

Lecture 1: A brief history of data visualization

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Earliest graphics

Began with geographic maps: colors on clay tablets (5000 years ago)

11th century China: Map of the Tracks of Yu The Great

- ▶ outline very accurate
- ▶ high precision of rivers
- ▶ scale is almost exact
- ▶ carved into 3-ft wide stone tablet

Tracks of Yu the Great

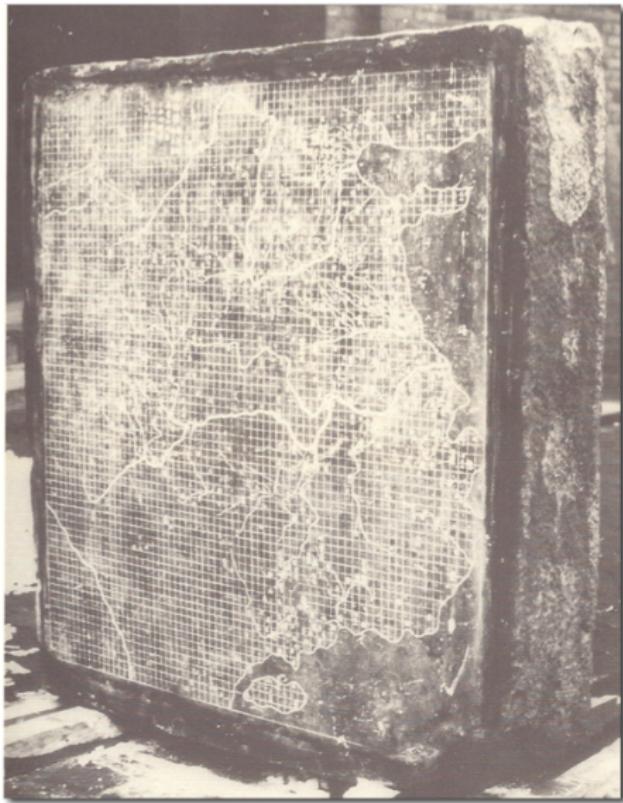


Figure 1: What do we see?

Tracks of Yu the Great

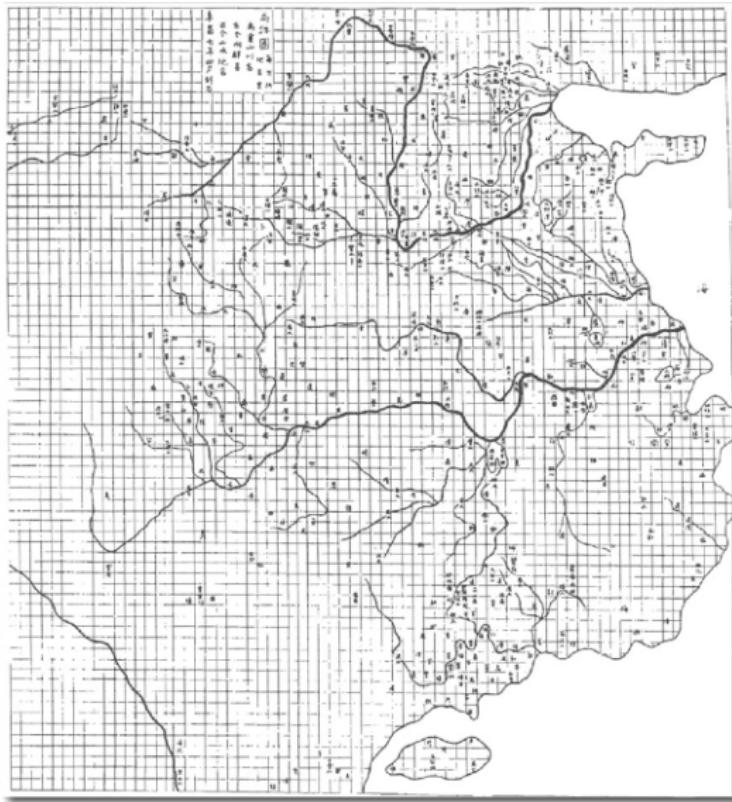


Figure 2: What do we see?

