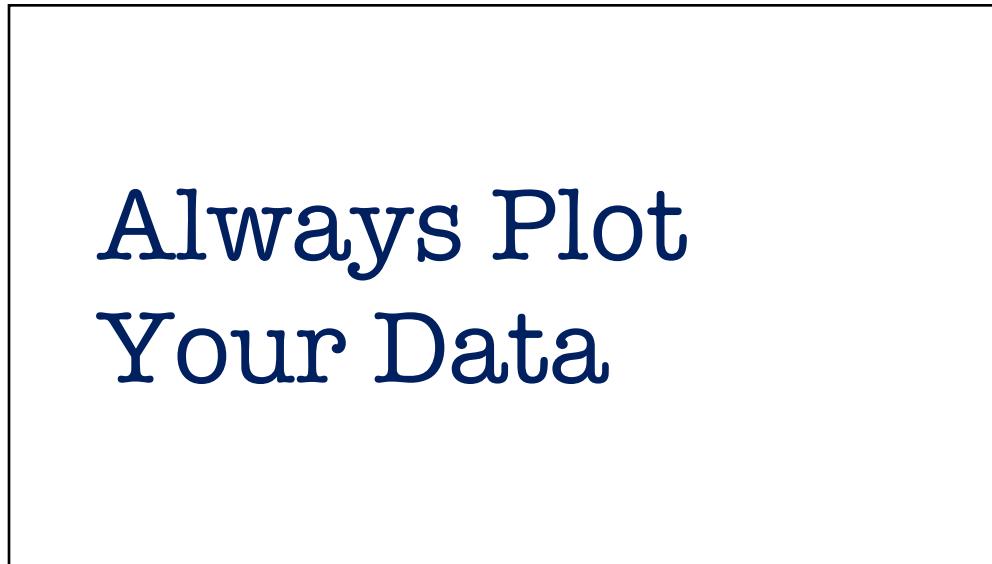
17



18



19



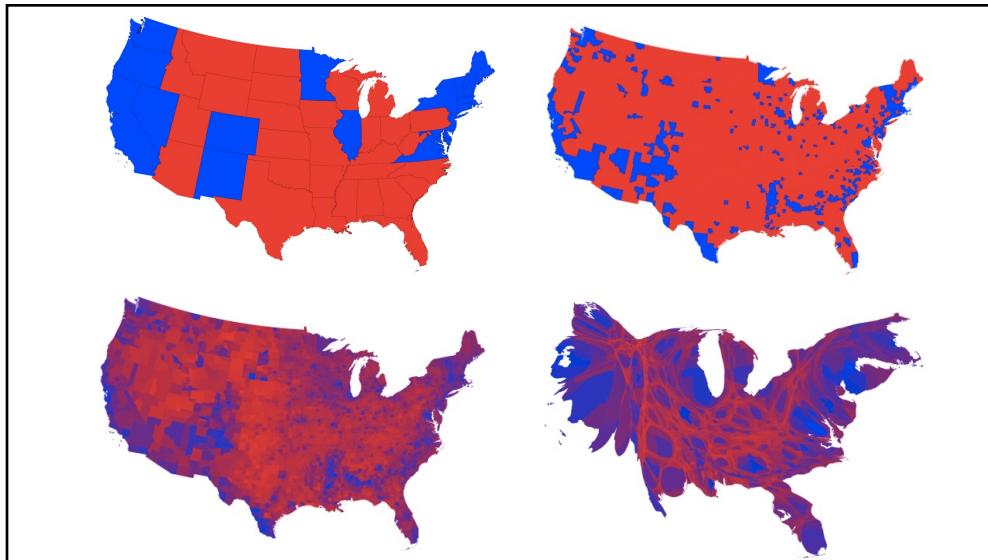
20

2) To better communicate those results.

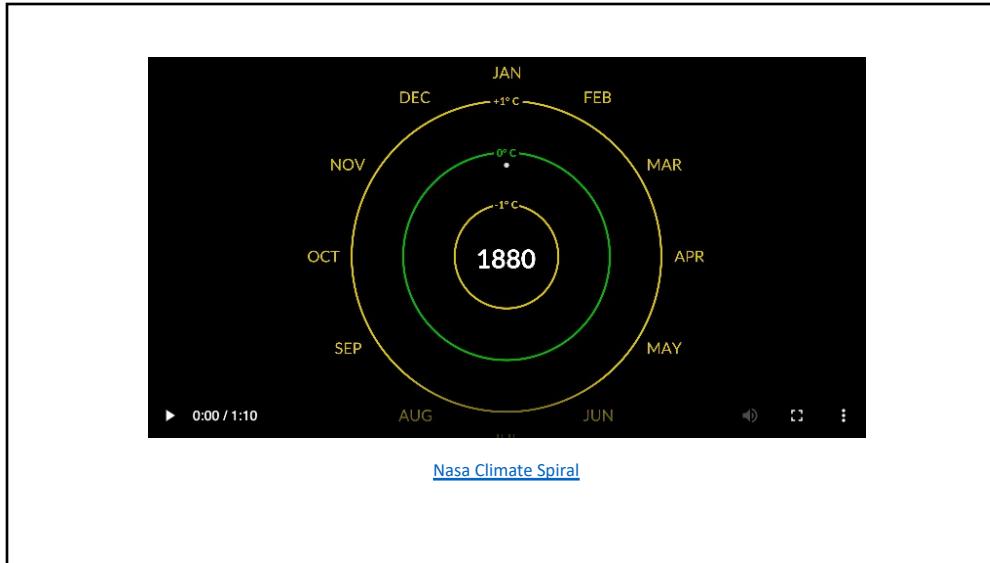
Trite but true:

