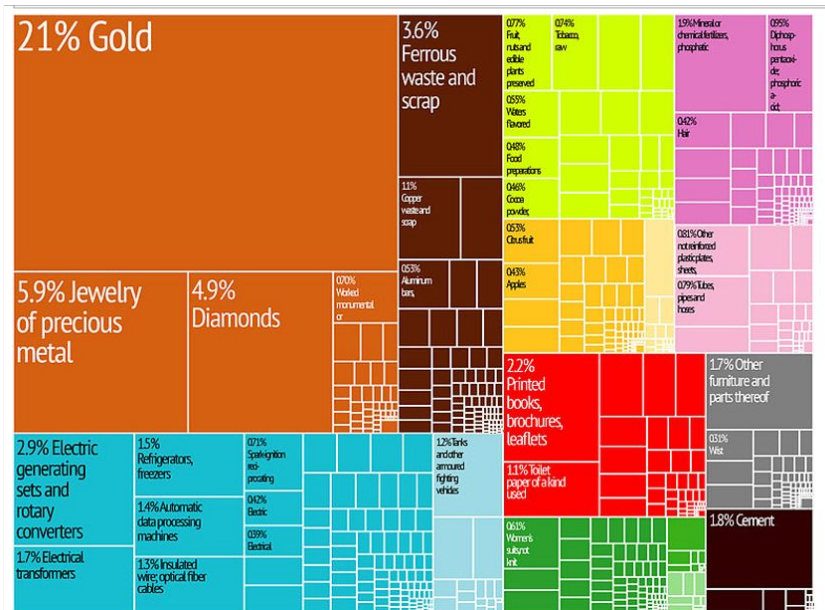


Q: Which visual cue do tree maps use to encode data?



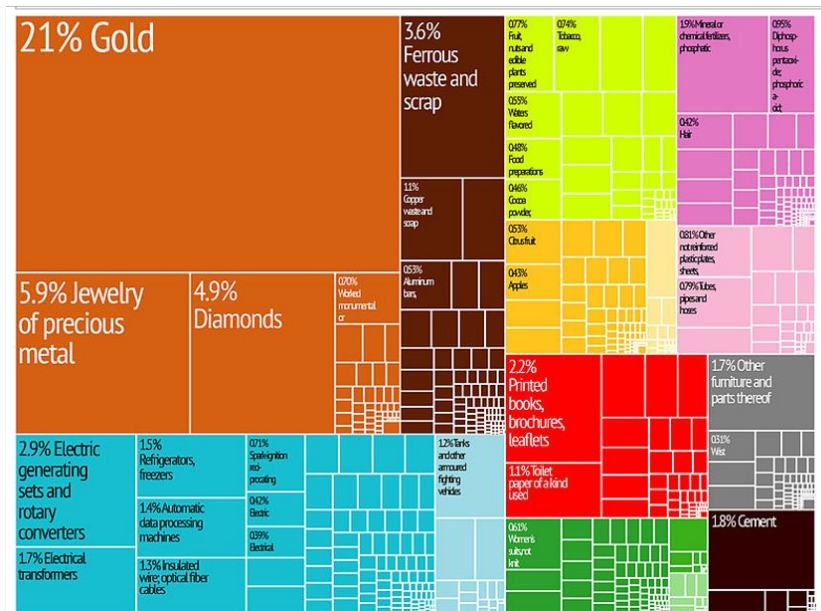
- A. Position common scale
- B. Position non-aligned scales
- C. Length
- D. Direction
- E. Area



Q: Which visual cue do tree maps use to encode data?



- A. Position common scale
- B. Position non-aligned scales
- C. Length
- D. Direction
- E. Area**





CPSC 100

Computational Thinking

**From Perception to Story:
Visual Design & Storytelling**

Instructor: Parsa Rajabi
Department of Computer Science
University of British Columbia



Agenda

- Course Admin
- Learning Goals
- Visualizations
 - Implications of Visualizations
 - Storytelling

Course Admin



Course Admin

- **PC Quiz 7**
 - Due Sunday, March 30, 11:59pm
- **Lab 8 Visualization** (last lab! 🎉)
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- **Project Milestone 3** (*have you started yet?!*)
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 - Tuesday, April 22, 7pm; Location: SWING 121



Learning Goals



Learning Goals

After this **today's lecture**, you should be able to:

- Explain the **important of representation** as it relates to visualization design and usage.
- Assess the **suitability of a visualization** for a specific task.
- Compare **effective** and **flawed** visualizations using examples from media.
 - State the **strengths** and **weaknesses** of these data visualizations.
- Assess the **ethical responsibility of designers** in crafting visualizations that truthfully reflect data.

Implications of Visualizations

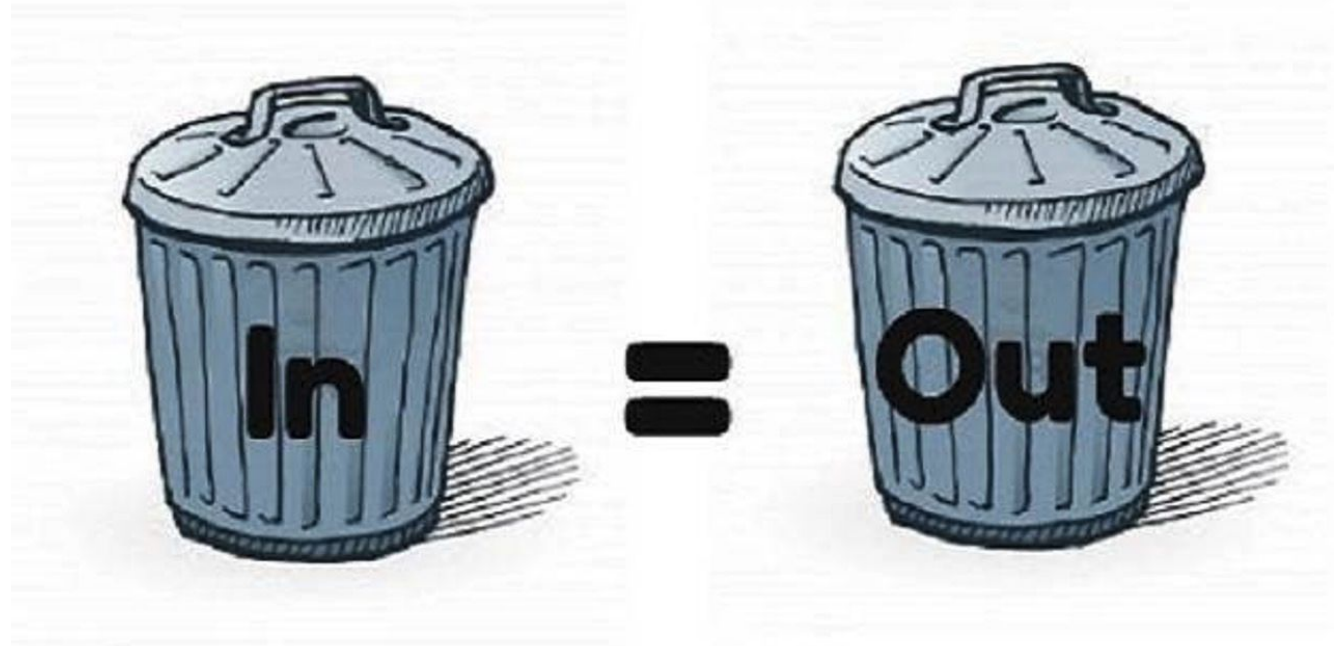


Ethical Considerations

- Visualizations are **NOT** facts
- A visualization's accuracy is dependent upon
 - The quality of the data used
 - The manner in which the data is conveyed
(i.e., its representation)
 - The objectivity of its creator (i.e., what's the goal/motive?)

Implications of Visualization

- Incorrect data
- Missing data
- Insufficient data





Implications of Visualization

- Truncated graphs
- Exaggerated scaling
- Incorrect Attribute to Channel Mapping
- Improper extraction
- Misusing metaphors
 - Is green good or bad? Is red good or bad?
 - Flawed representations

Examples & Discussion





AROUND
The
WORLD


GIANT HORNETS KILL 42 PEOPLE IN CHINA

LIVE
CNN

LIGHT NOW

CHICAGO  71°

DETROIT  66°

HOUSTON  77°

HEALTH EVALUATION IN MIRIAM CAREY'S HOME AFTER DC C

CNN.com

<https://www.mediamatters.org/fox-news/dishonest-fox-charts-obamacare-enrollment-edition>

Dishonest Fox Charts: Obamacare Enrollment Edition

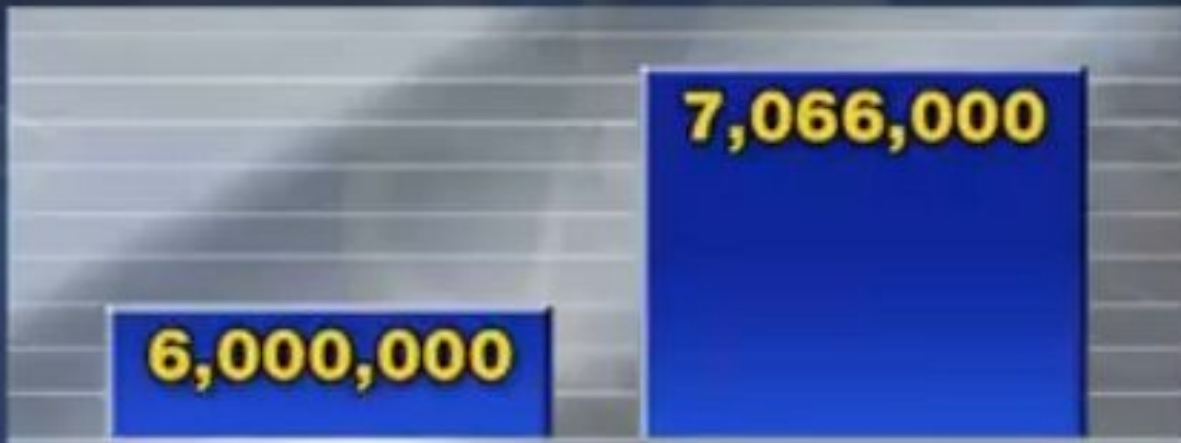
WRITTEN BY SAMANTHA WYATT

PUBLISHED 03/31/14 11:49 AM EDT

Fox News showed a dramatically skewed chart to suggest enrollment for the Affordable Care Act (ACA) would come up far short of the initial estimate of 7 million enrollees.