La Verdadera Longitud por Mar y Toledo

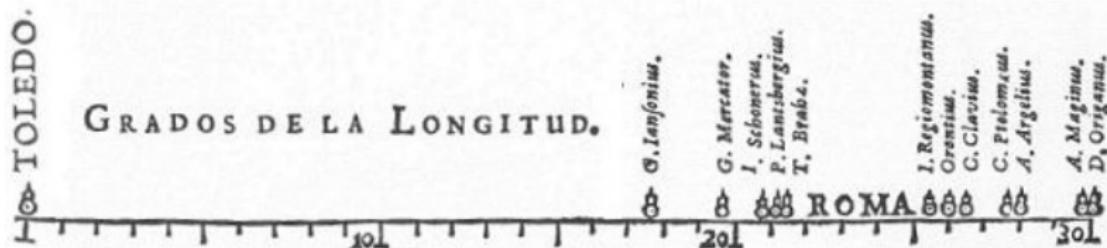


Figure 3: Estimates of distance from Rome to Toledo

Minard – Exports of French Wine

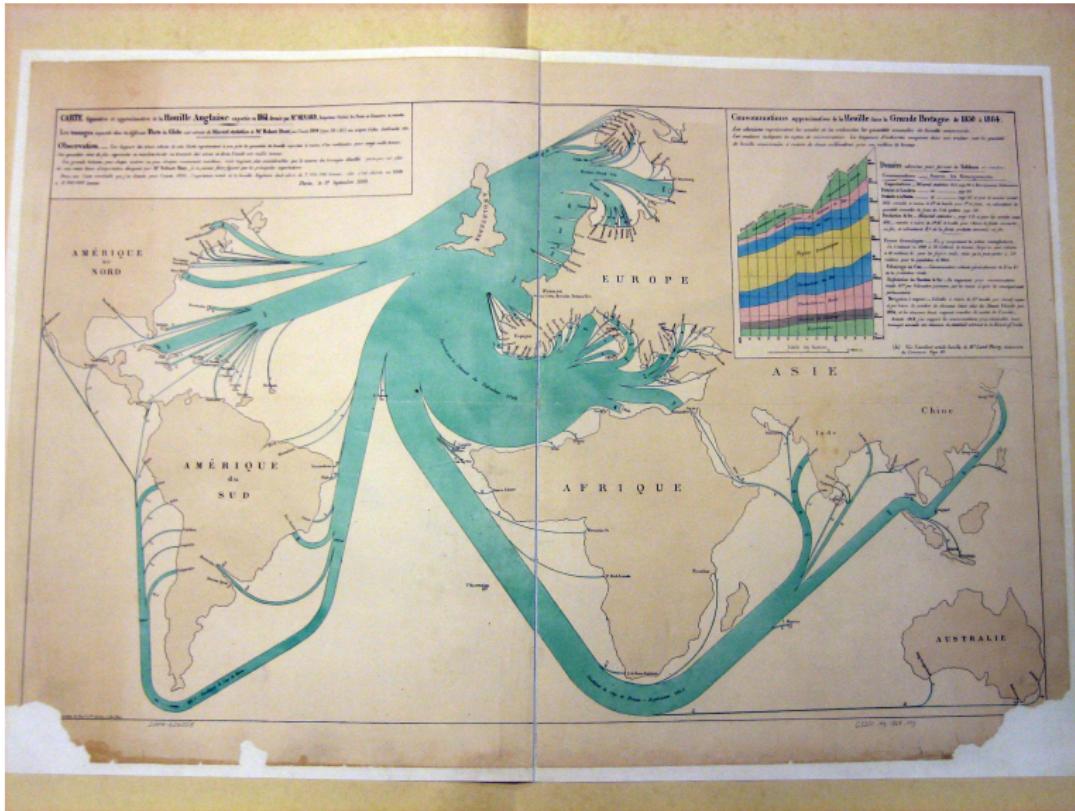
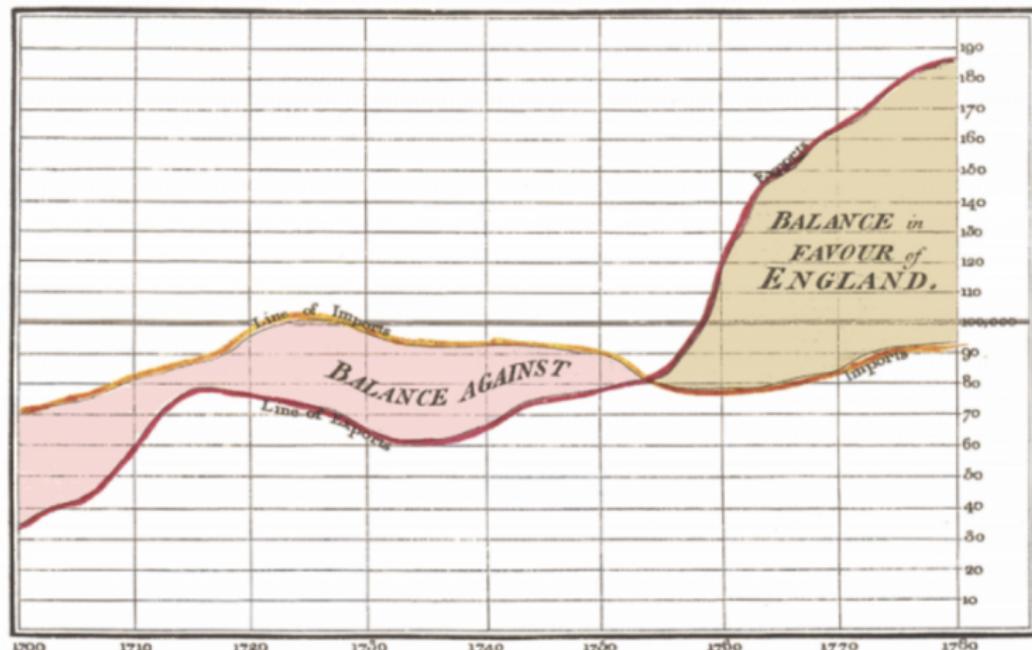


Figure 4: Minard – Exports of French Wine

England's Imports and Exports

Exports and Imports to and from DENMARK & NORWAY from 1700 to 1780.



The Bottom line is divided into Years, the Right hand line into £10,000 each.

Published as the Act directs, 1st May 1786, by W^m Playfair.

No. 60, Strand, London.