A picture is worth a thousand words

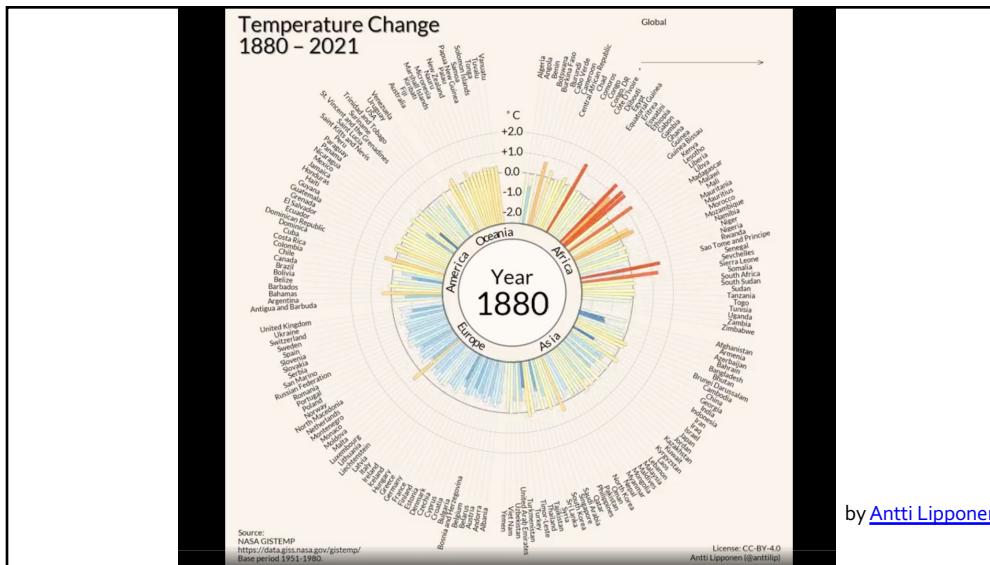
21



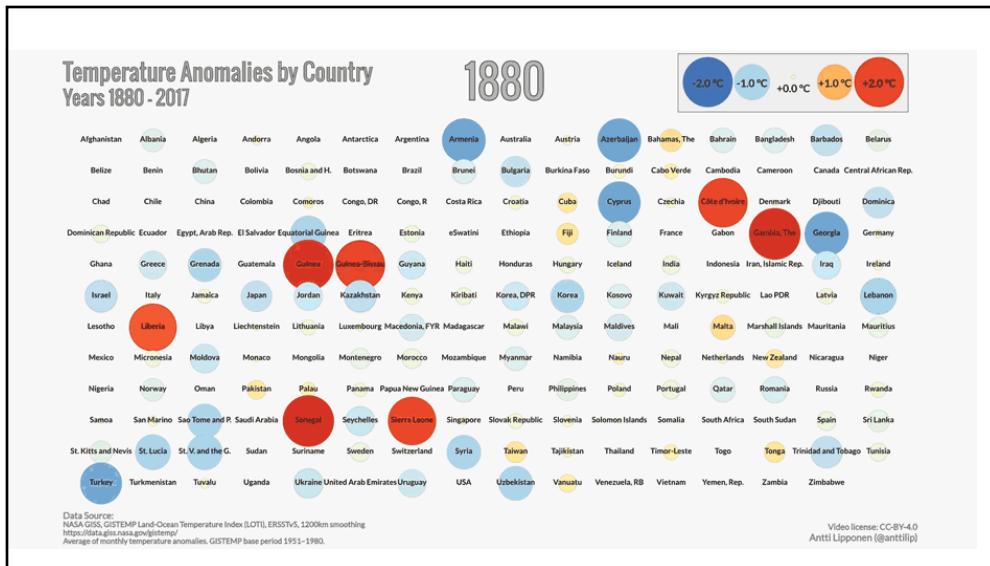
22



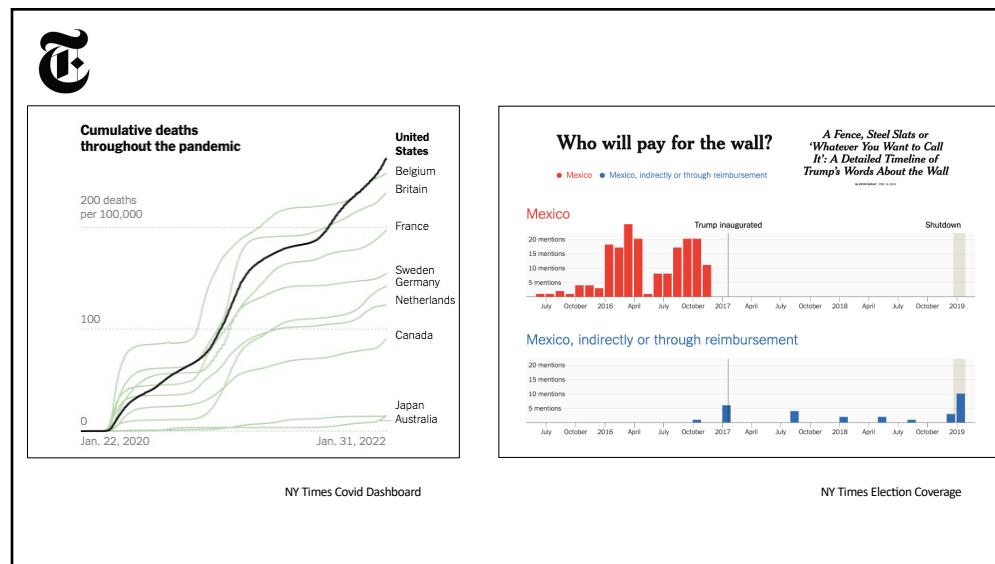
23



24



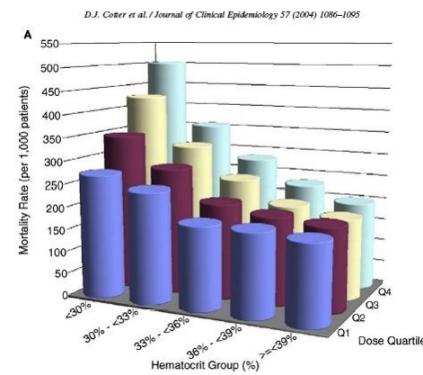
25



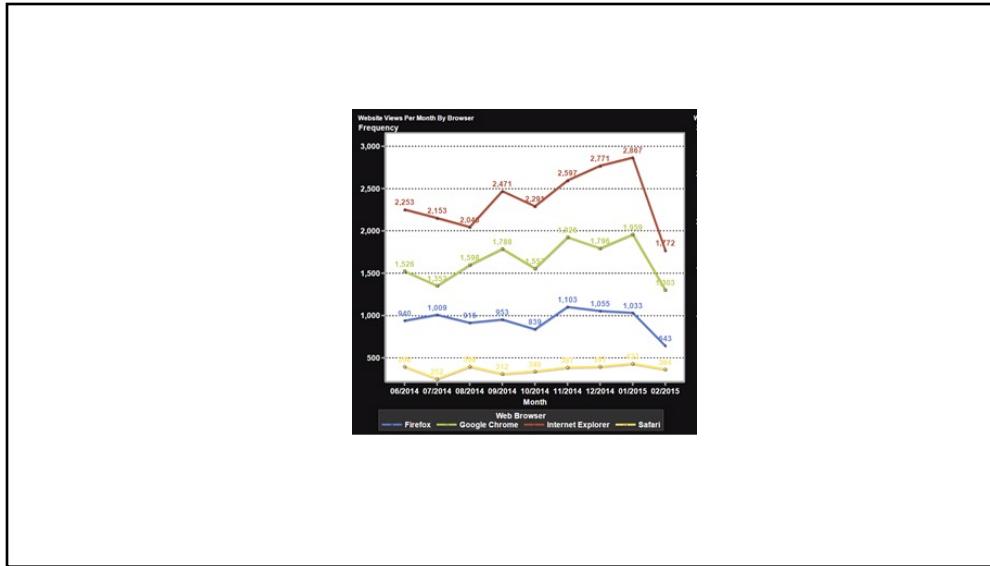
26

We need to talk.