On March 27, health insurance enrollment through the ACA's exchanges [surpassed 6 million](#), exceeding the [revised estimate](#) of enrollees for the program's first year before the March 31 open enrollment deadline. Enrollment appears on track to hit the Congressional Budget Office's initial estimate of [7 million](#) sign-ups, and taking Medicaid enrollees into account, the ACA will have reportedly extended health care coverage to at least [9.5 million](#) previously uninsured individuals.

OBAMACARE ENROLLMENT



AS OF
MARCH 27

MARCH 31
GOAL



SOURCE: HHS

8:13 CT

STUDIO ESTIMATES... TEEN SCI-FI FLICK "DIVERGEN" S&P FUT ▲ 10.50

OBAMACARE ENROLLMENT



FOX NEWS
channel

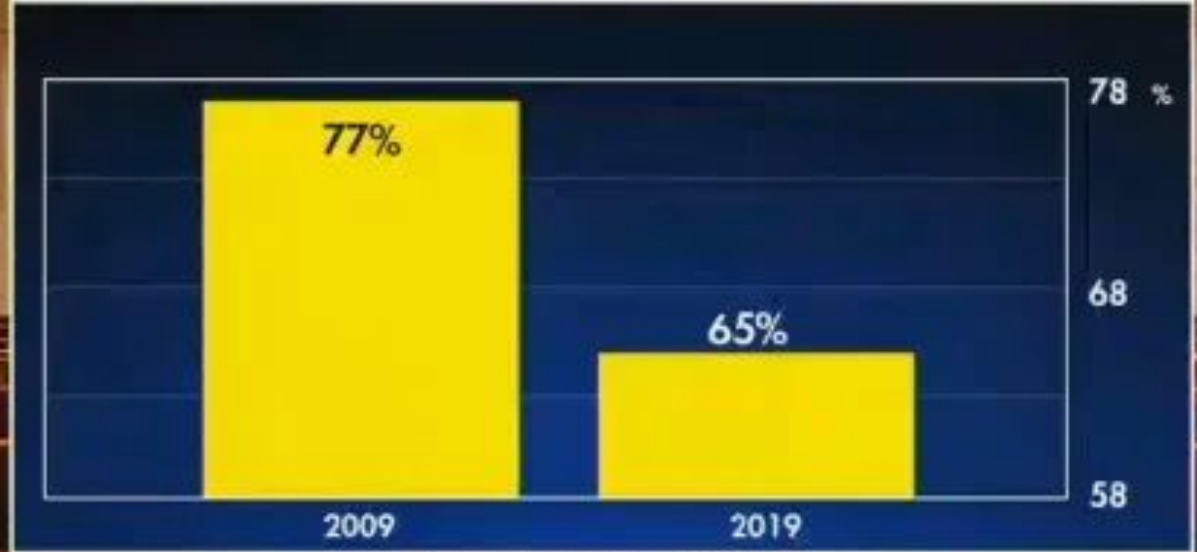
SOURCE: CBO

AMERICA'S
newsroom

RED DISCOUNTED FUEL TO FMR UKRAINIAN PRES V S&P FUT ▲ 6.50



PERCENTAGE OF AMERICANS THAT IDENTIFY AS CHRISTIANS



PEW RESEARCH CENTER

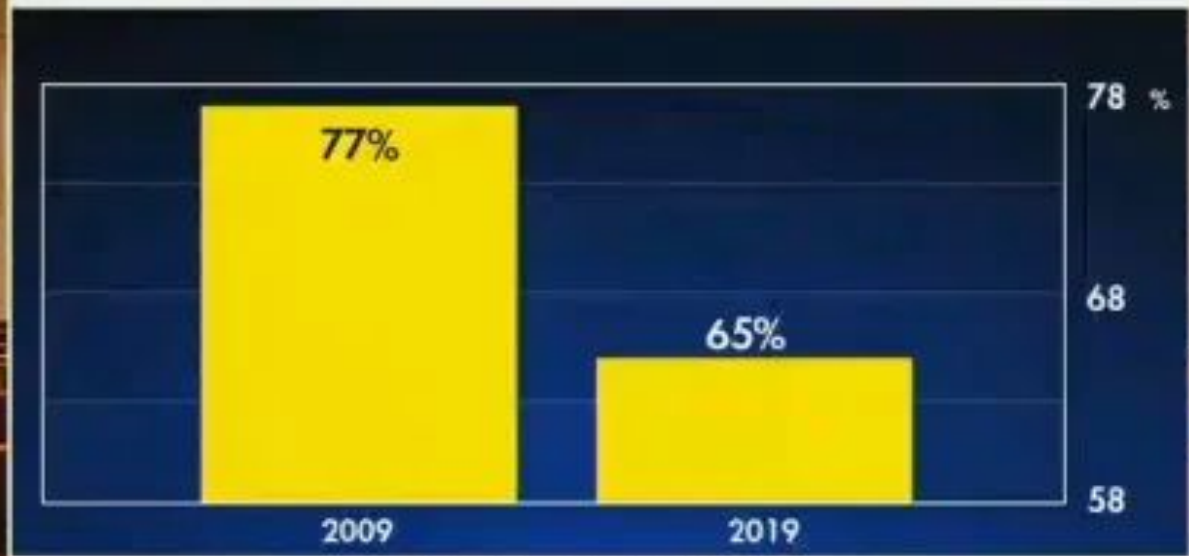


WE USED TO BE AN ENTHUSIASTICALLY CHRISTIAN NATION

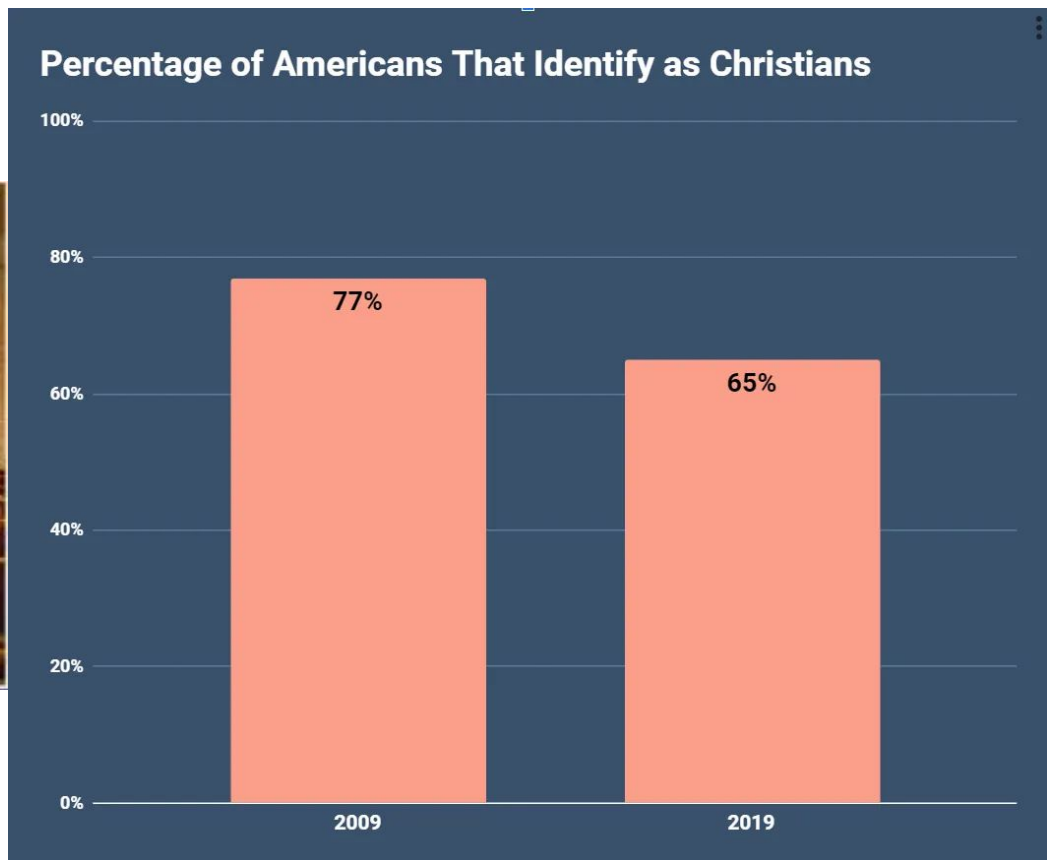
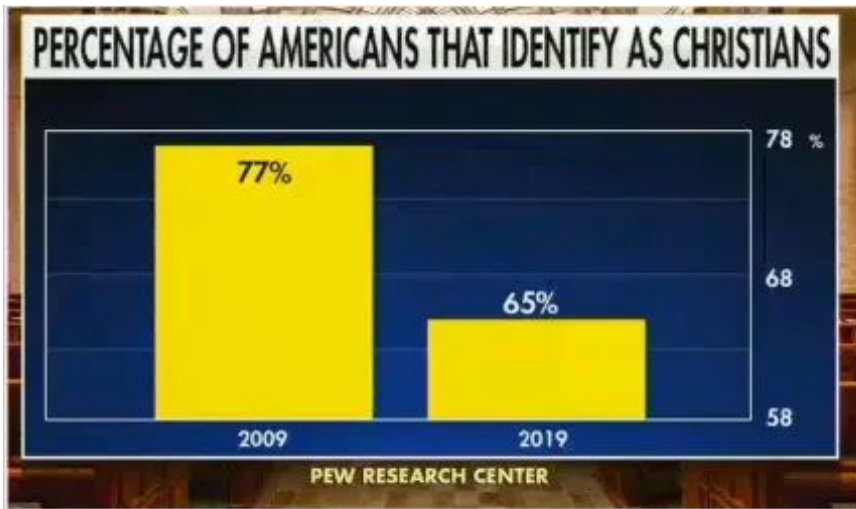
TUCKER CARLSON • TONIGHT •



PERCENTAGE OF AMERICANS THAT IDENTIFY AS CHRISTIANS



PEW RESEARCH CENTER



YANG WINS IOWA'S OFFICIAL YOUTH STRAW POLL!