Figure 5: England's Imports and Exports

Cholera Mapping

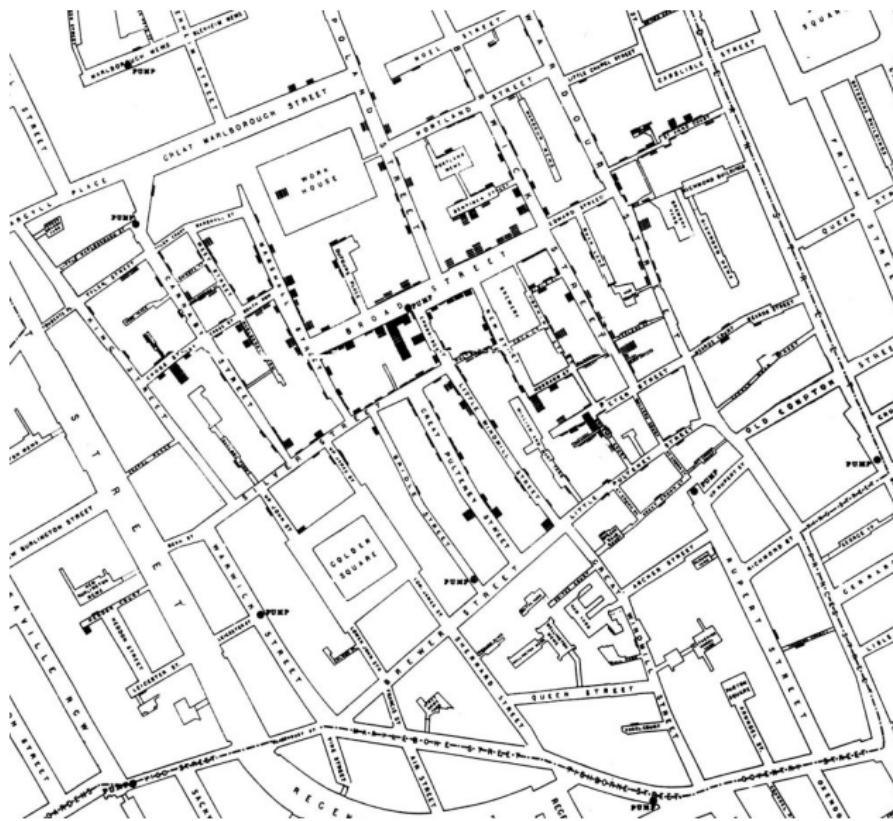


Figure 6: Cholera Mapping

Jon Snow



You know nothing (about cholera),
JOHN SNOW

Figure 7: Jon Snow

Most famous data viz

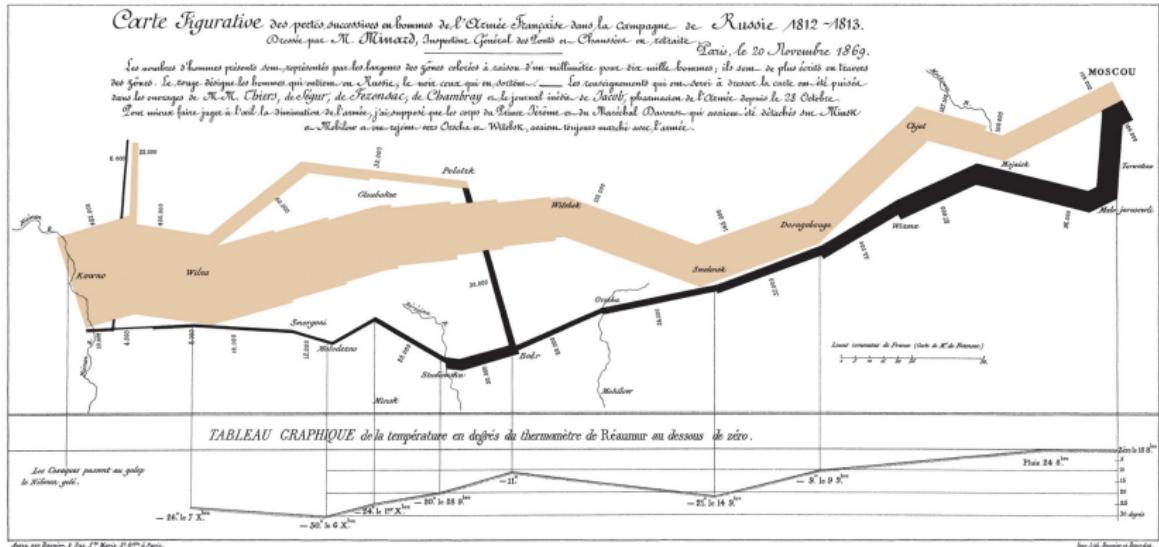


Figure 8: Napoleons March To Moscow

Modern day charts

