

That's fake news! – role of data literacy in reducing data misrepresentation in journalism

Tasfia Ahsan

6135 Project Presentation

April 4, 2022



Agenda

- 1 BACKGROUND
- 2 PROPOSED STUDY
- 3 DISCUSSION





Agenda

1

BACKGROUND

2

PROPOSED STUDY

3

DISCUSSION





representation



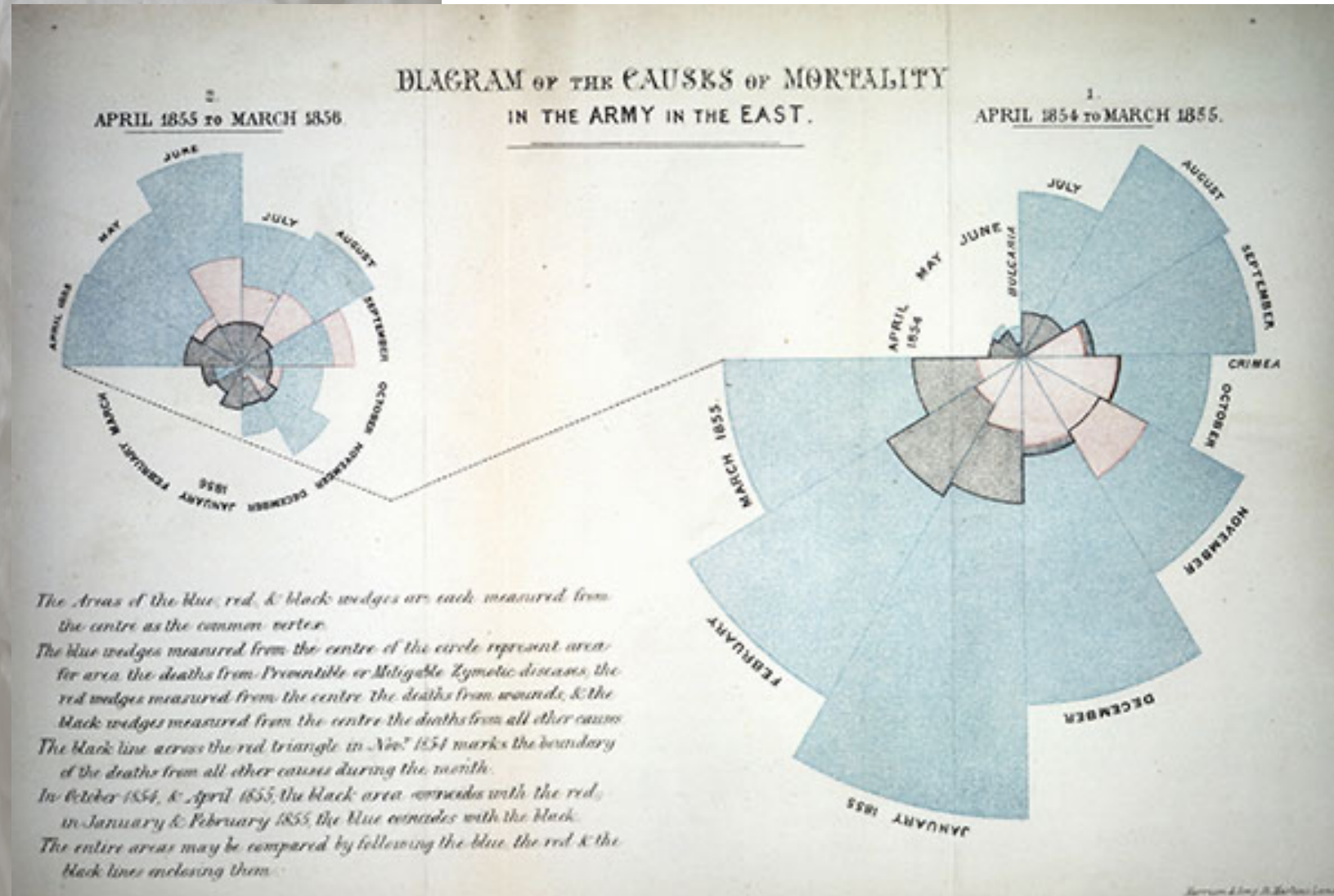
Background

- First case of data journalism, published in 1821
- Shows a table with number of pupils attending school and average annual spending



