

# 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

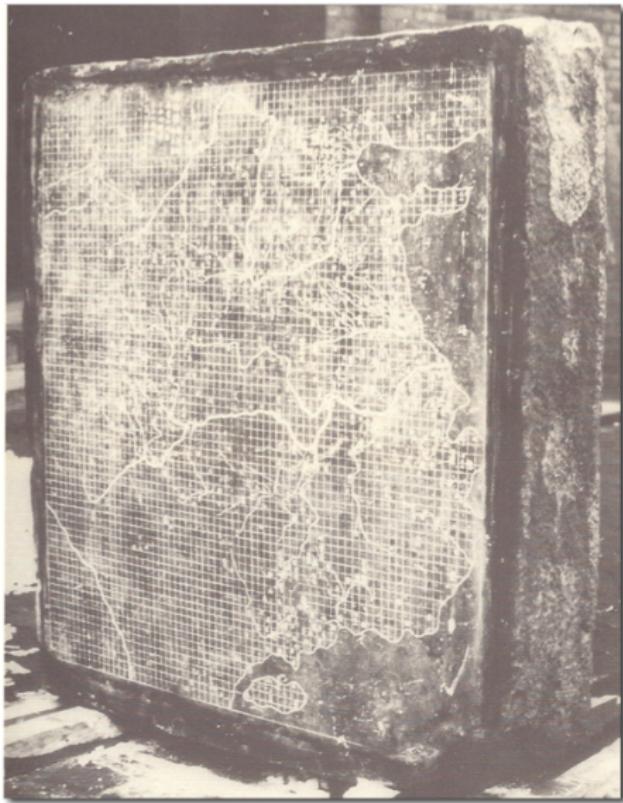


Figure 1: What do we see?

# Tracks of Yu the Great

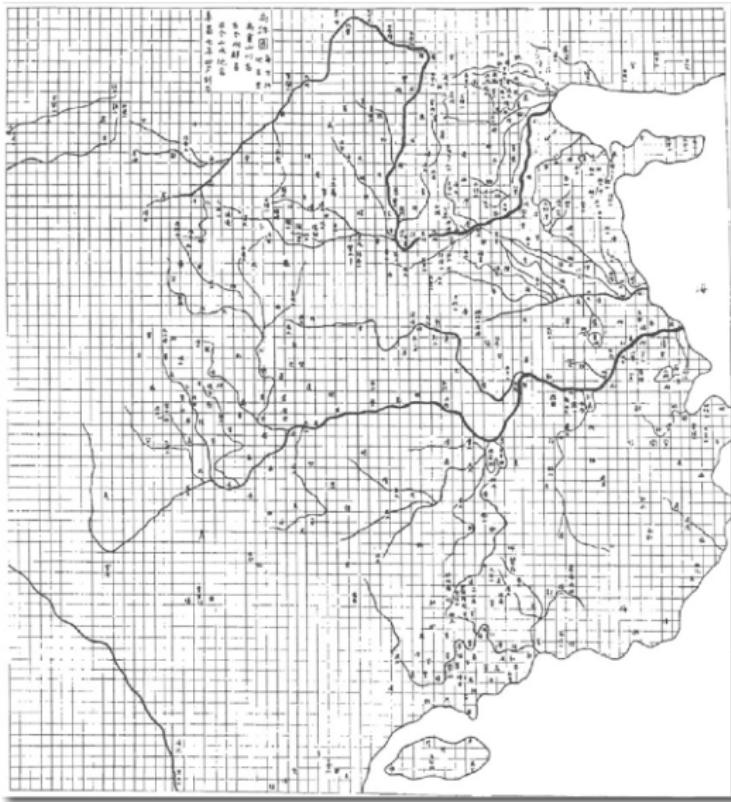


Figure 2: What do we see?