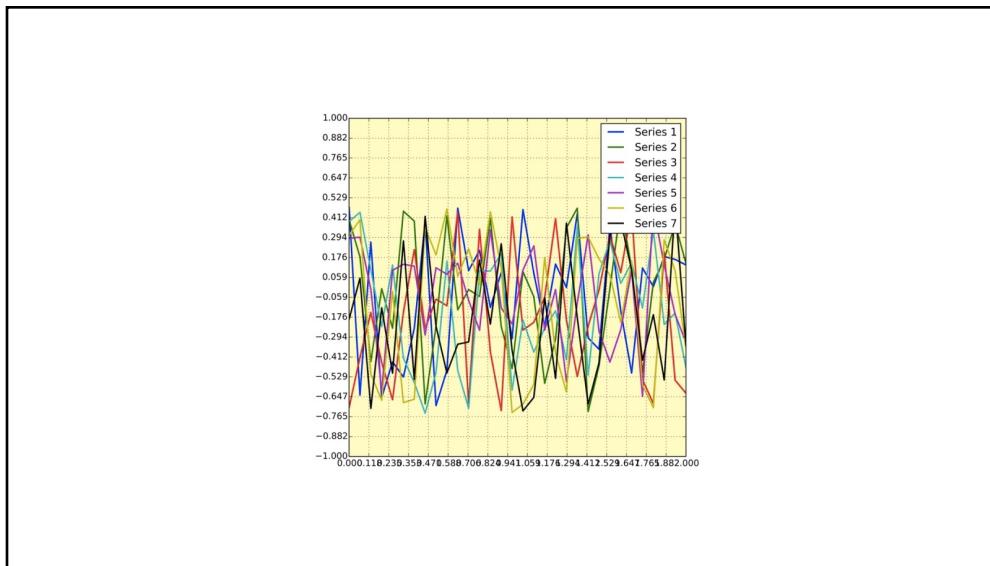
27



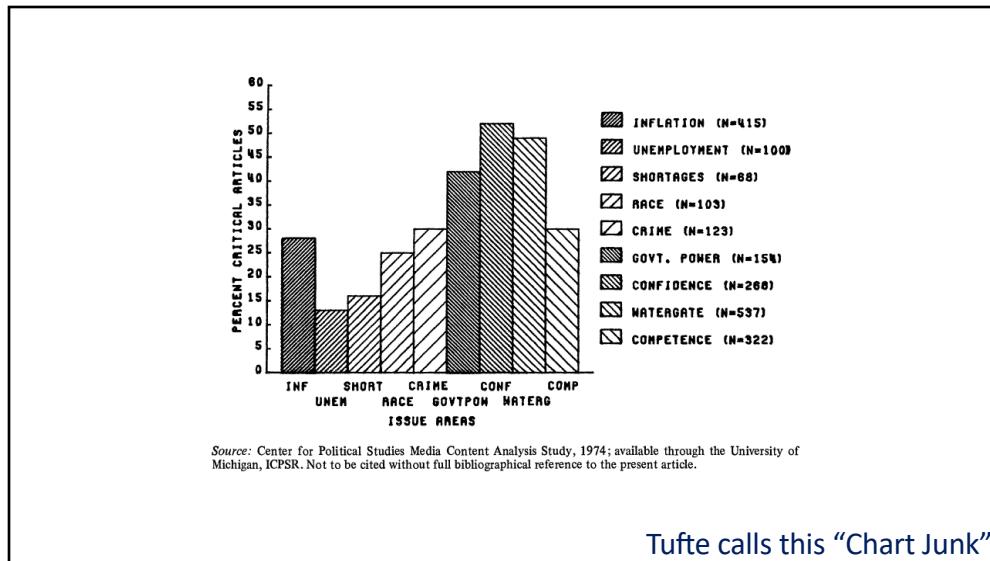
28



29



30



31

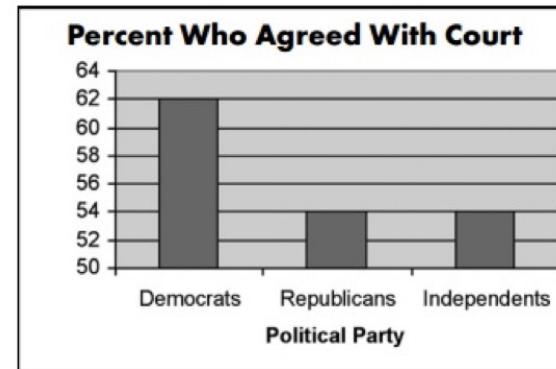
Be aware of how your visualization choices influence your ability to validate, interpret, and communicate your results.

Be aware of how decisions (or mistakes) made by others can lead you to draw incorrect conclusions.