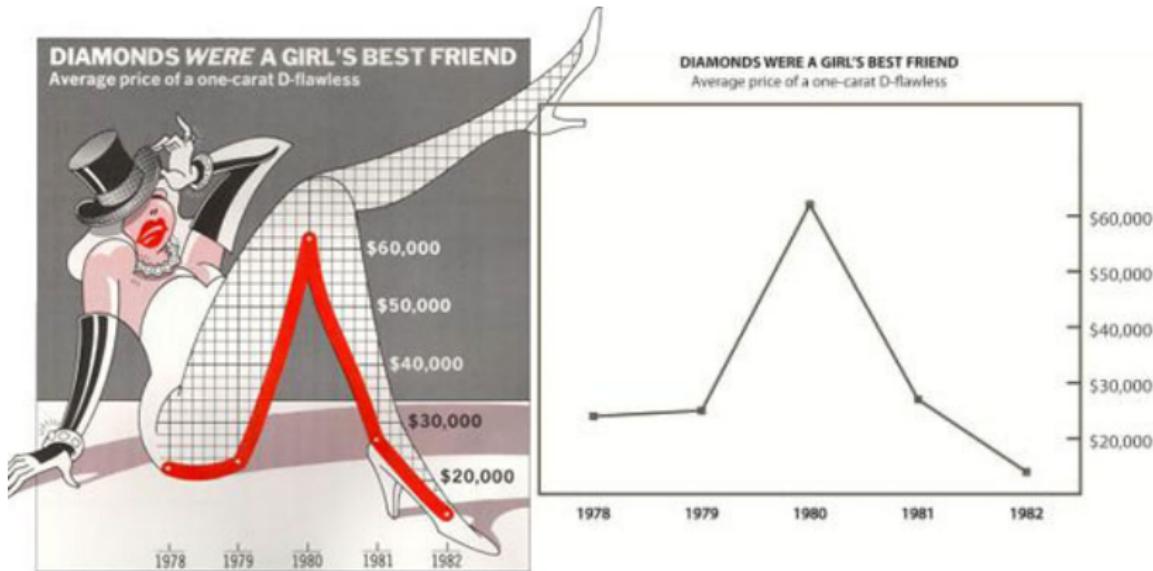
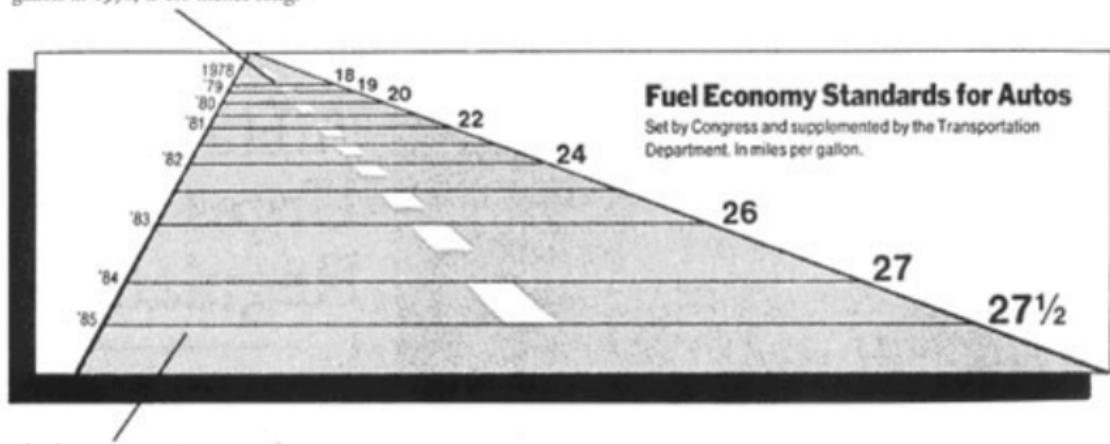


Figure 9: Diamonds Were A Girl's Best Friend

Modern day charts

This line, representing 18 miles per gallon in 1978, is 0.6 inches long.



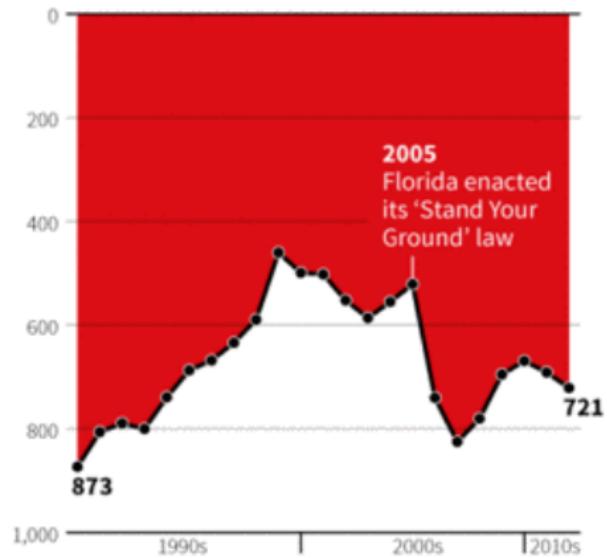
This line, representing 27.5 miles per gallon in 1985, is 5.3 inches long.