YANG 22.5%

BERNIE 21%

BUTTIGIEG 17.9%

BIDEN 11.5%

WARREN 9.6%

SOURCE: IOWA SECRETARY OF STATE

Yang2020

YANG WINS IOWA'S OFFICIAL YOUTH STRAW POLL!

YANG 22.5%

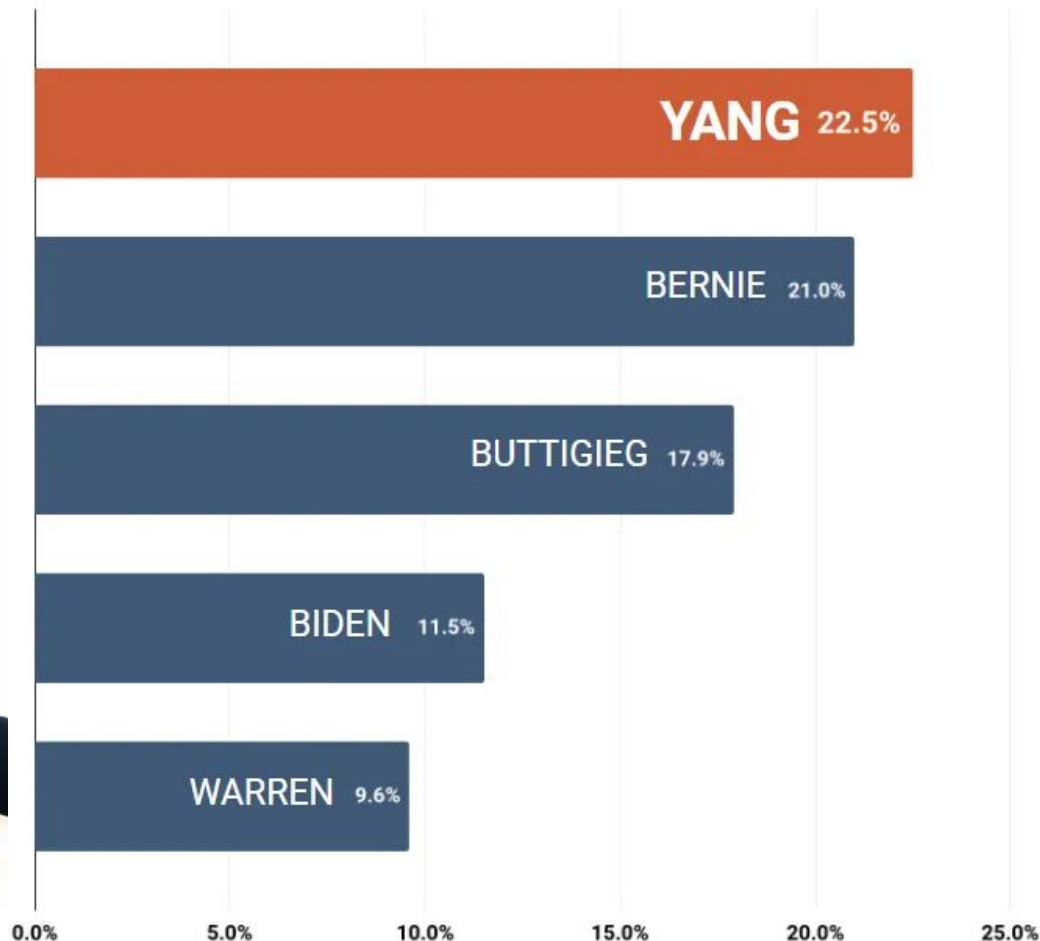
BERNIE 21%

BUTTIGIEG 17.9%

BIDEN 11.5%

WARREN 9.6%

SOURCE: IOWA SECRETARY OF STATE





DAVIDsTEA

1d · 🌐

On a scale of 1 to Energizer Bunny, how much caffeine do you need today? Please refer to the chart above and plan accordingly 🧐

<https://bit.ly/DTShopAll>

caffeine ratings





DAVIDsTEA

1d • 🌐

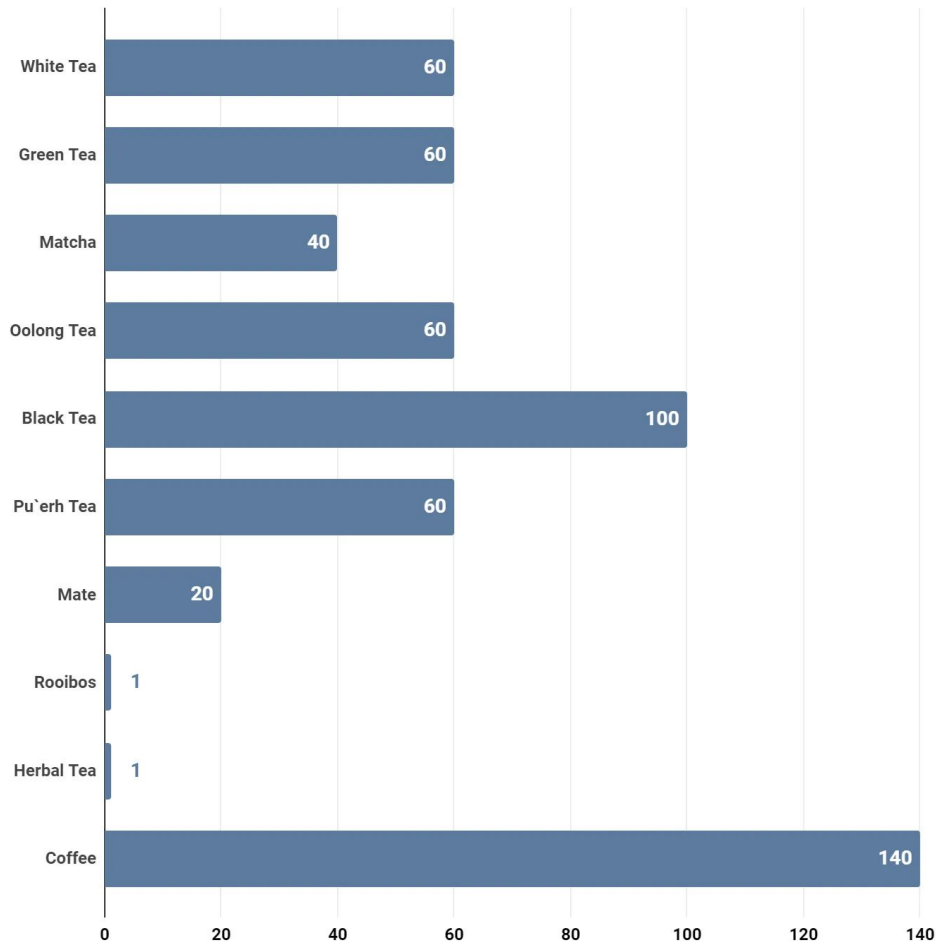
On a scale of 1 to Energizer Bunny, how much caffeine do you need today? Please refer to the chart above and plan accordingly 🧐