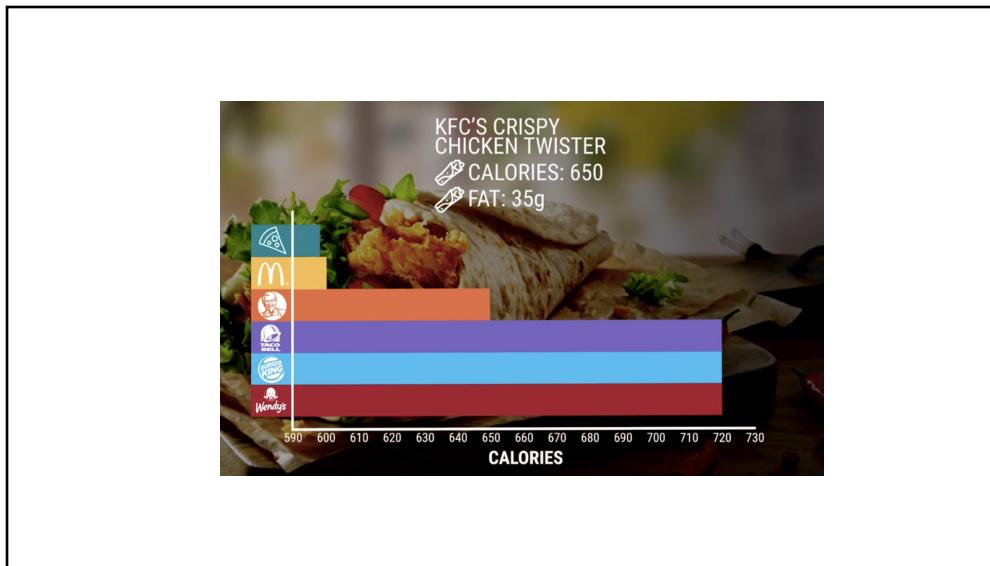
32

Be aware.