Figure 10: Fuel Economy

Modern day charts

Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

REUTERS

Figure 11: Gun Deaths in Florida

Modern day charts

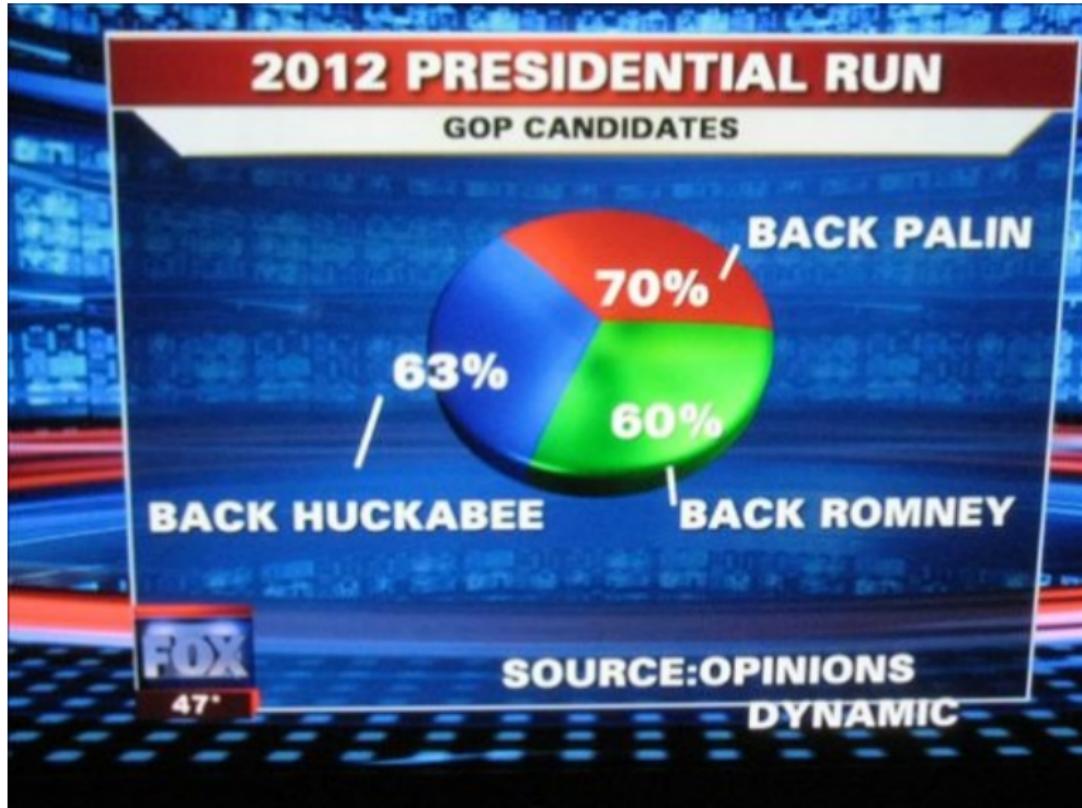