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caffeine ratings



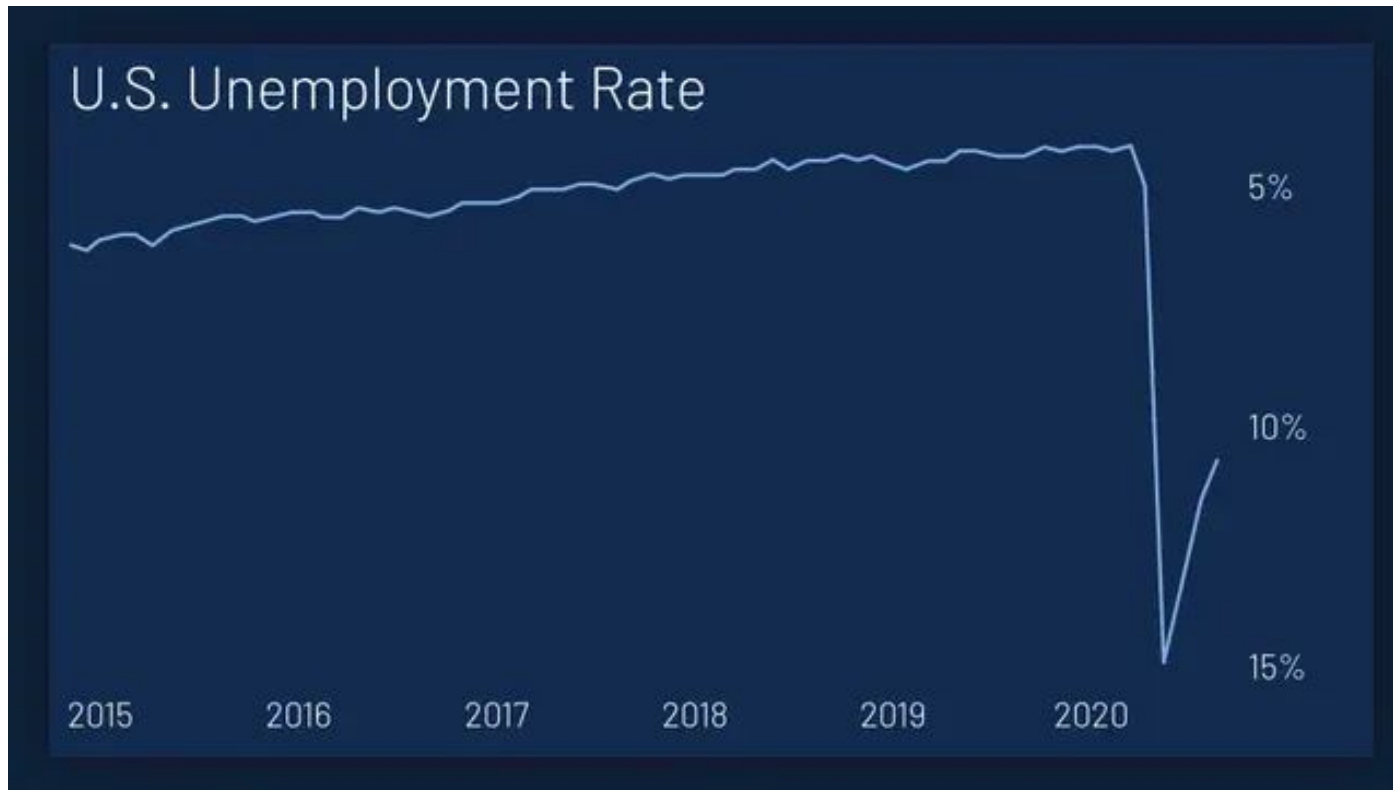
Caffeine Ratings



Q: What is wrong with the following graph?