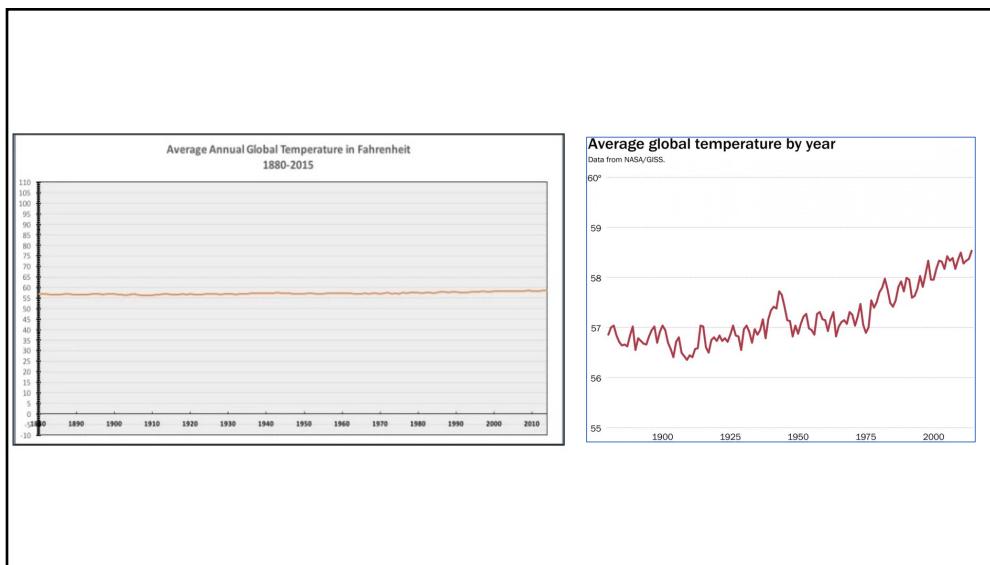
33



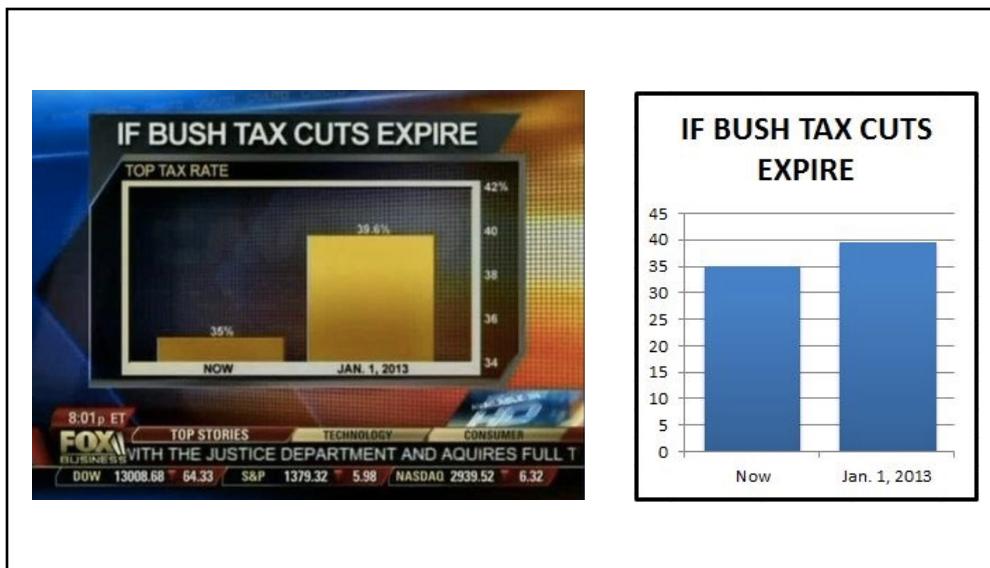
34



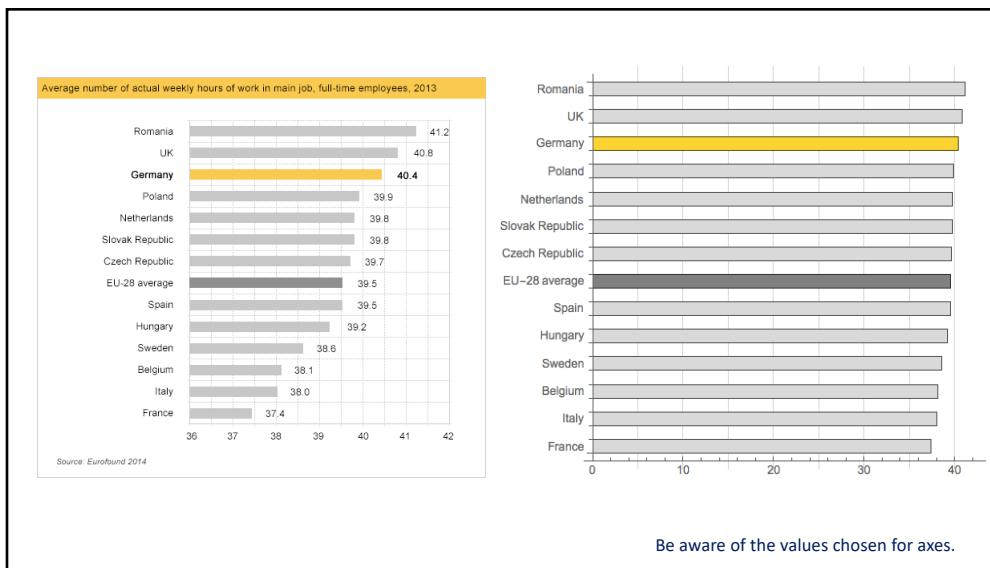
35



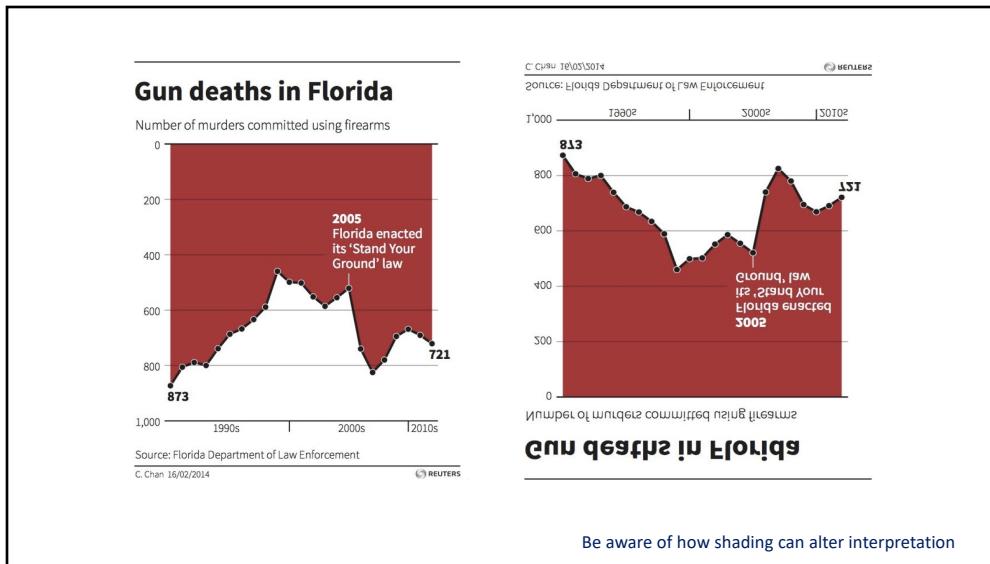
36



37



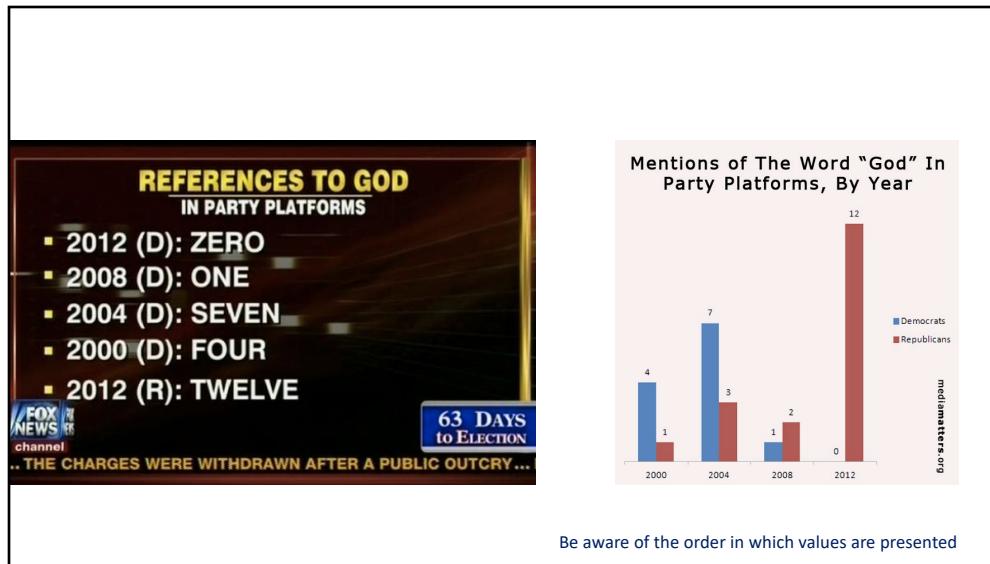
38



39



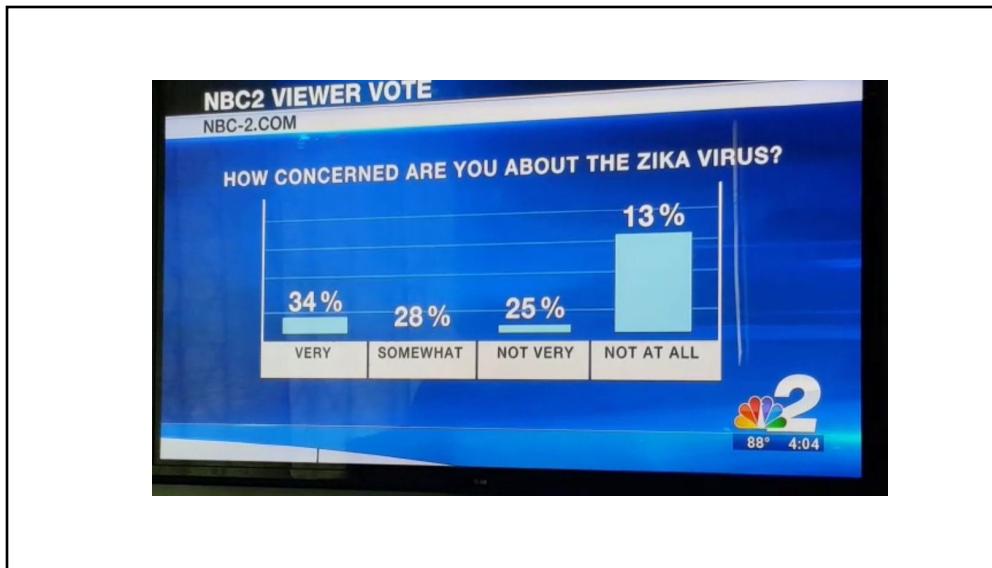
40



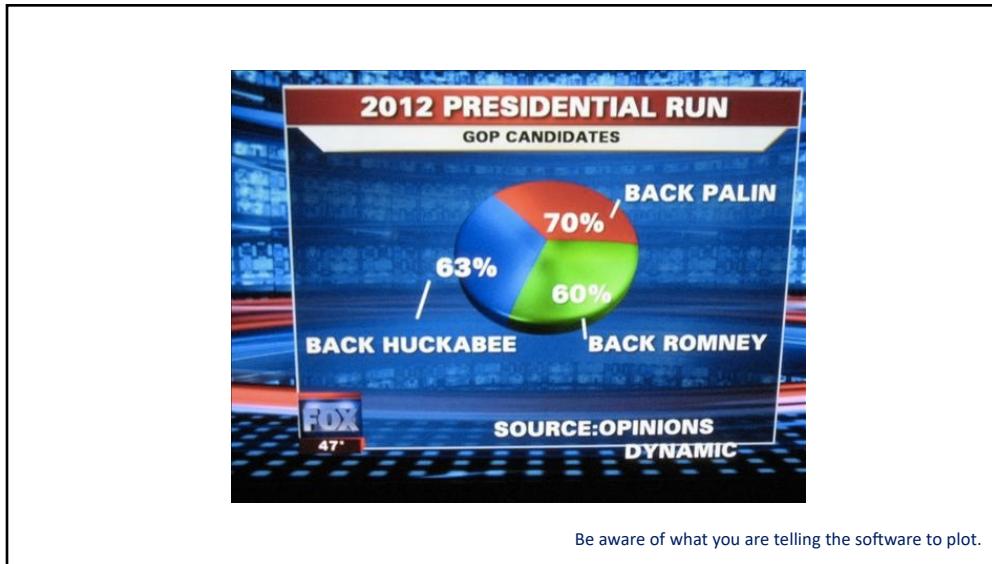
41



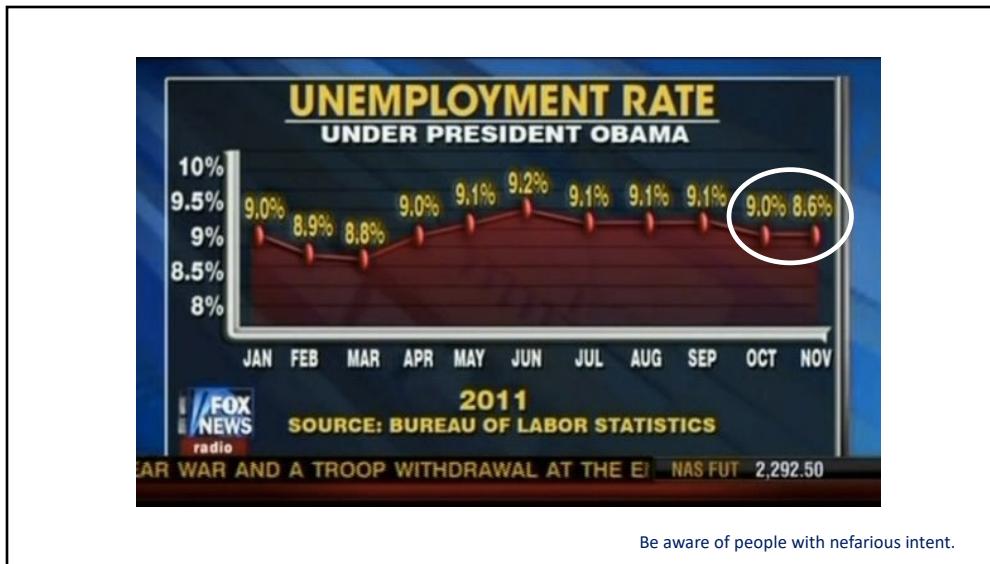
42



43



44



45

James Hamblin  @jameshamblin