Background

- Another early instance of data journalism, published in 1858
- Florence Nightingale: Mortality of the British Army



Background

- High data misrepresentation

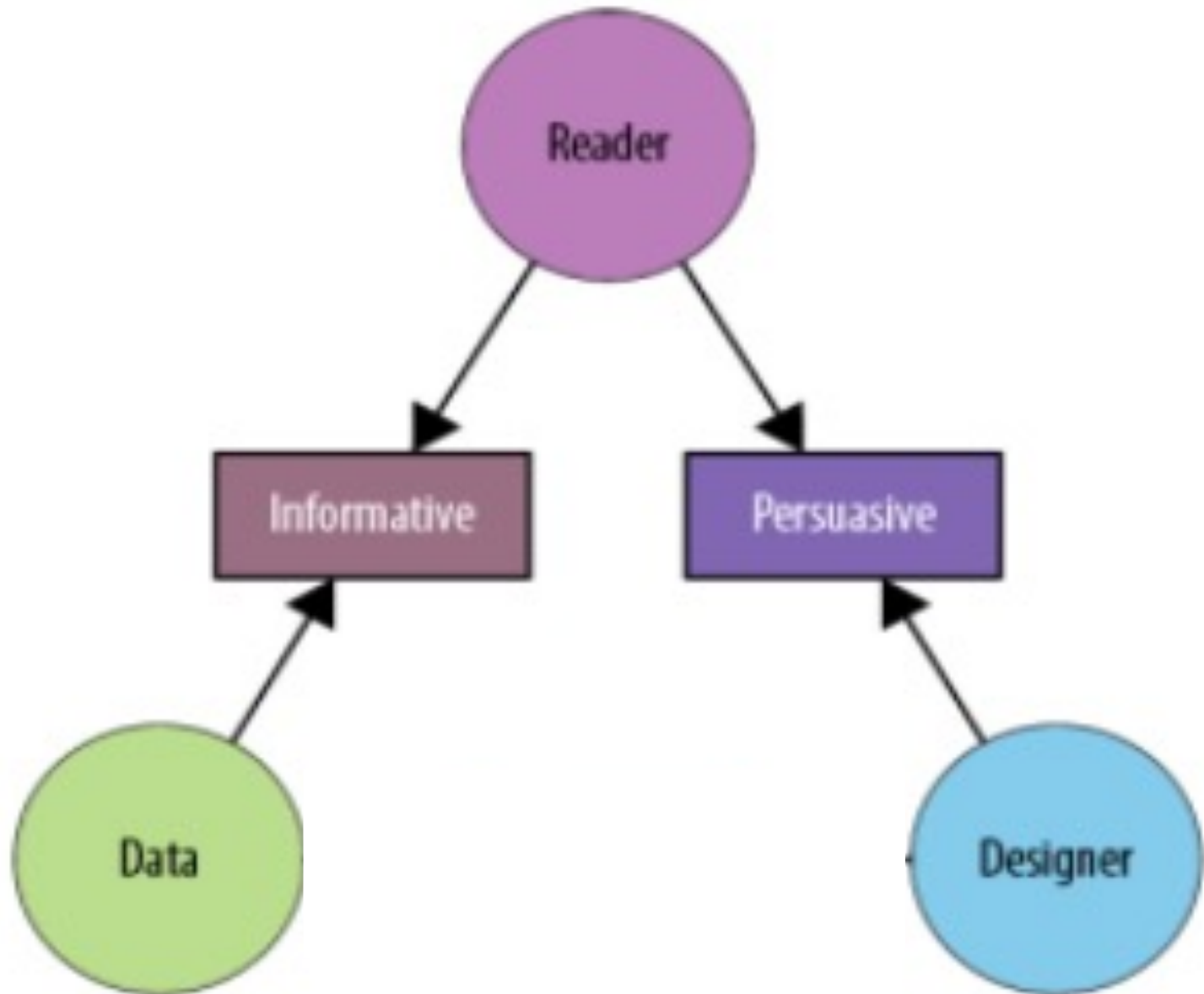
CRISIS!