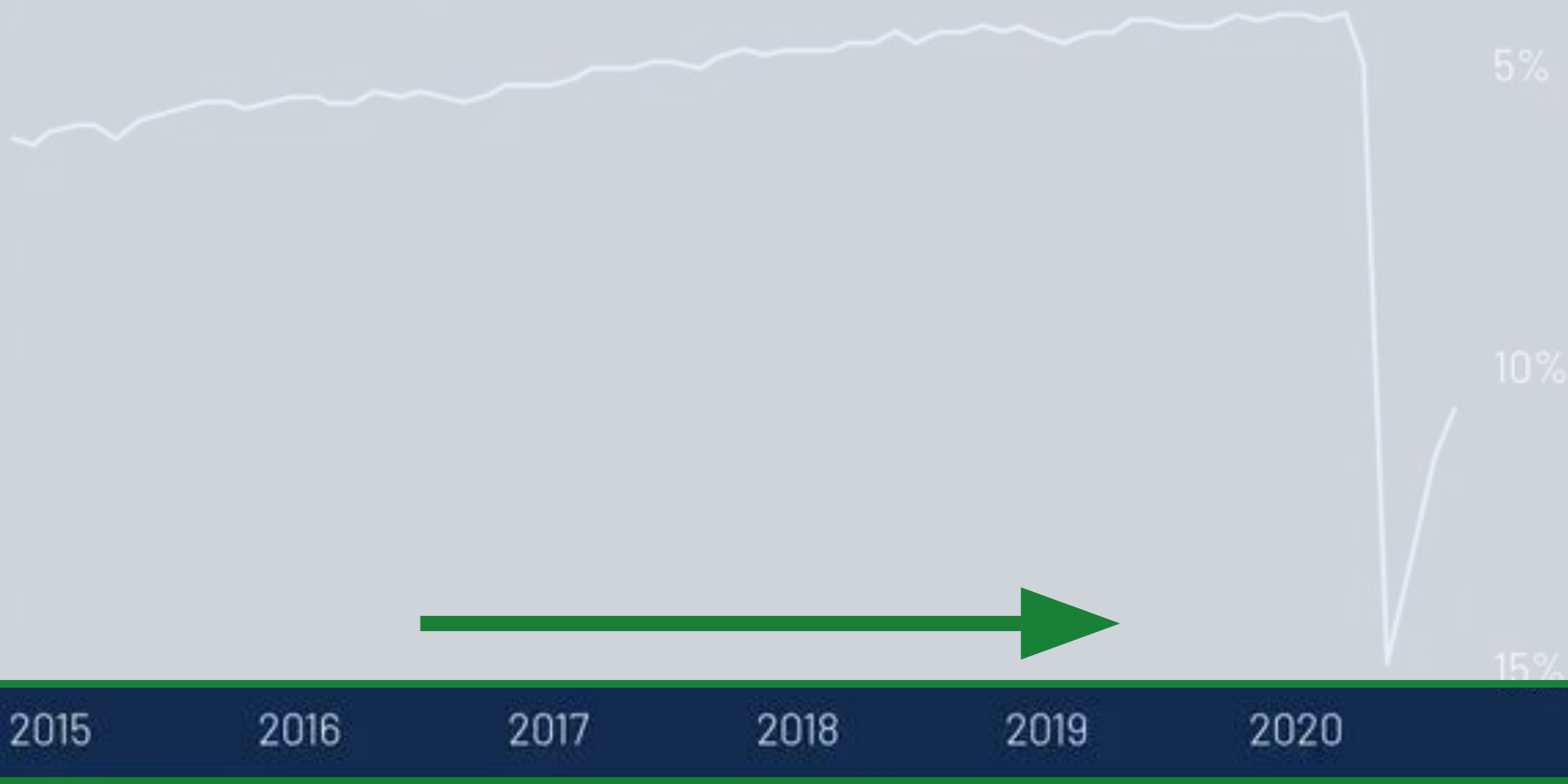
iClicker



U.S. Unemployment Rate



U.S. Unemployment Rate



U.S. Unemployment Rate



U.S. Unemployment Rate



■ SE DESPLOMA EL COBRE POR EFECTO DEL CORONAVIRUS



FUENTE: AGENCIAS



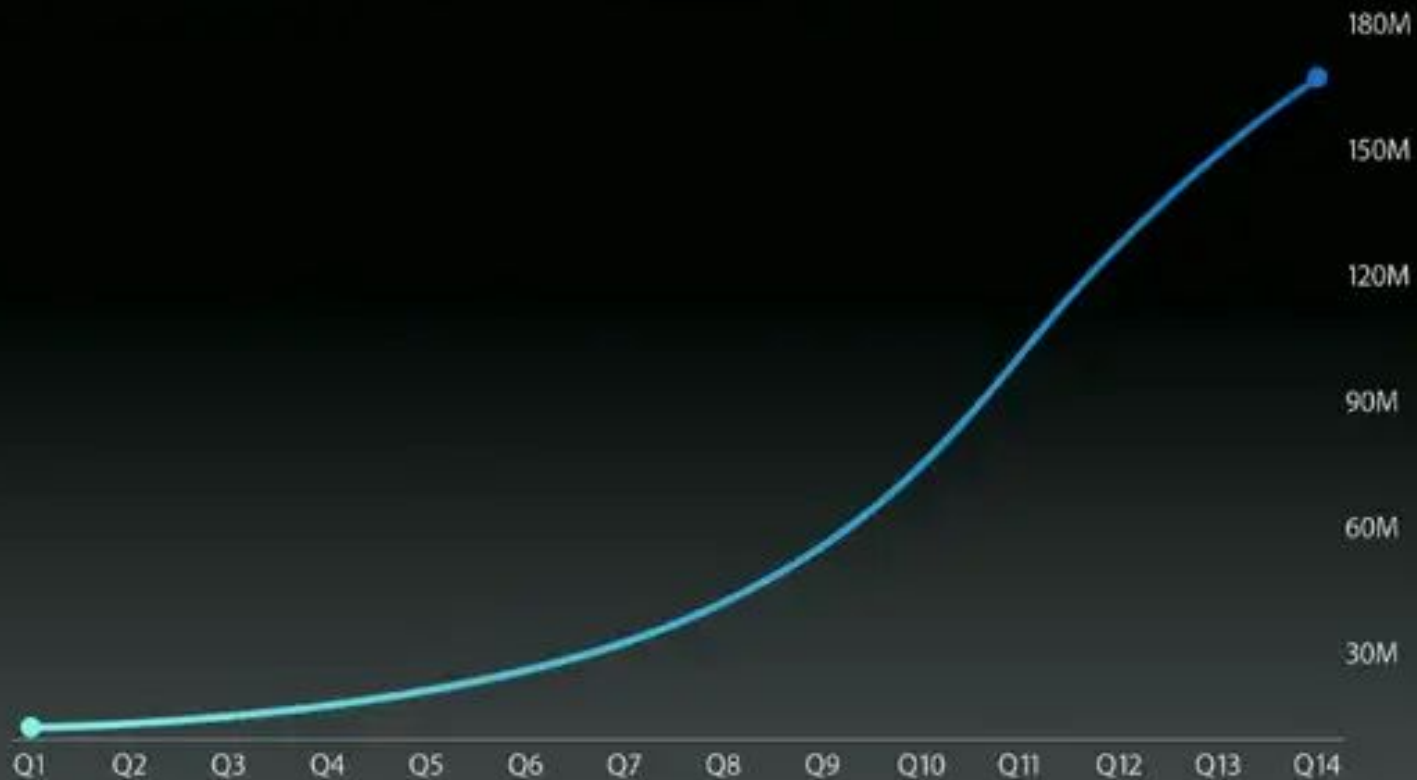
■ SE DESPLOMA EL COBRE POR EFECTO DEL CORONAVIRUS



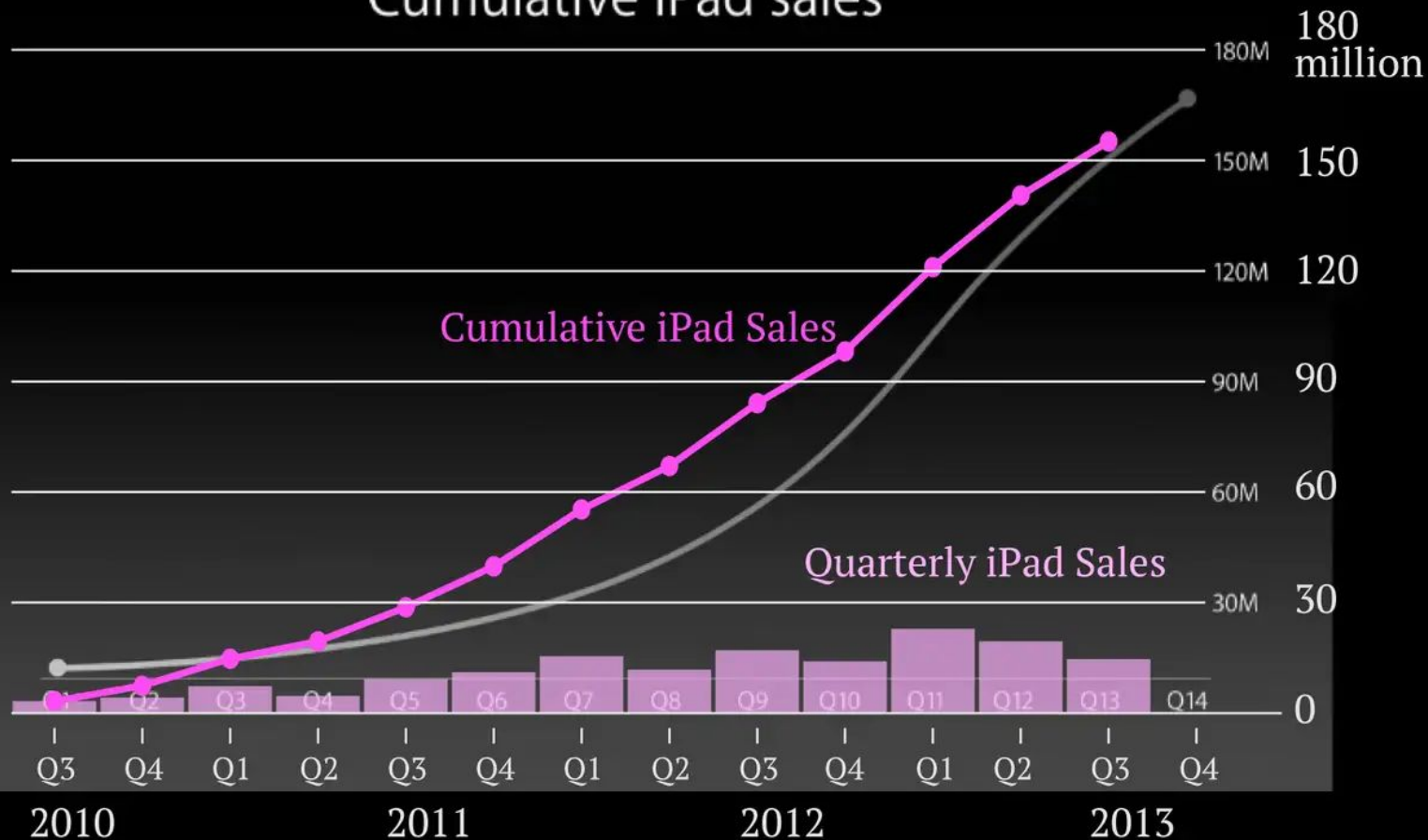
FUENTE: AGENCIAS



Cumulative iPad sales



Cumulative iPad sales





M3 family performance cores

🍏 M3 family



🍏 M2 family



15% faster

🍏 M1 family



30% faster

COVID COMMUNITY LEVELS

AS OF JUNE 30

PROVIDENCE
LOW

KENT
MEDIUM

WASHINGTON
LOW

BRISTOL
LOW

NEWPORT
LOW



COVID COMMUNITY LEVELS

AS OF JUNE 30

PROVIDENCE
LOW

KENT
MEDIUM

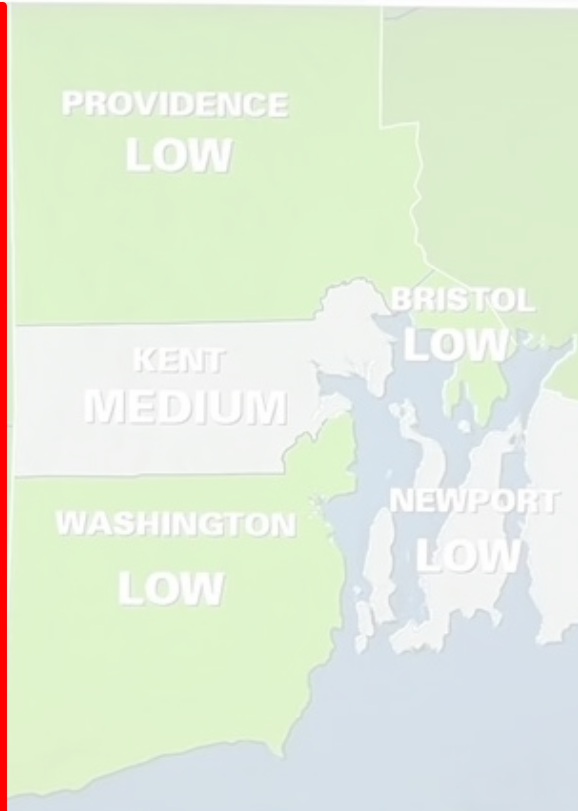
WASHINGTON
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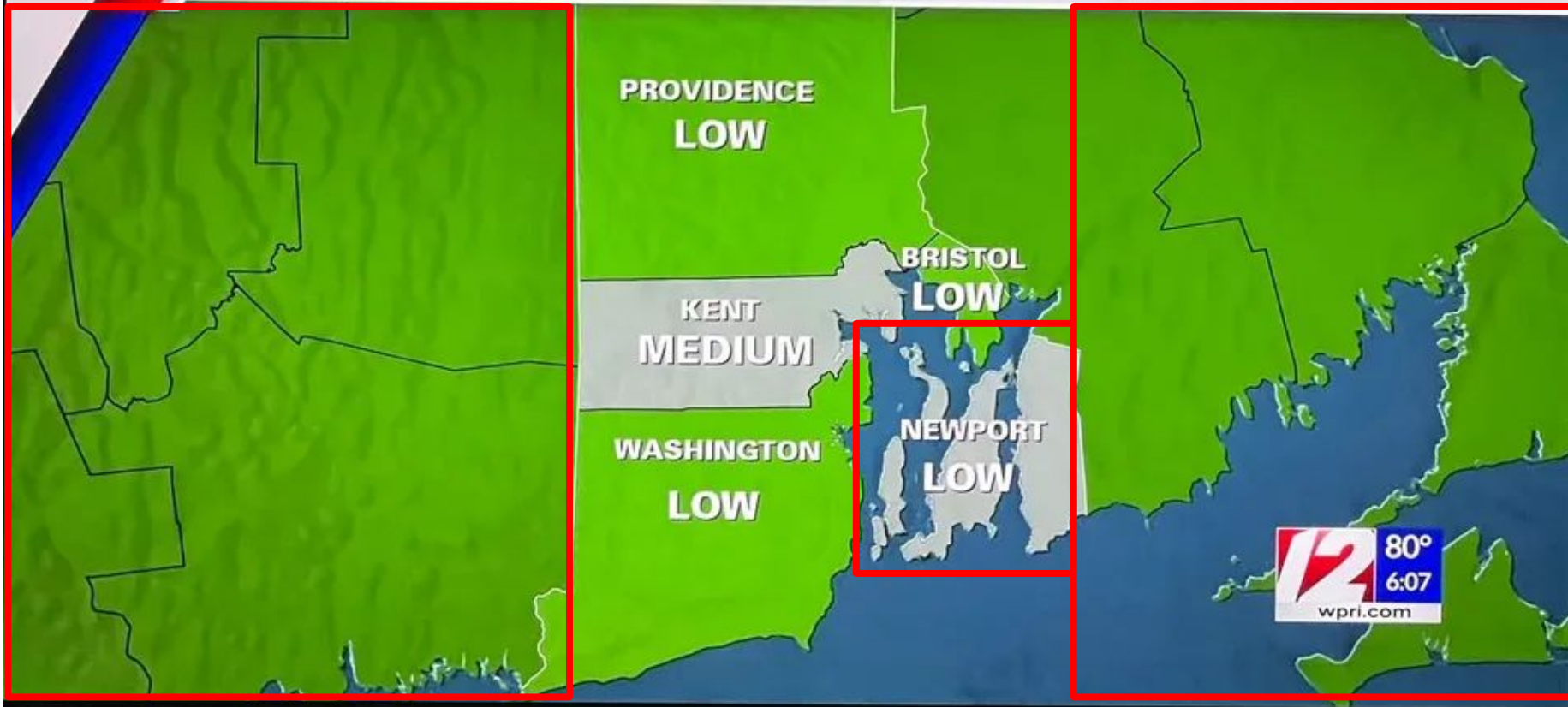
COVID COMMUNITY LEVELS

AS OF JUNE 30



COVID COMMUNITY LEVELS

AS OF JUNE 30







Objectivity of Creator

Can statistics lie?