Fox added a "%" where it doesn't belong, decreasing fatality by 100x. Based on the CDC data it's not that .054% of people over 70 don't survive COVID. It's 5.4%.

Zeducation  @RealZeducation · Sep 25
Just a reminder that everything in 2020 was over a virus that does this:



Age Group	Infection Fatality Ratio
0-19 YEARS	.00003%
20-49 YEARS	.0002%
50-69 YEARS	.005%
70+ YEARS	.054%

6:49 PM · Sep 26, 2020 · Twitter for iPhone

Be aware of the difference between proportions and percentages.

46

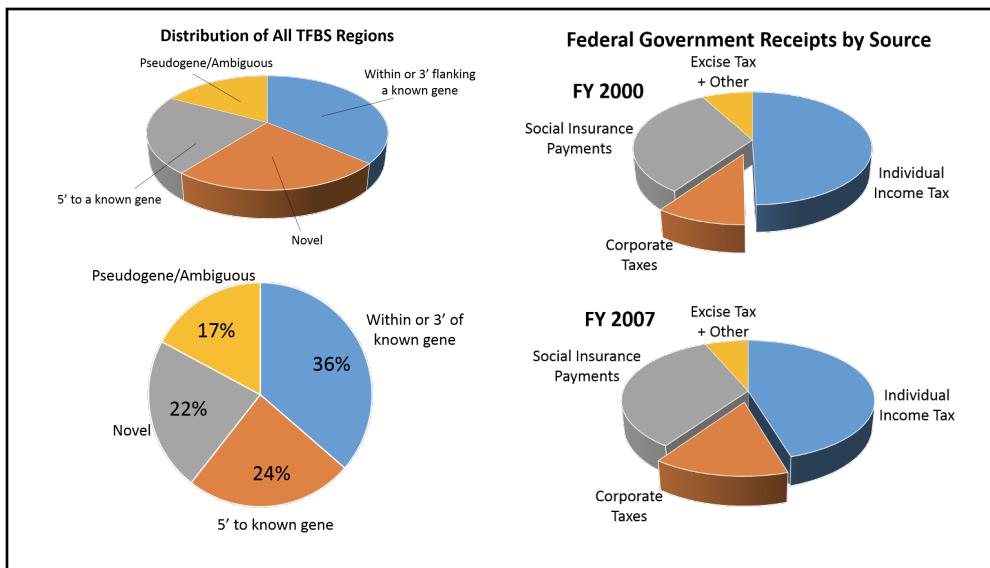


Be aware of whatever this is.