distrust in journalism

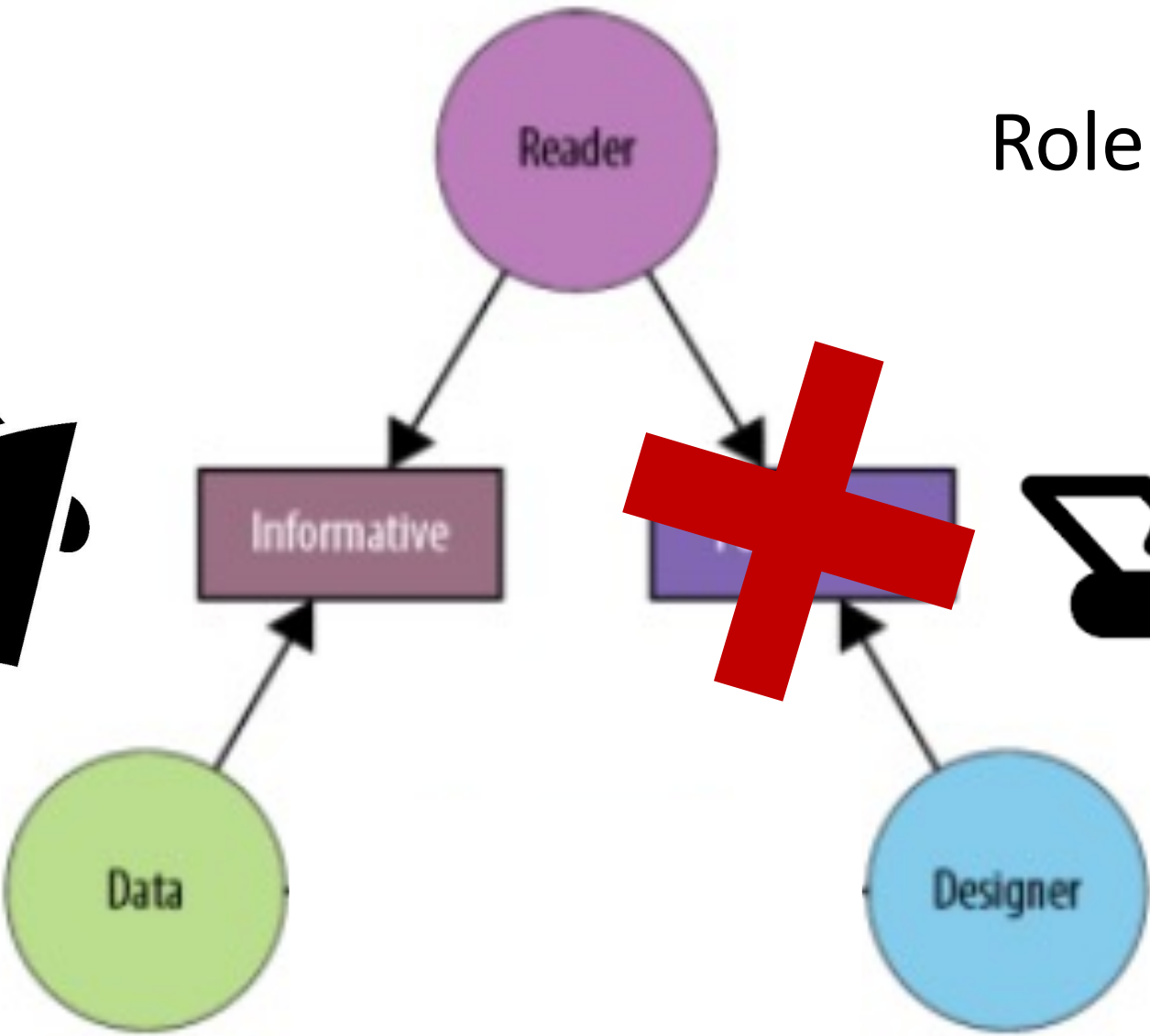


Background

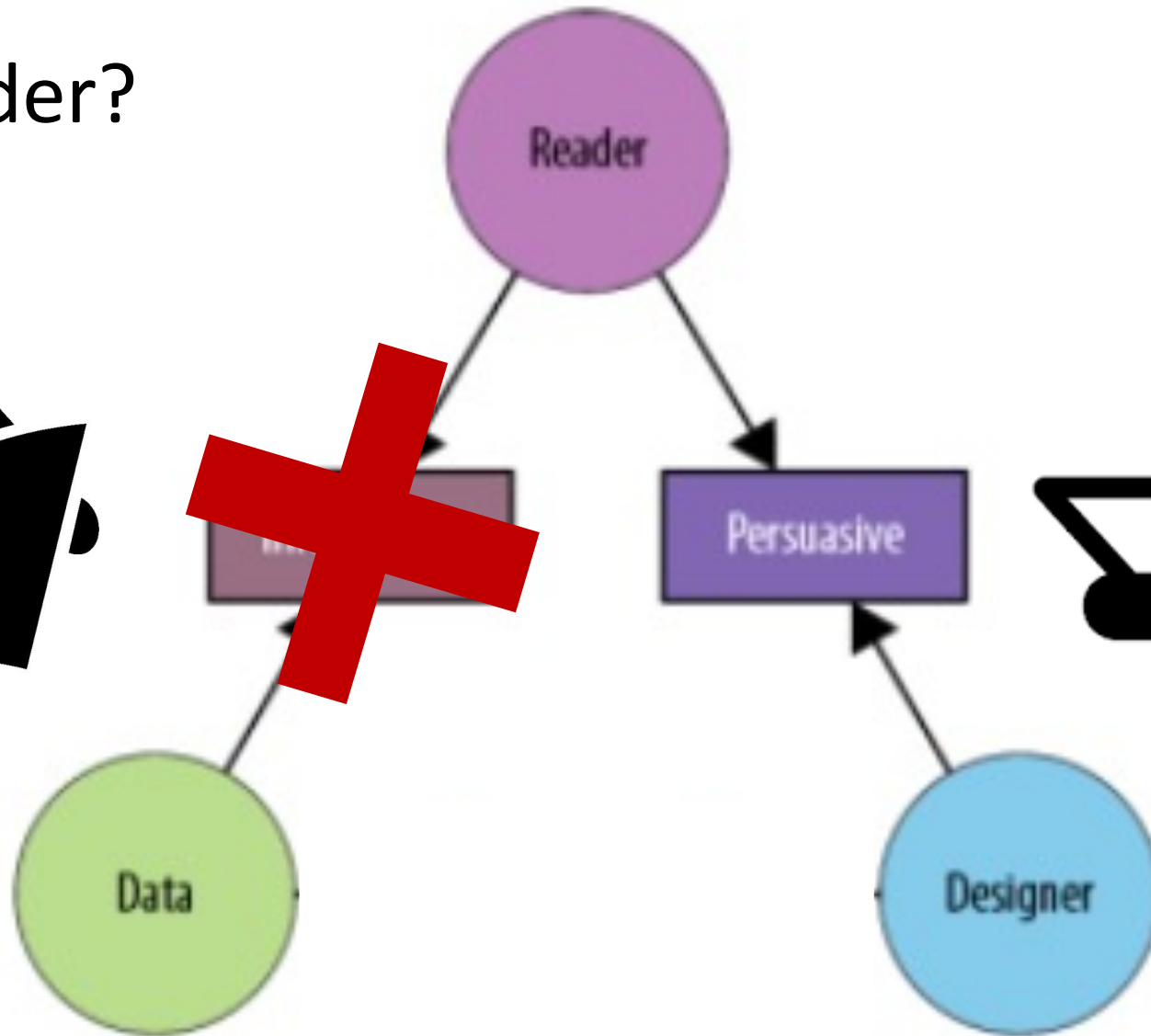
- Three key players: reader, designer, data
- Two categories of data visualization in journalism:
 - Informative
 - Persuasive