Figure 12: Presidential Candidates

Modern day charts

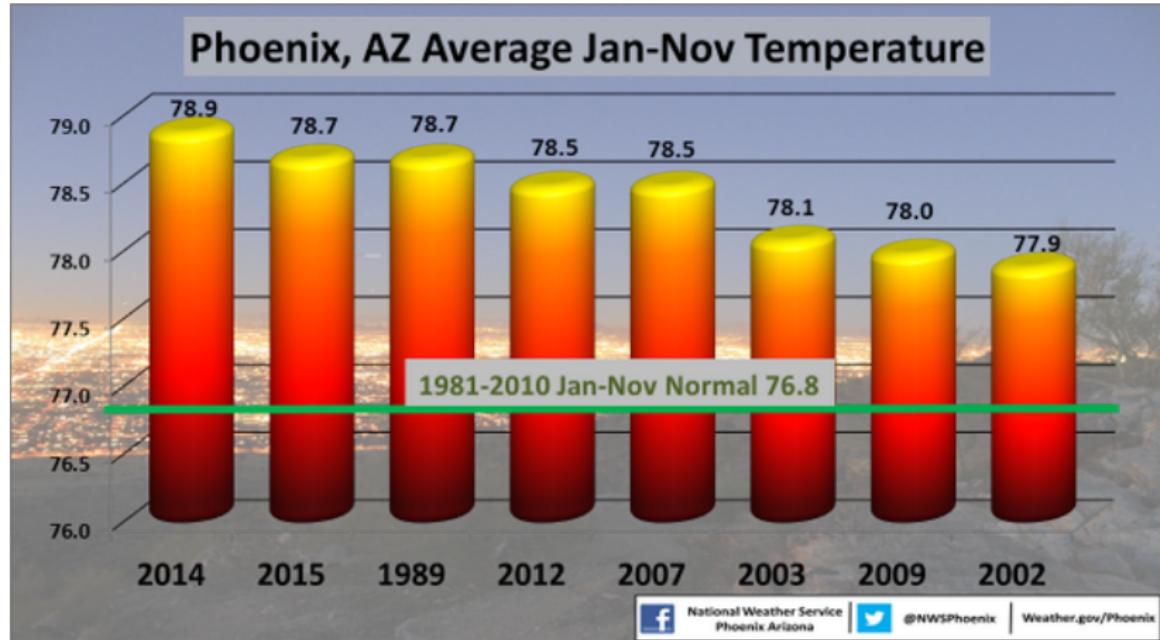


Figure 13: Temperature in Arizona

Modern day charts

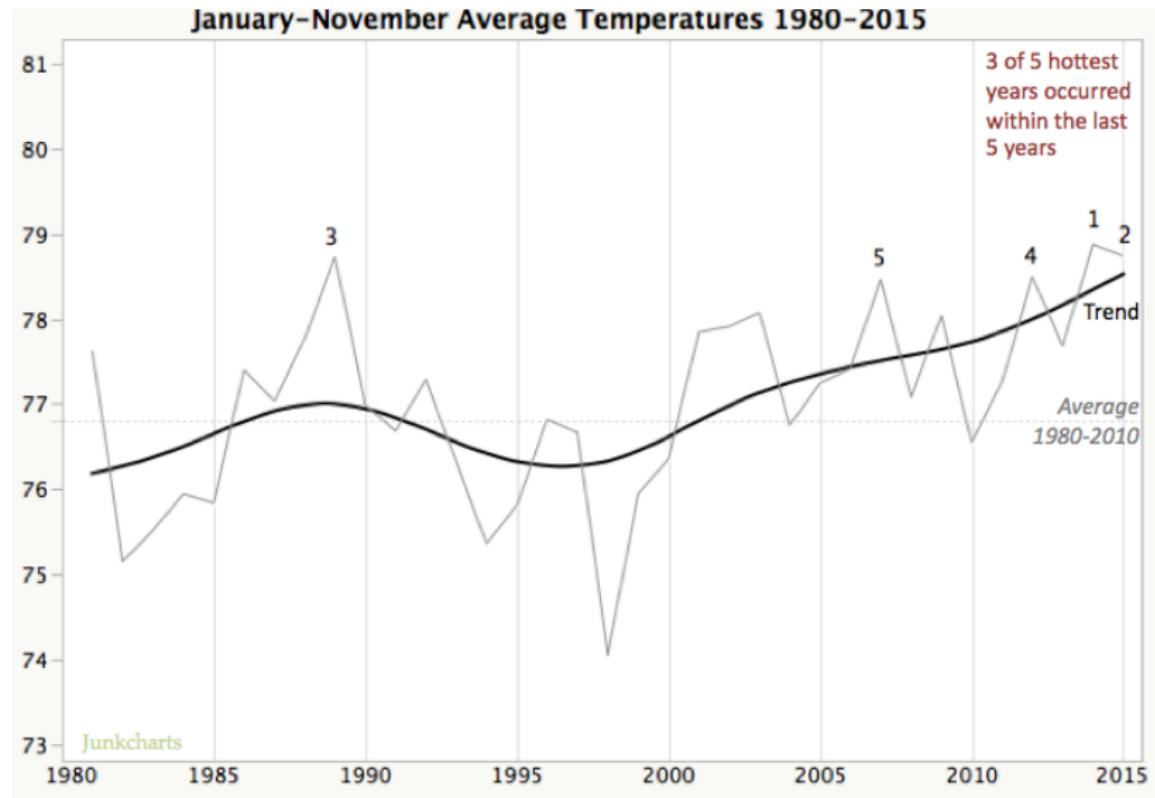
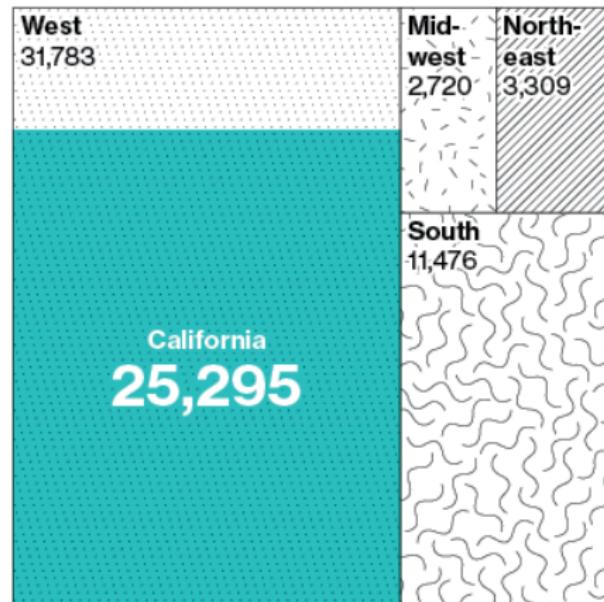