- Statistics don't lie, people do.
- Numbers can be manipulated to skew a story
- You should check who is producing or promoting a statistic
 - Are they directly related?
 - Do they have an agenda they want to push?
 - **How** did the number come about?



When looking at visualizations...

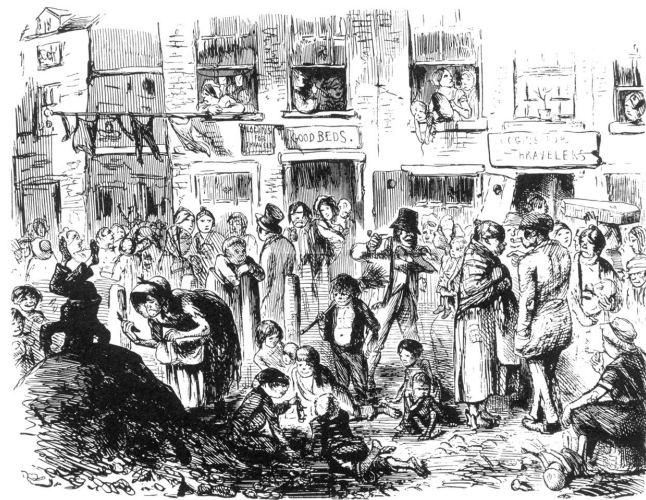
- A lot of the same rules apply!
- You want to look at
 - who the visualization is from
 - what kind of agenda they may have
 - how the numbers they are using came about
- Sometimes, visualizations will take advantage of **people's first impressions...**



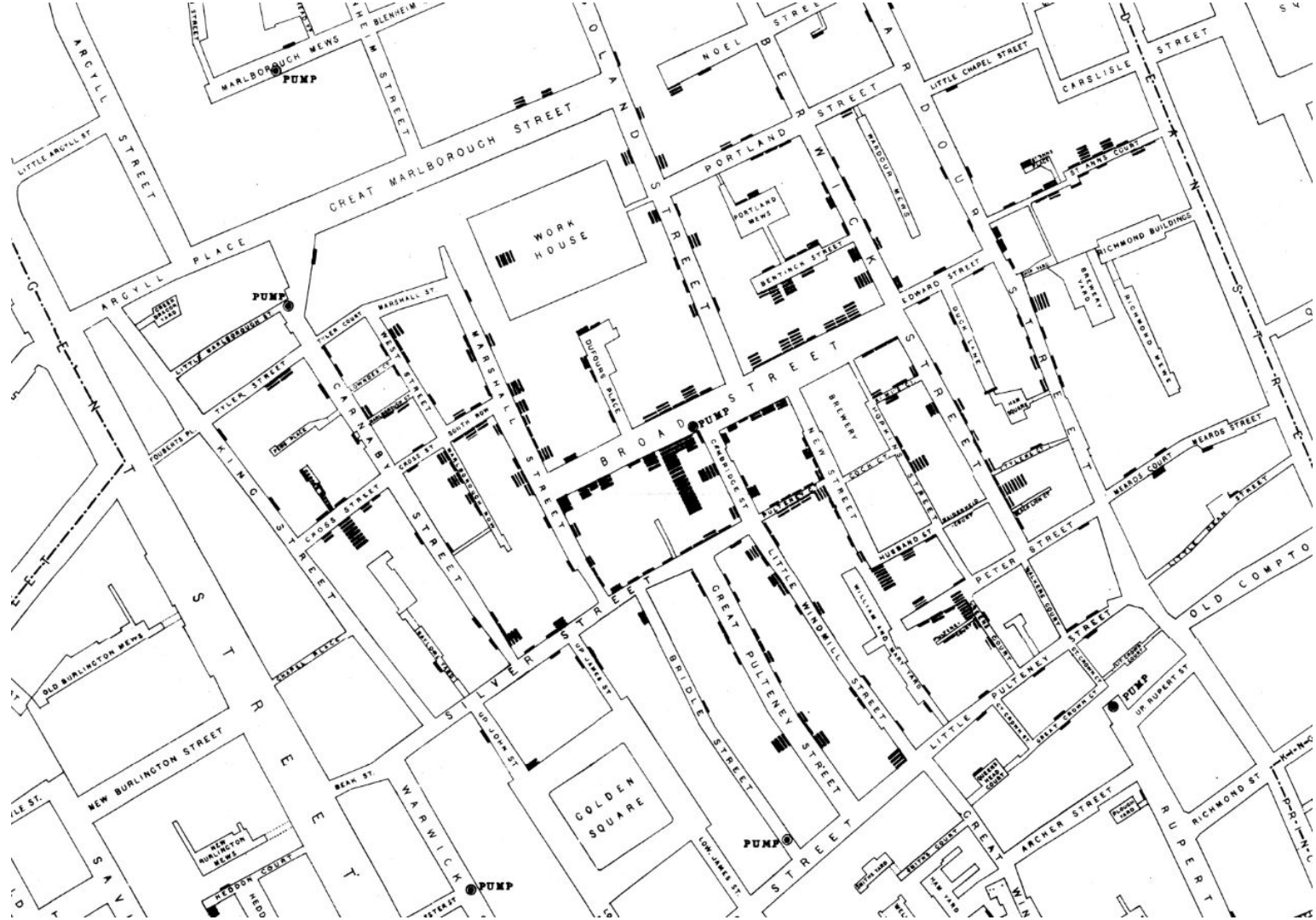
Mini-Activity

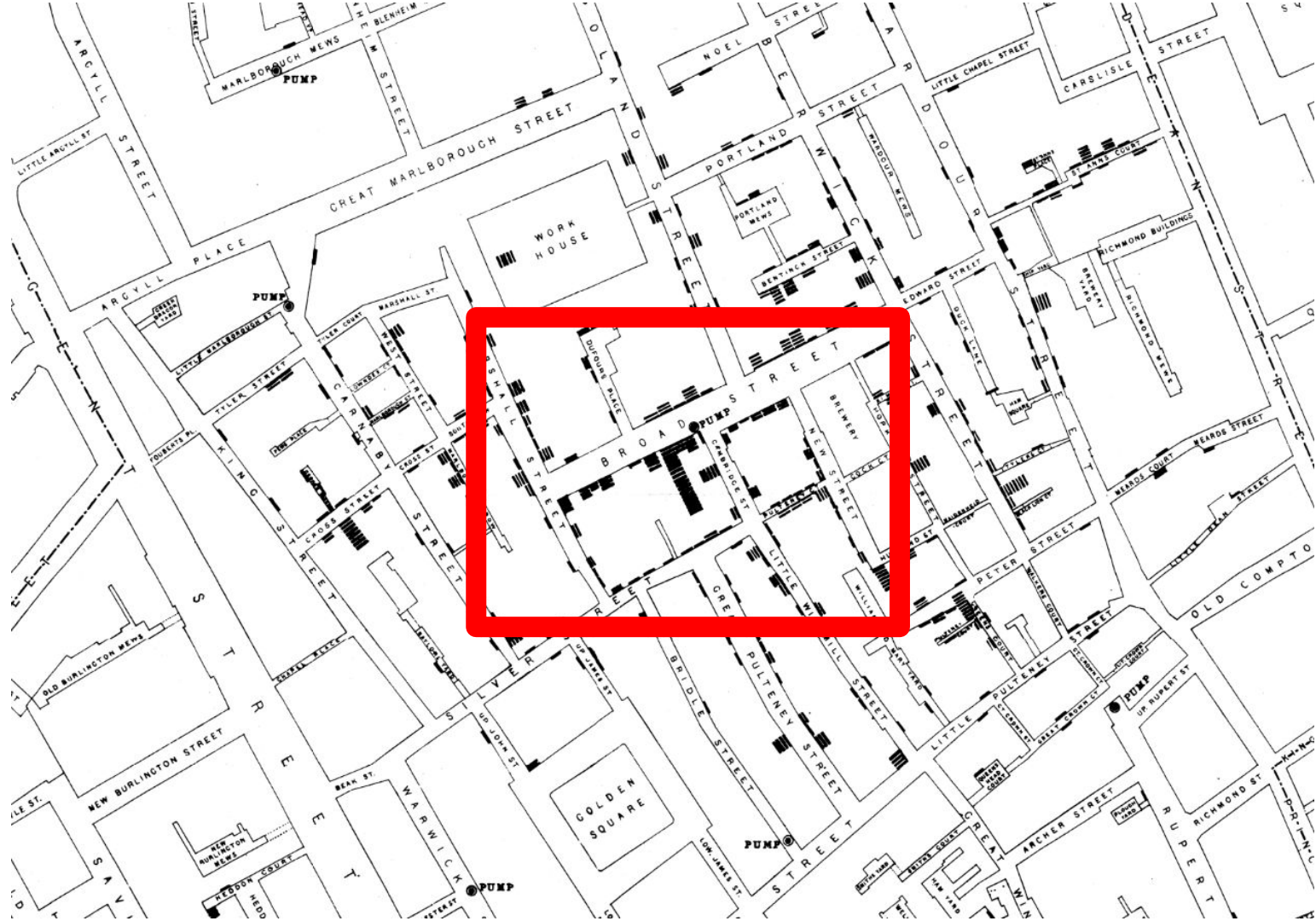
In groups of 2-3: Solve the Cholera Outbreak!