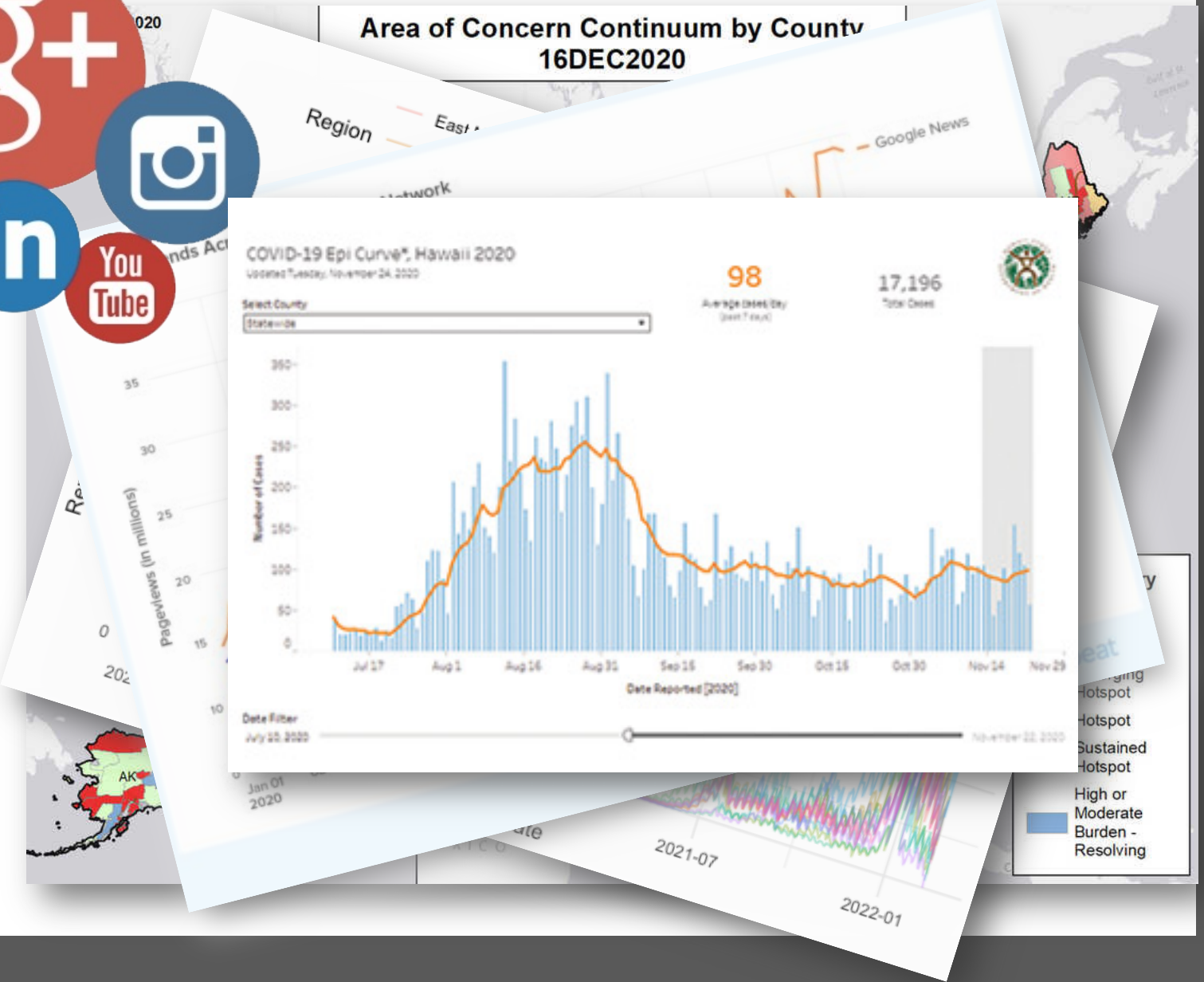


Role of designer?



Role of reader?