Figure 14: Temperature in Arizona

Modern day charts

U.S. electric vehicle sales by region

January through September 2015



GRAPHIC BY BLOOMBERG BUSINESSWEEK
DATA: IHS AUTOMOTIVE

Figure 15: Electric Vehicle Sales

Modern day charts

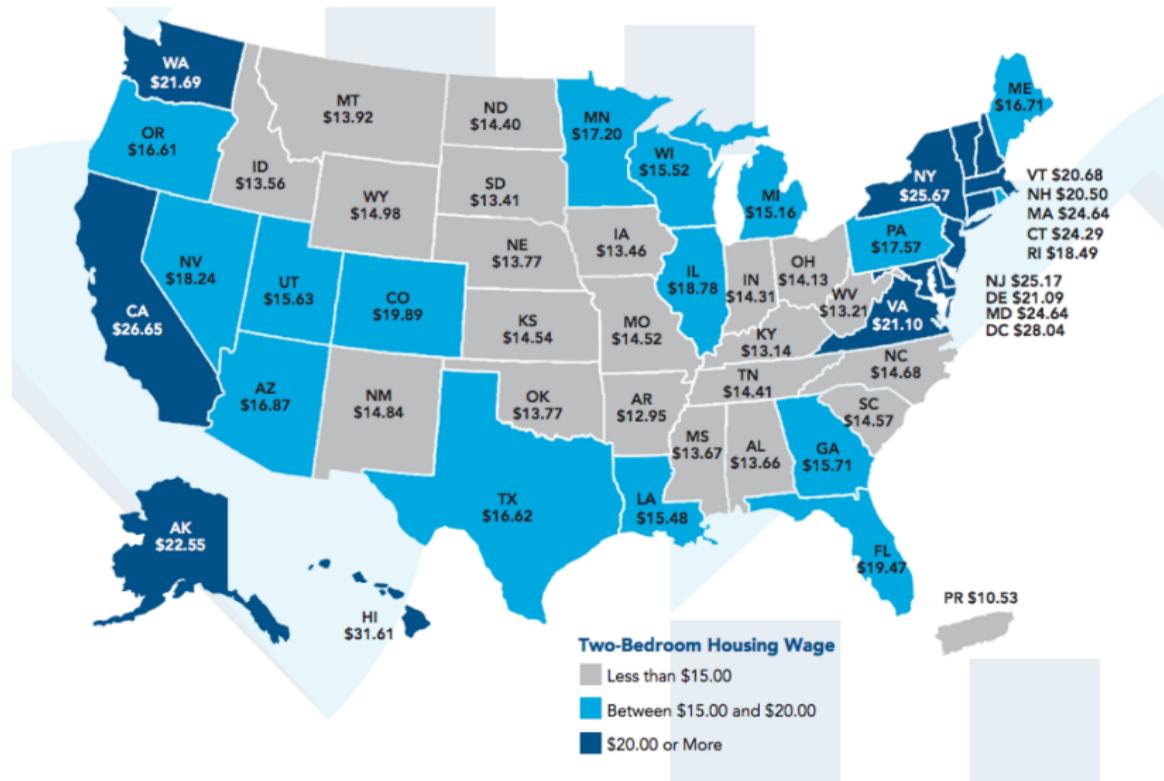


Figure 16: Hourly Wages to Afford Two-Bedroom Apartment

Modern day charts

Win Probability



Figure 17: Win probability

Color Blindness



Figure 18: NFL game

Color Blindness