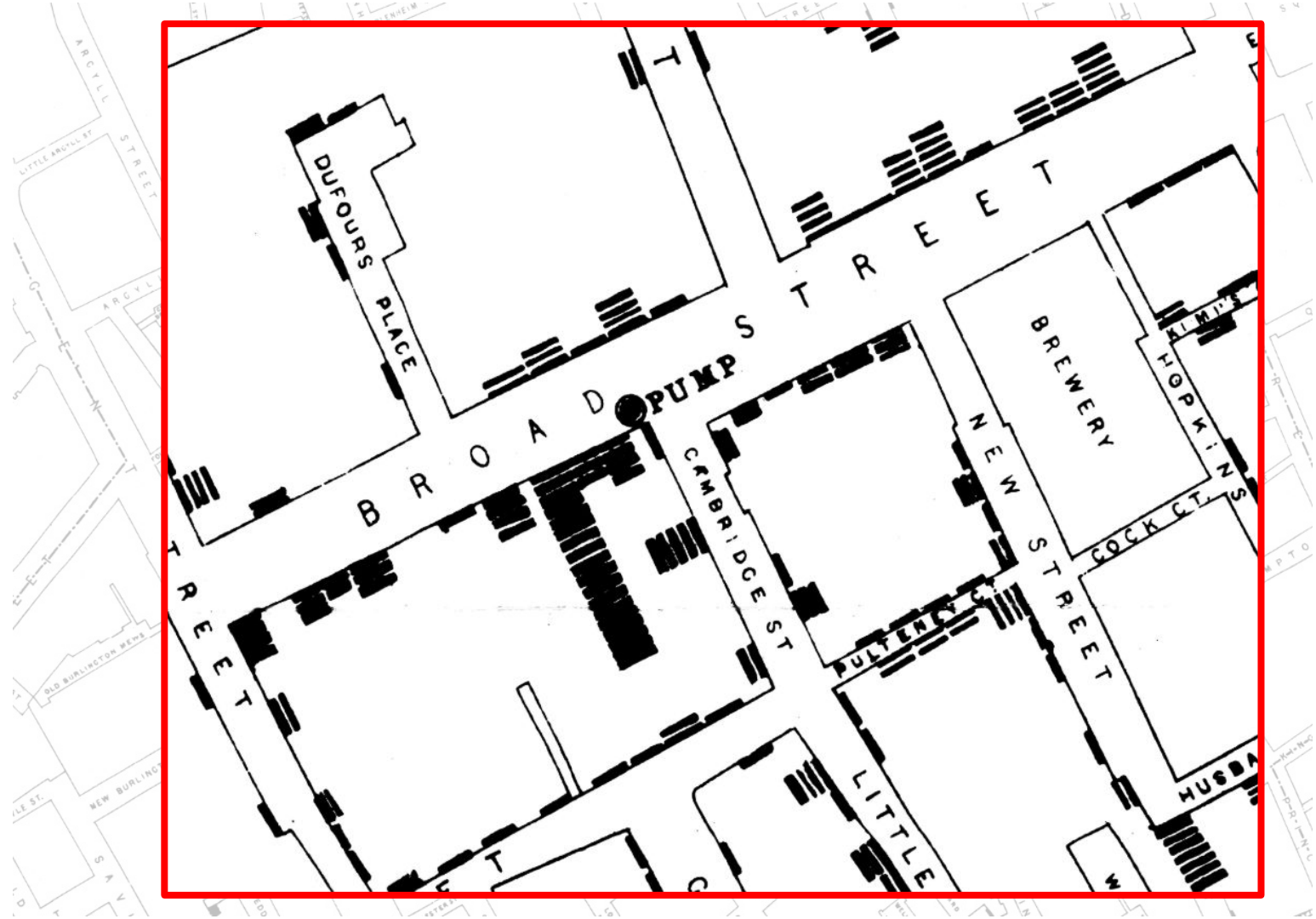
- It is **1854** (remember: no computers!) and the government has told you to find the source of the outbreak.
 - What would you do?
 - What kind of information would you want to collect?
 - What would you do with the information? Since there are no computers help organize information, how would you deal with the amount of information that you get?



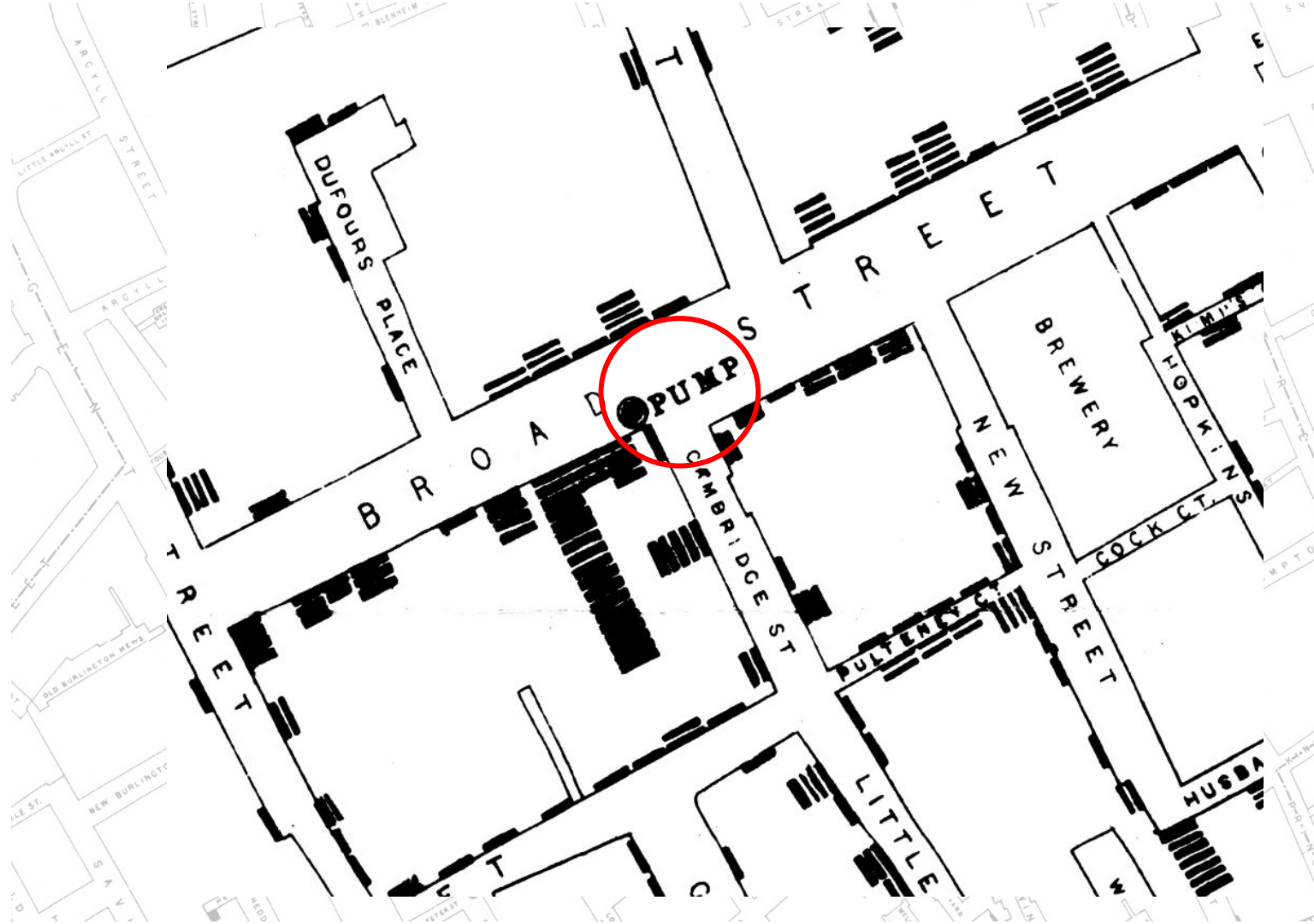
A COURT FOR KING CHOLERA.











Cholera in 1854 London

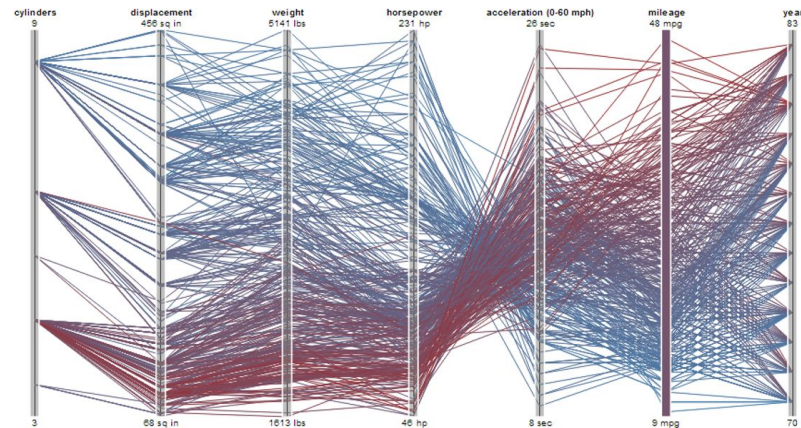
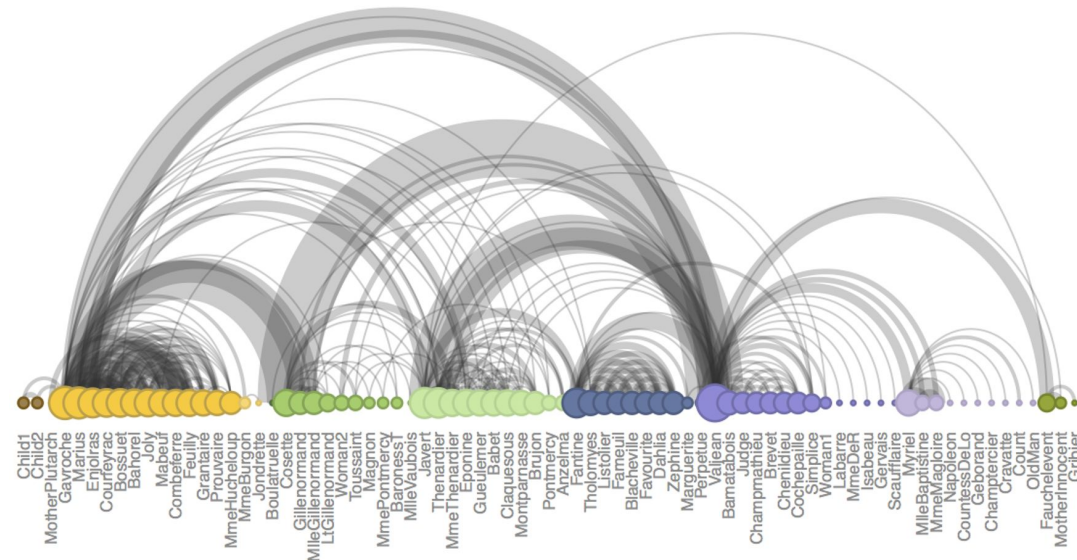
- Dr. John Snow plotted cholera deaths based on where the patient lived
- He eventually isolated the cause that the public water pump was infected
- The government took away the water pump's handle to stop people from using it; the outbreak died down





Limitations of Static Visualization

- Difficult to represent large amounts of data
- Inability to properly support the question and answer process involved in data analysis
- But how do we fix this...?