# La Verdadera Longitud por Mar y Toledo

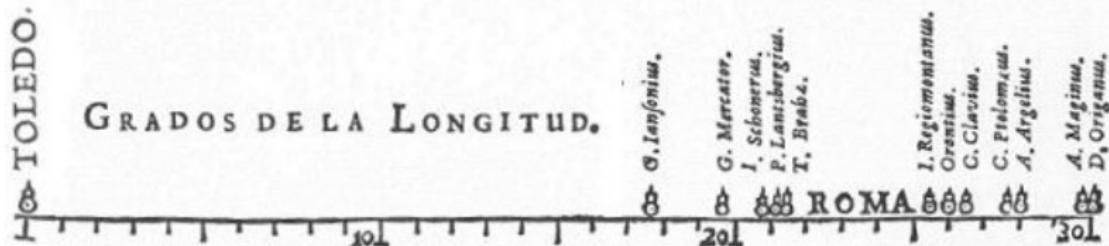


Figure 3: Estimates of distance from Rome to Toledo

# Minard – Exports of French Wine

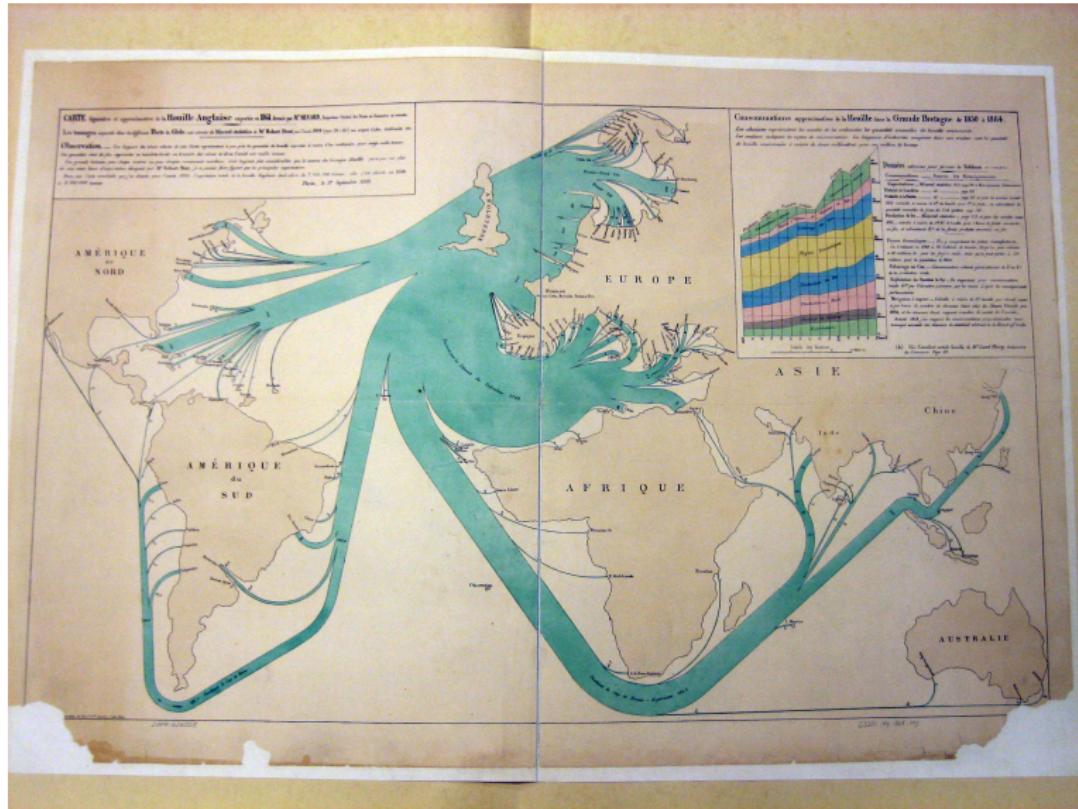
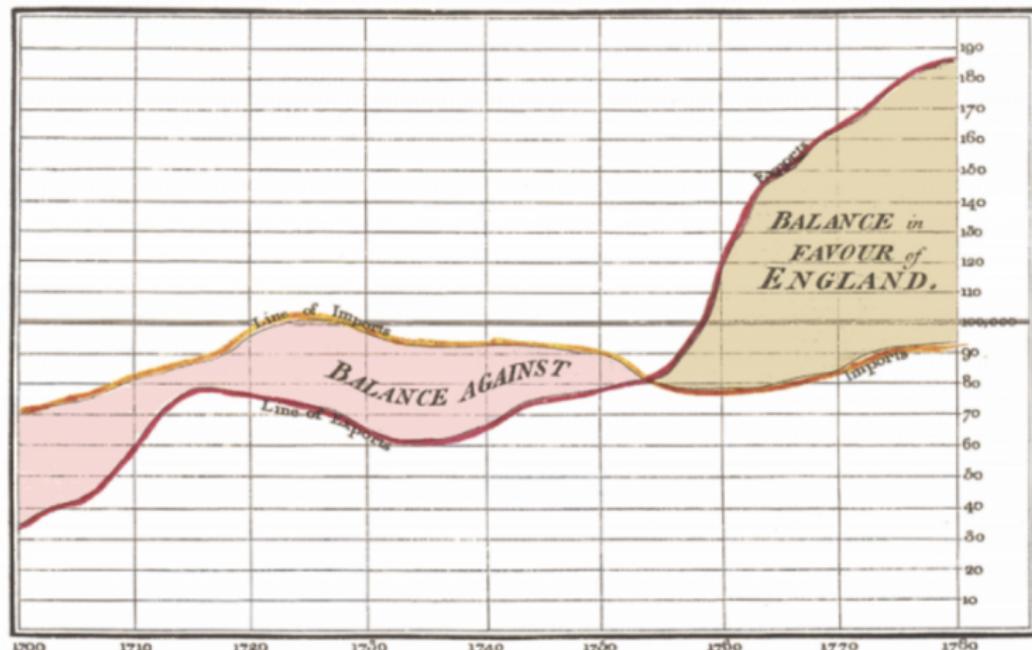


