

# Incorporating Anti-Racist Work into Statistics Courses

Jessica Logan Ph.D.  
The Ohio State University  
@Jarlogan

Poster Presentation for the US Conference on Teaching of Statistics

# Statistics and Racism

- Three of the founders of modern statistics were heavily involved in the eugenics movement:
  - Sir Francis Galton, developed correlation and regression
    - Founded the Eugenics Record Office.
  - Ronald Fisher, as in the Fisher's Information; the F-test
    - Founded the Cambridge Eugenics Society.
  - Karl Pearson, as in the Pearson Correlation Coefficient
    - Founded the journal *Annals of Eugenics*.
- Unlike other fields, with statistics it was racist ideals that drove some of these major statistical innovations.



In June, graffiti supporting calls for the University of Cambridge to remove a stained glass window memorializing statistician Ronald Fisher, a supporter of eugenics, appeared on a campus building. The university later removed the Fisher window. AP IMAGES

Amid protests against racism, scientists move to strip offensive names from journals, prizes, and more

By Eli Cahan | Jul. 2, 2020, 6:05 PM

# Statistics and Racism

- They took on questions of differences between racial groups and presented findings as just numbers; just facts.
  - Describe themselves and their work as completely impartial.
  - E.g., Pearson: “We rejoice in numbers and figures for their own sake... to find out the truth that is in them.”
- This set the false precedent that quantitative data are facts
  - Quantitative analyses are uncovering some truth
- The first step in the process of breaking down this idea is acknowledging the history.
  - Acknowledgement of history → learning from history

# In my Classes: Awareness as a Through Line

- I introduce this as part of my introductory unit on quantitative data.
- Students complete readings, then we have a discussion about the white supremacist history.
  - I bring the discussion around to the idea of *context*.
- This framing allows us to return to the concept throughout the course.

For Example:

# What are quantitative data:

- A quote: “75% of people rated Donald Trump’s 2020 State of the Union address as ‘great’ or ‘historic’!”
- What conclusions might you draw?
  - His speech was high quality.
  - People thought the speech was really great.
  - People really found his speech convincing.
  - Other things?

# What are quantitative data:

- A quote: “75% of people rated Donald Trump’s 2020 State of the Union address as ‘great’ or ‘historic’!”
- Now take a look at the survey:
- How does seeing this survey change your conclusions?

## Trump’s State of the Union polled well ... because Republicans watched it

State of the Union audiences generally skew toward the president’s party.

By Emily Stewart | emily.stewart@vox.com | Feb 6, 2019, 10:30am EST



## Official State of the Union Approval Poll

1. How would you rate President Trump's State of the Union Address?

- Historic
- Great
- Good

2. Do you believe President Trump properly addressed the CPISIS at

# Summary

- It's easy to think that quantitative data are “facts”.
  - Quantitative data are subjective
- Poor quality data and shallow thinking can lead to incorrect conclusions
  - e.g., There are proportionally more incarcerated Black men than white men, therefore Black men are more violent.
- Data don't know where they come from.
  - Particularly with statistics, which summarizes numbers in complex ways.

*You have the responsibility to be the interpreter.*

# Suggested discussion prompts

- Find a questionable use of statistics as “just facts” in the news or in your social media feed. How did they make it sound like “just facts”? How was it interpreted?
- Is statistics racist? Why or why not?
- Consider the term “prisoner”. Compare that with “incarcerated person”. In what way does changing that term shift the inferences you (or a reader) might draw?
- Early statisticians compared the frequency of “undesirable” traits between races, and (falsely) described their results as objective. What are some ways that this analysis could have been subjective?



# Thank You!

Jessica Logan

[Logan.251@osu.edu](mailto:Logan.251@osu.edu)

## Resources and Suggested Readings for Students

- How Eugenics Shaped Statistics (Clayton, 2020)
  - To talk about the history of statistical significance and read the racist words of the developers
  - <https://nautil.us/issue/92/frontiers/how-eugenics-shaped-statistics>
- Is Statistics Racist (Cleather, 2020)
  - <https://medium.com/swlh/is-statistics-racist-59cd4ddb5fa9>
- Eugenics and the Ethics of Statistical Analysis (Levy, 2019)
  - <http://gppreview.com/2019/12/16/eugenics-ethics-statistical-analysis/>