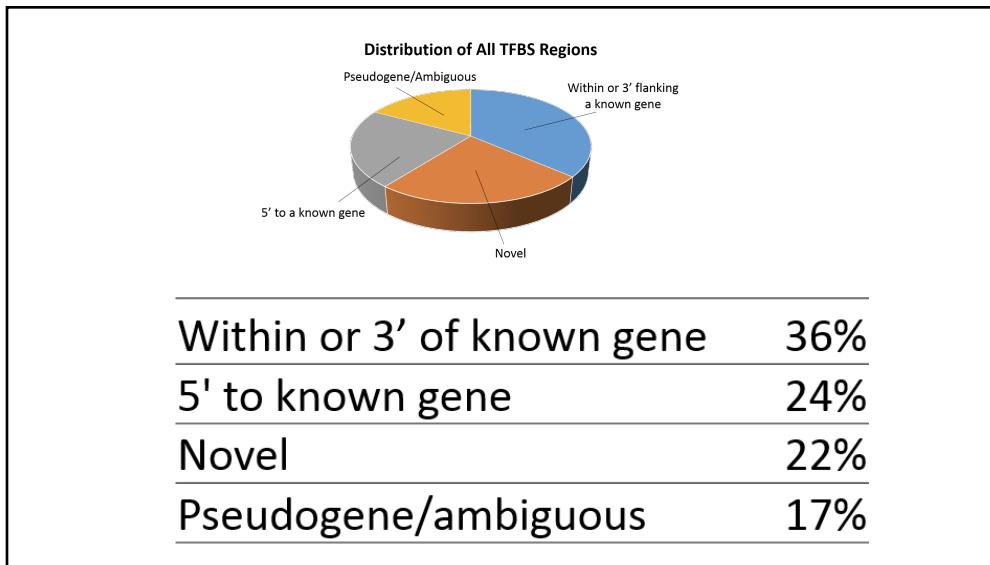
47

Be aware
of pie charts.