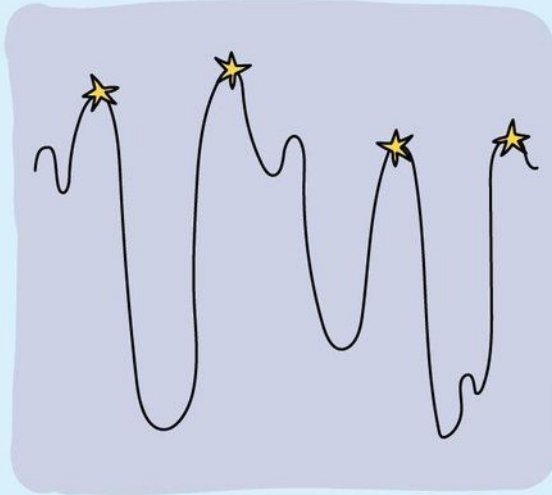
Wrap up



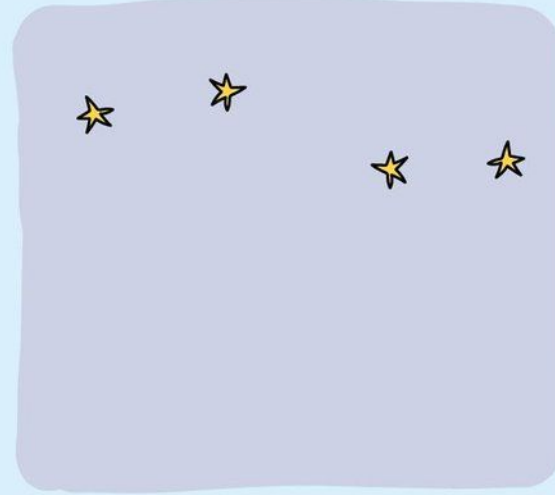
Wrap Up

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LIFE



WHAT WE SEE
ON SOCIAL MEDIA



LIZ FOSSLIE



What was your main takeaway from today's session?



Take Home Reading

Visualization: Fact or Fiction?

<https://www.business.com/articles/data-visualization-downfalls/>

Fact or Fiction: Common Downfalls of Data Visualizations

Learn how to create better visuals in your presentations that will foster trust and communication.



Written by: Sanket Shah, Senior Editor

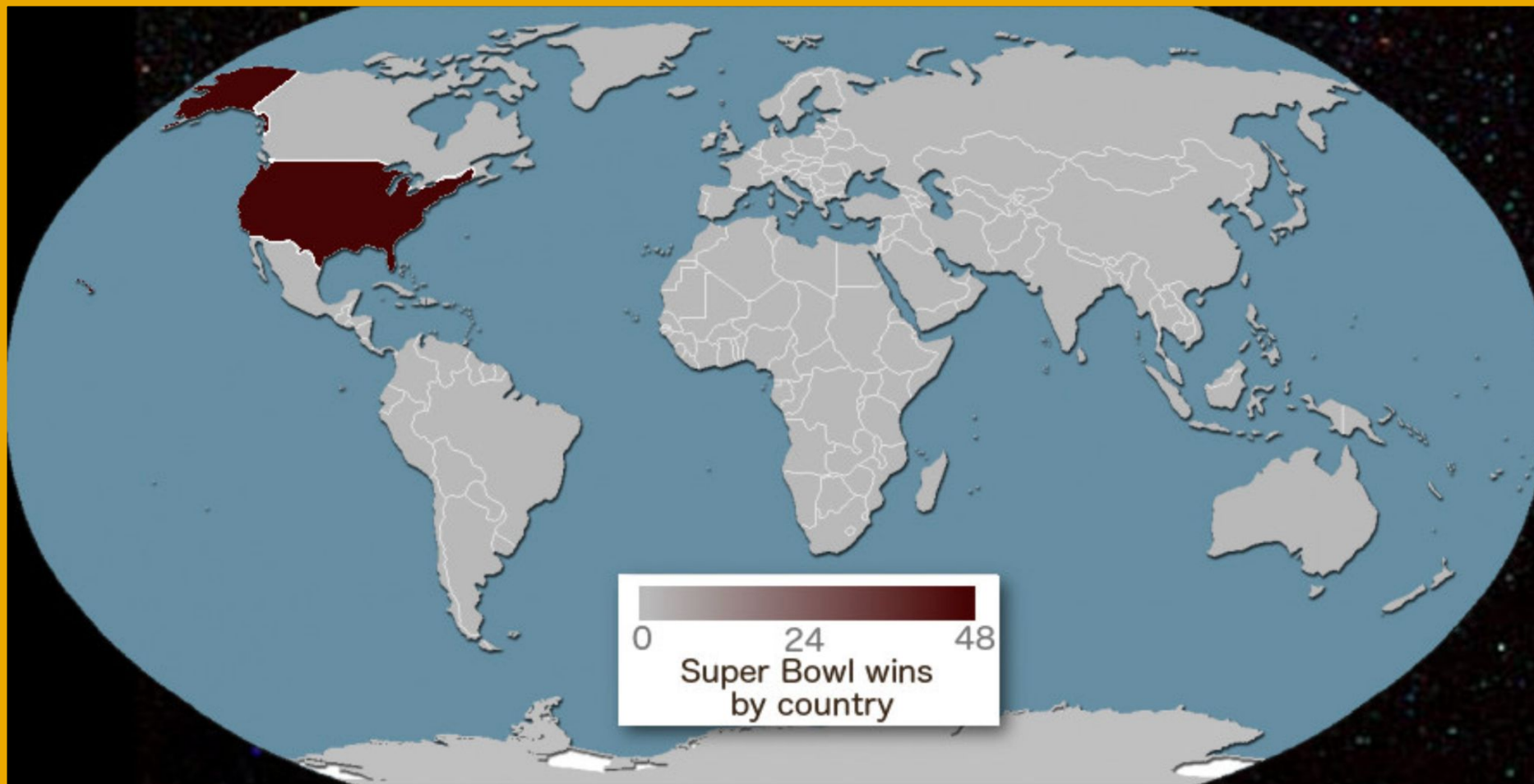


Editor Verified: Gretchen Grunburg, Senior Editor

Updated May 02, 2024

Take Home Activity

**What's wrong with
the following
visualizations?**



AMERICANS WHO HAVE TRIED MARIJUANA

CBS NEWS POLL

51%
TODAY

43%
LAST YEAR

34%
1997



Source: MOE +/- 4%

HIGH SUPPORT FOR LEGALIZING MARIJUANA

MORE THAN HALF OF AMERICANS SAY THEY'VE TRIED POT

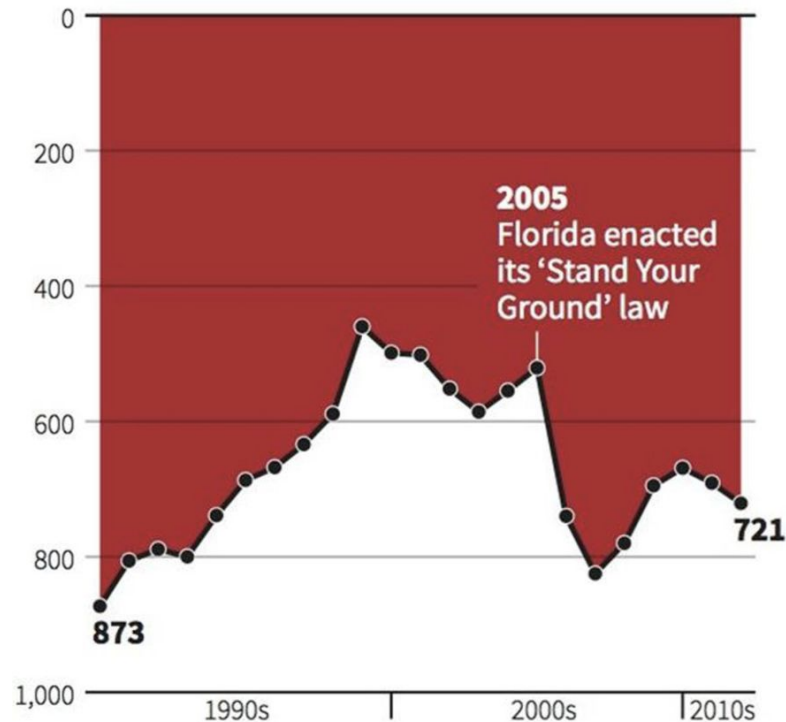


LIVE

CBSN

Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

M3 CPU performance

