Visualizing data with R and RStudio

ME 447/547
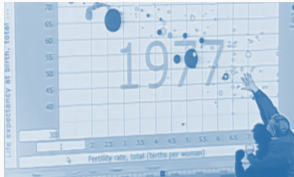
Richard Layton

March 2020

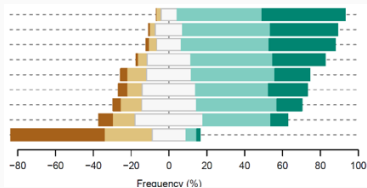Rose-Hulman Institute of Technology

Rhetoric
(Mon)

Means
(T/W)
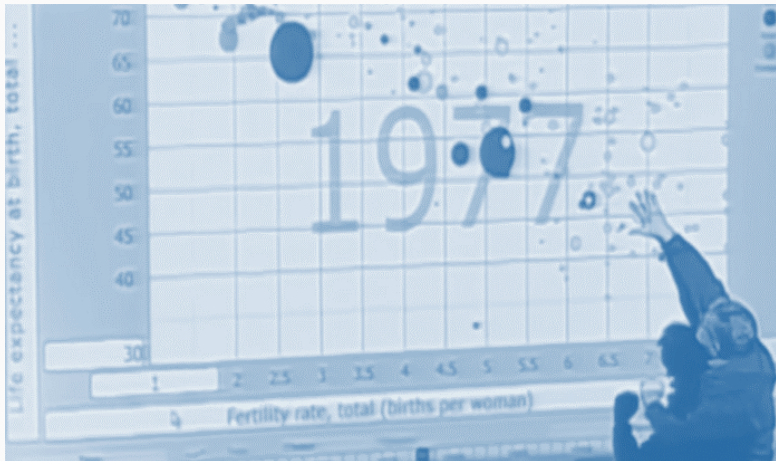

Repertoire
(Thu)

Visual rhetoric

Designers shape information visually for rhetorical ends

Hans Rosling 2006 TED Talk

How did Hans shape the information visually?

What were his rhetorical goals?

Image: TED2006
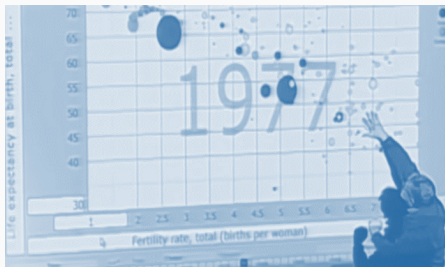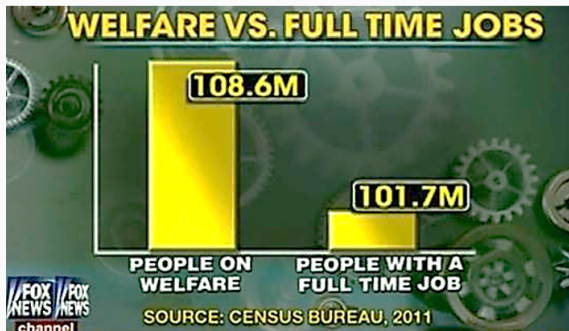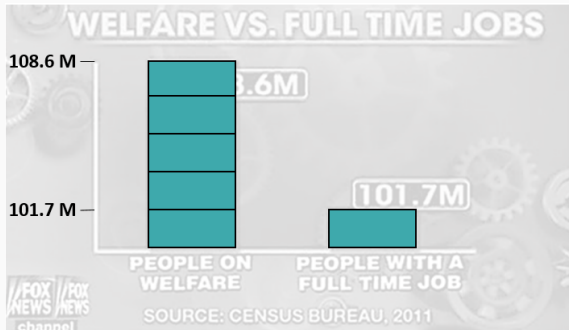
The graph argues what visual lie?

The bar chart missing zero is an easy lie to identify

Visually, one group is 5 times a large as the other group.

The argument also contains a **verbal** (or quantitative) **lie**.

Census data have been manipulated to create a false comparison.

WELFARE VS. FULL TIME JOBS

108.6M

101.7M

PEOPLE ON WELFARE

PEOPLE WITH A FULL TIME JOB

SOURCE: CENSUS BUREAU, 2011

FOX NEWS channel

Consider the argument

The author lied visually and quantitatively.

What were his or her rhetorical goals?
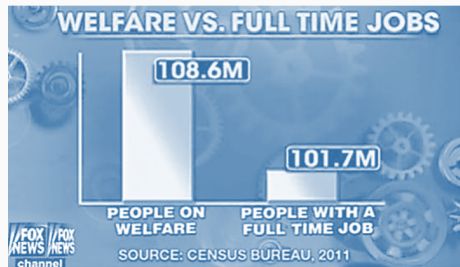
In data visualization, journalism meets engineering — Alberto Cairo

journalism increase knowledge among the public while minimizing harmful side effects

engineering give information a visual shape—model it, sculpt it—effectively and efficiently

(Cairo, 2014)

Syllabus & calendar highlights

data
software
visual rhetoric
graph repertoire
portfolio

calendar

🐦 suggested reading in *R for Data Science* (Wickham and Grolemund, 2017)
📖 e-copy on Moodle, with permission
📄 paper reprint, with permission
📖 blog reading

| w	d	agenda & assignments	milestones
1	M	Visual rhetoric [slides] Syllabus highlights (hw) Syllabus (hw) About the course (hw) 📄 Doumont (2009) Designing the graph	
	T	Data structure and graph design [slides] (hw) Complete the data structure worksheets (hw) Install software	
	W lab	Software studio R basics	Software setup c

We'll examine the Calendar in a moment.

`https://github.com/graphdr/visualizing-data`

visualizing data

447 / 547 Visualizing Data. An introductory course by Richard Layton at Rose-Hulman Institute of Technology.

Institutions using the CATME system
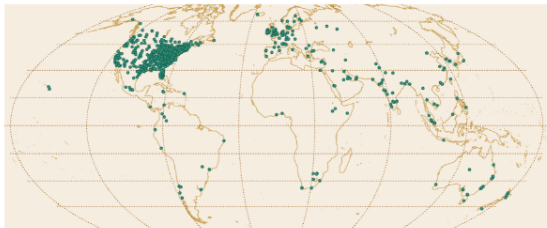
R. Layton. Data from www.catme.org

Introduction

- About the course
- Syllabus
- License

References

Cairo A (2014) *Ethical infographics.* The Investigative Reporters and Editors Journal, Spring 2014
http://tinyurl.com/y67ye5fy