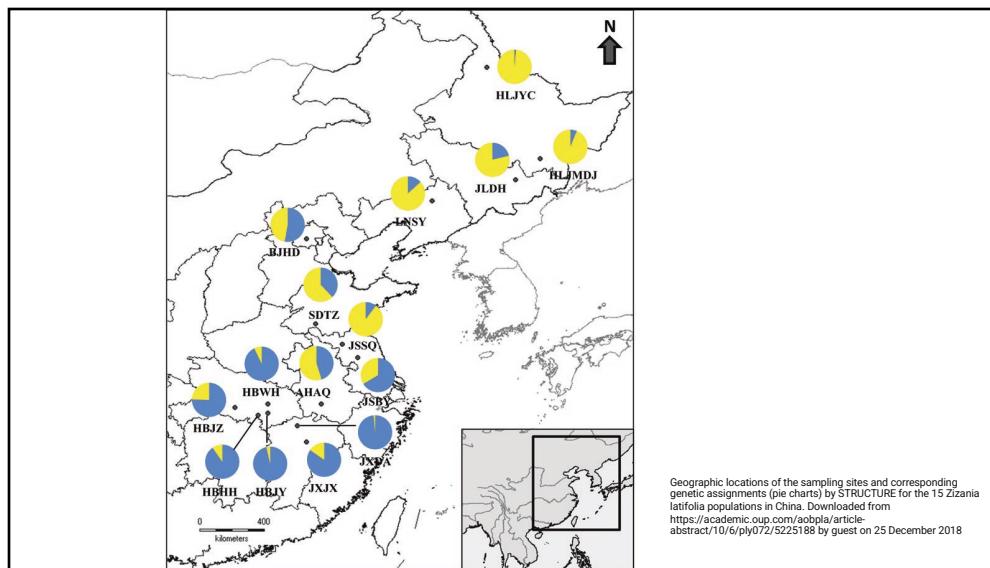
48



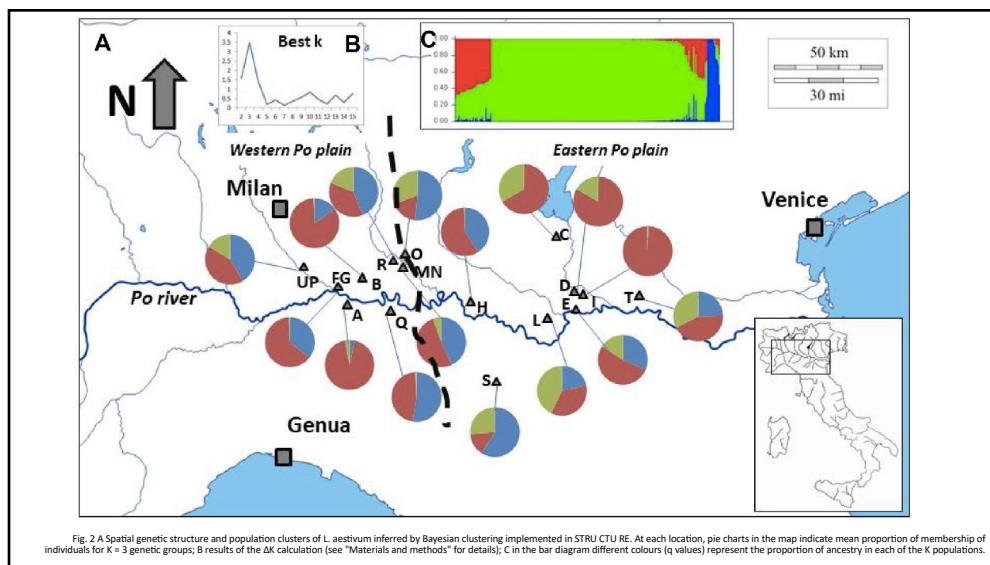
49



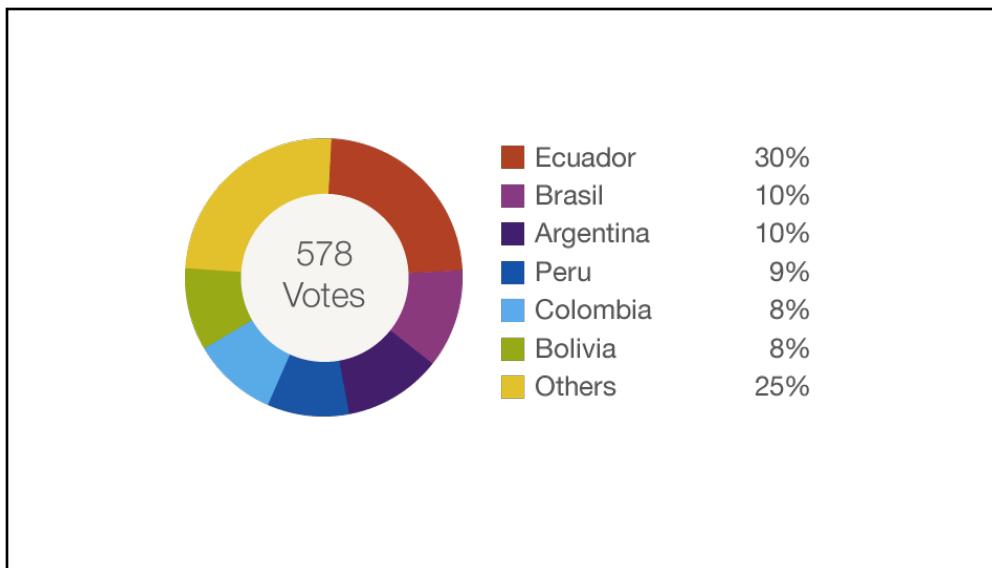
50



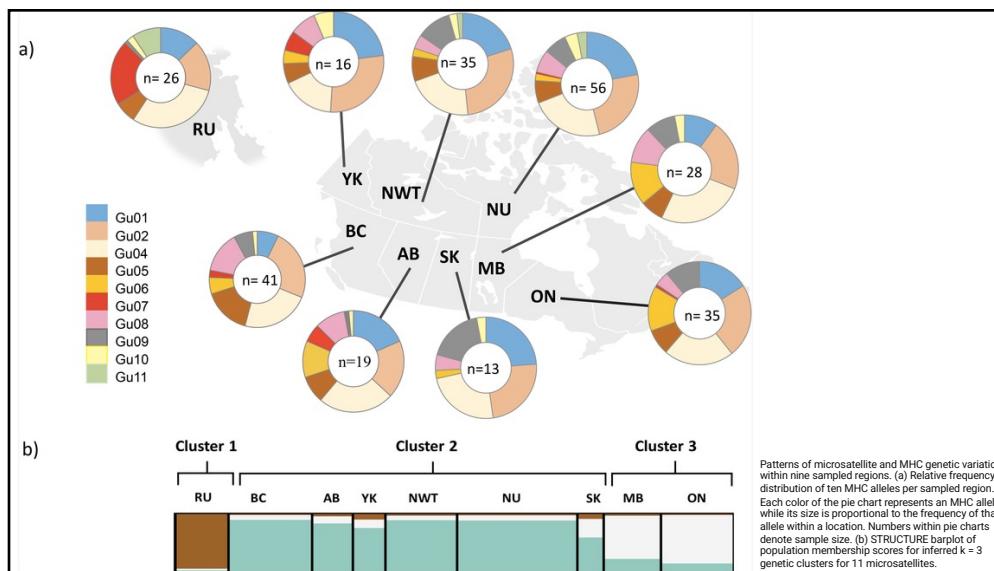
51



52



53



54

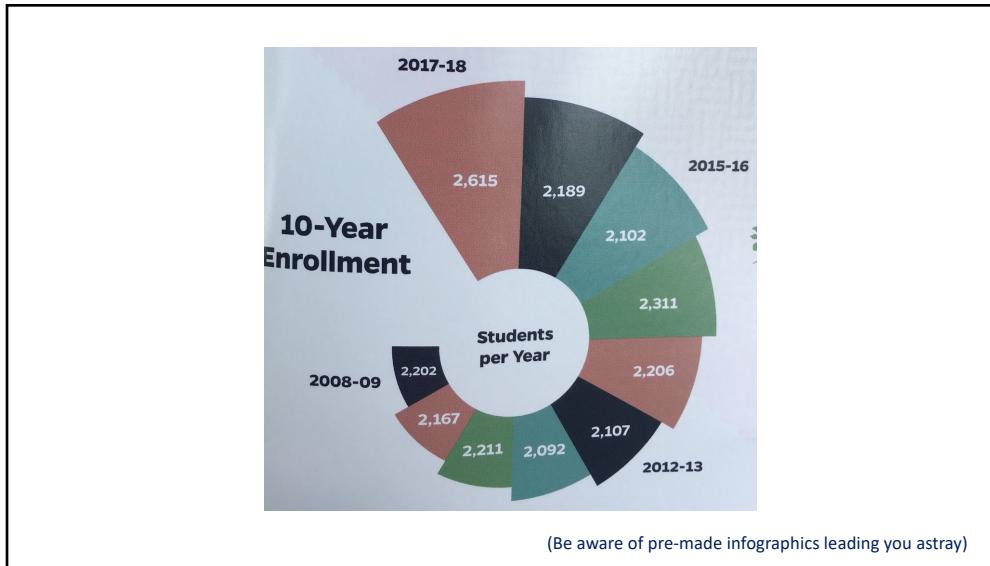
Dr Sardonicus 😊👉🏽☕️
@scottmcorrow

Replies to @ParkerMolloy

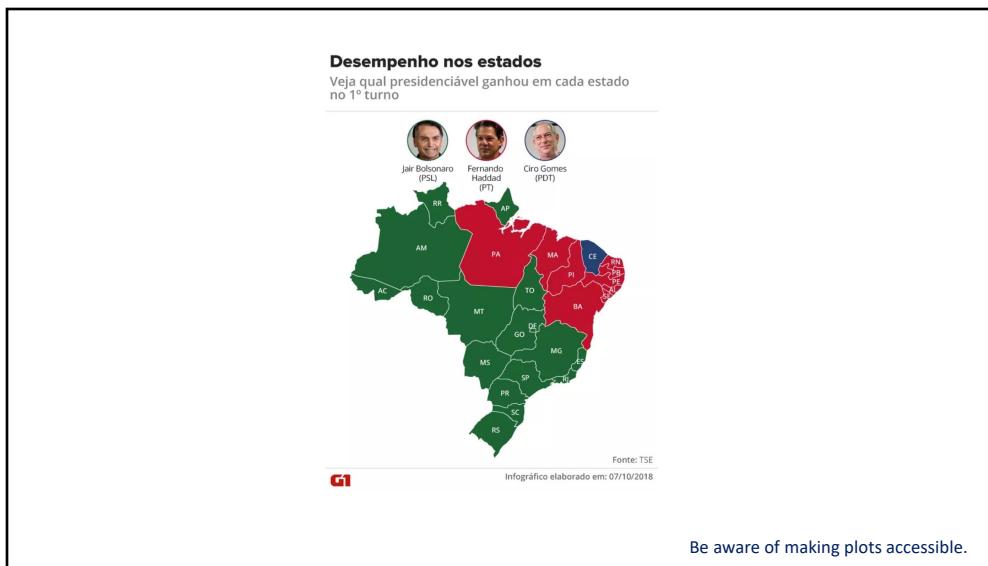
Look how perspective distortion was used to make Biden and Buttigieg look larger than Sanders and the rest of the field.

Ideology	Percentage
Sanders	24%
Biden	24%
Buttigieg	19%
Klobuchar	13%
Steyer	11%

55



56



57