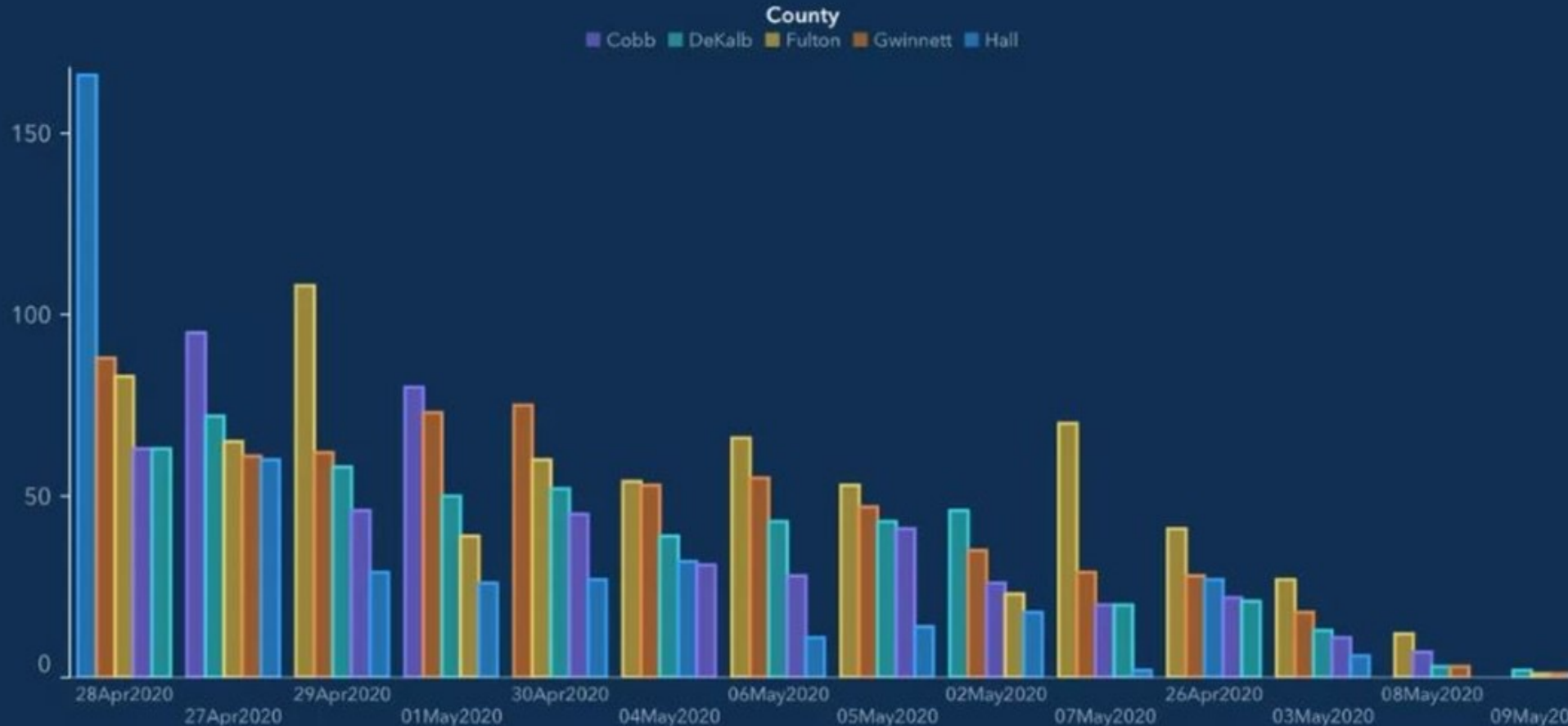




Covid-19 Examples - Case 1

Top 5 Counties with the Greatest Number of Confirmed COVID-19 Cases

The chart below represents the most impacted counties over the past 15 days and the number of cases over time. The table below also represents the number of deaths and hospitalizations in each of those impacted counties.



Covid-19 Examples - Case 2

Kansas COVID-19 7-Day Rolling Average of Daily Cases/Per 100K Population





MIS representation

Role of designer?



- warning labels
- transparency
- corrective information

Role of reader?



- Statistically literate behavior = joint activation of five interrelated knowledge bases (literacy, statistical, mathematical, context, and critical)

Data literacy?





Agenda

1

BACKGROUND

2

PROPOSED STUDY

3

DISCUSSION



OBJECTIVE

The purpose of this study is to examine the extent to which data literacy improves the ability to detect data misinformation

METHODS

PARTICIPANTS

- University students
- Two groups (STEM vs. non STEM majors)



METHODS

TASK

- presented with examples of normal and misleading graphs and prompted to answer a series of questions on an assessment
- sample questions:

what does this graph show?

What conclusion can you draw from this graph that makes sense?

What conclusion can you draw from this graph that doesn't make much sense?



METHODS

ANALYSIS

- Psychometric test
- score each response as:
 - correct (+1)
 - incorrect (0)
 - missing (0)
- sum up score for main outcome variable





Agenda

1

BACKGROUND

2

PROPOSED STUDY

3

DISCUSSION



SUMMARY

- widespread misrepresentations and misinterpretations of data leading to public distrust of journalism

Designer



- warning labels
- transparency
- corrective information

Reader



Proposed: improve statistical literacy among general public

IMPLICATION

Benefits of data literacy:



Early detection of misinformation



Slows spread of misinformation



Shifts the power back to the public

Future Direction



Course
Planning



Journalism
training



Thank you for listening