Figure 19: NFL game

Pie charts

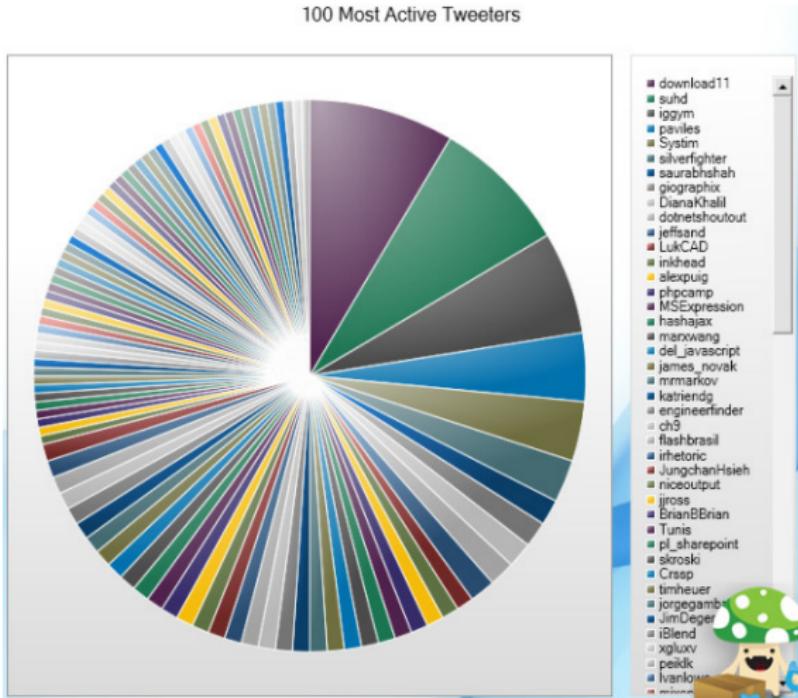


Figure 20: Top 100 tweeters

Pie charts

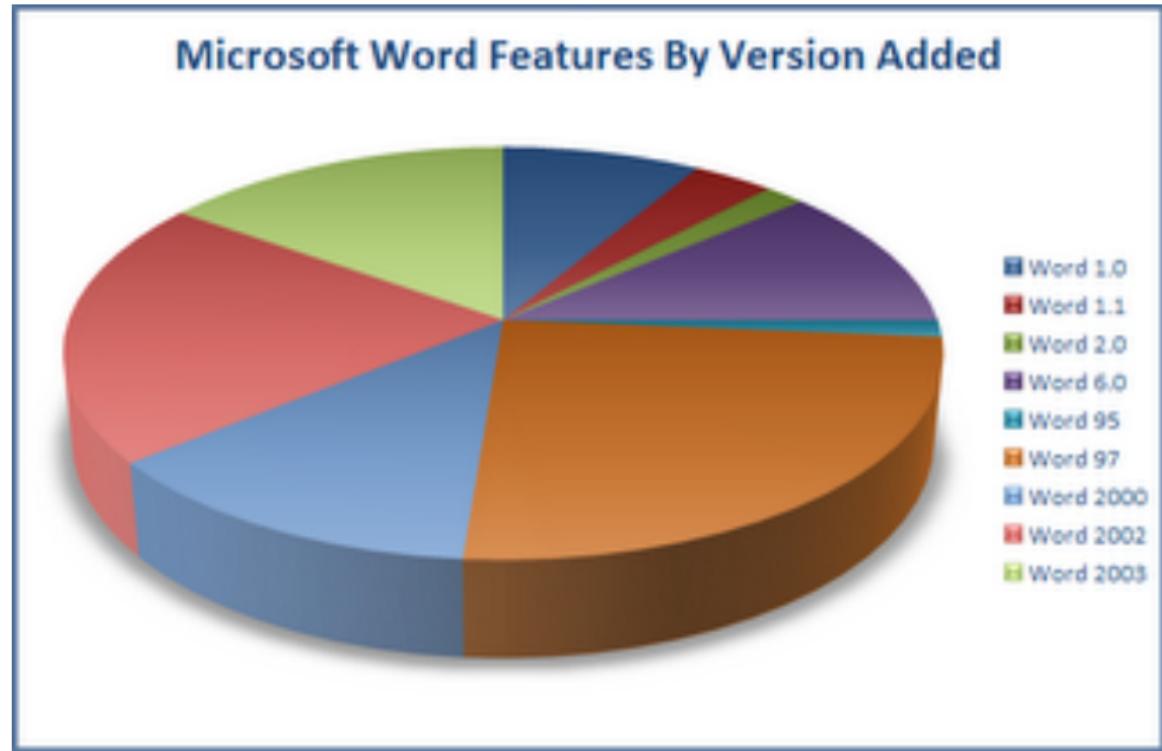


Figure 21: Never Make 3-D Pie Charts

Good pie chart



Figure 22:

Interactive

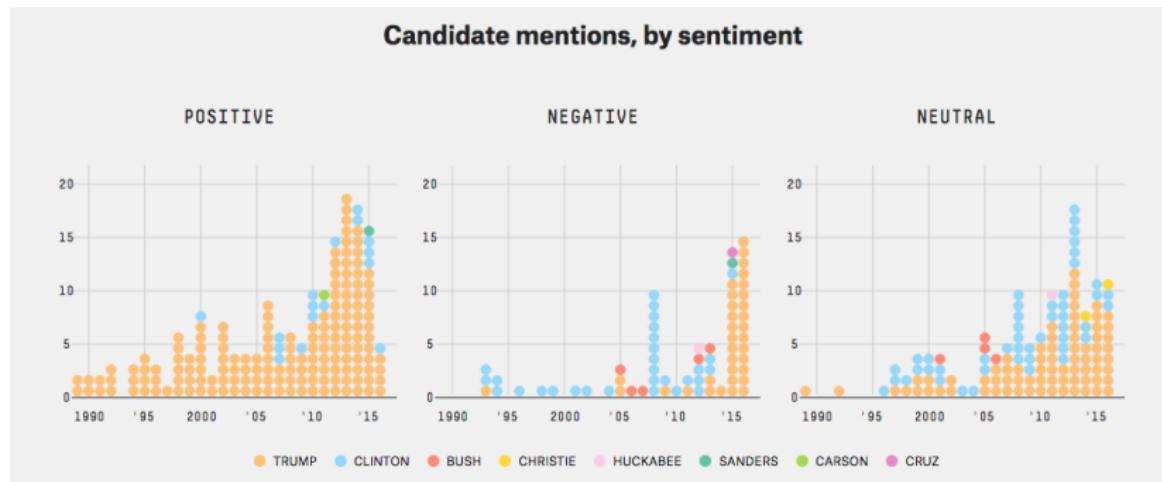


Figure 23: Donald Trump Mentions (via A. McCann)

Interactive



Figure 24: David Bowie

Interactive

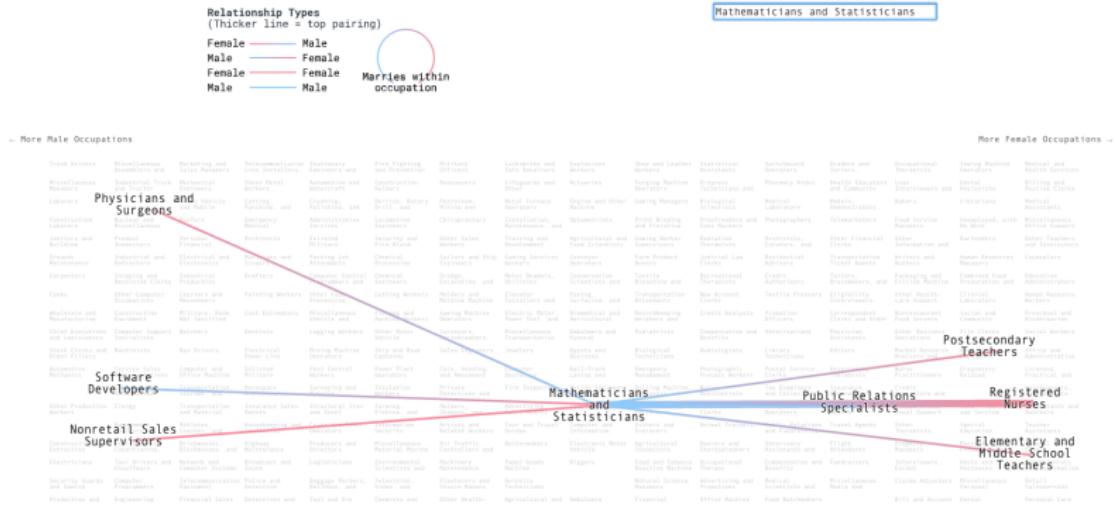


Figure 25: Who Marries Who