Figure 4: Minard – Exports of French Wine

# 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, 1<sup>st</sup> May 1786, by W<sup>m</sup> Playfair.

No. 60, Strand, London.

Figure 5: England's Imports and Exports

# Cholera Mapping

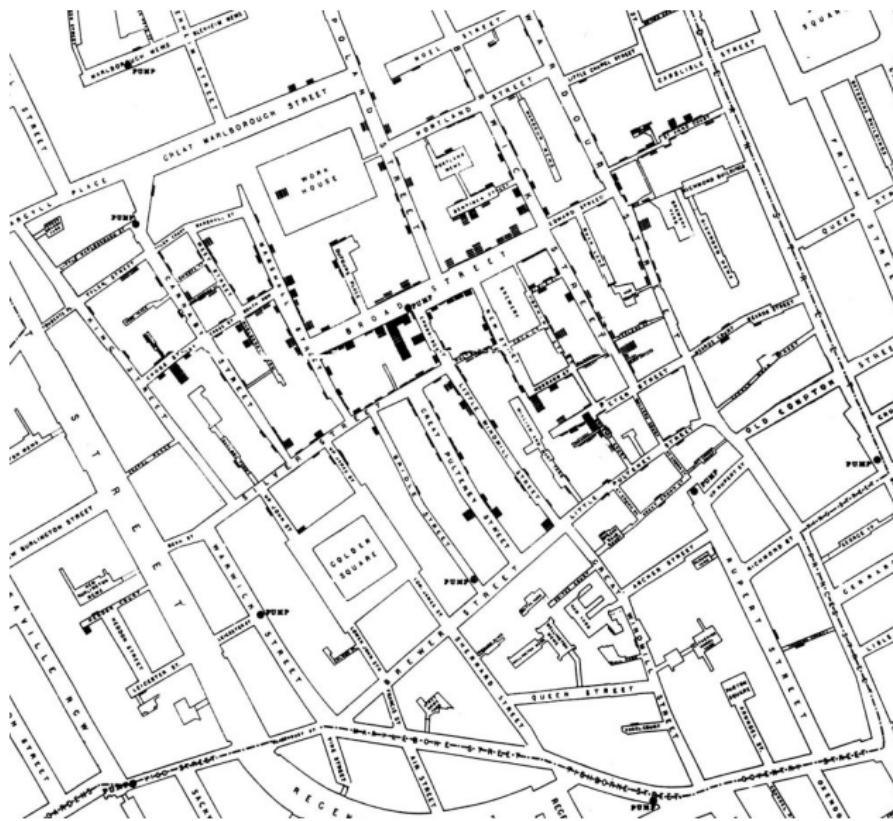
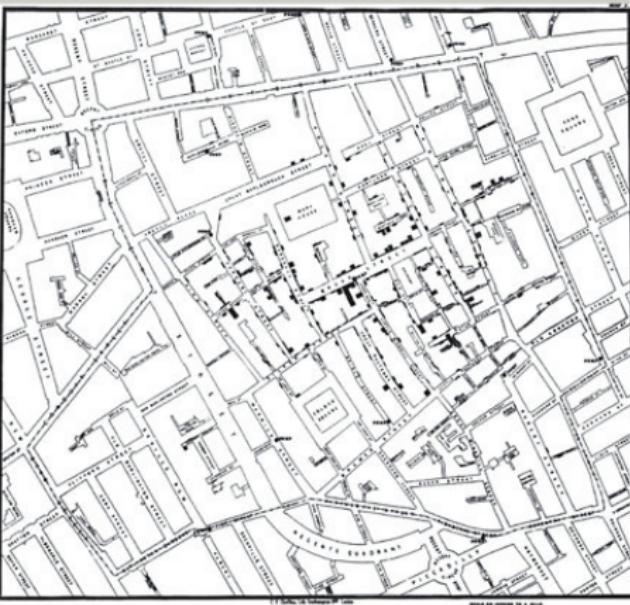


Figure 6: Cholera Mapping

# Jon Snow



You know nothing (about cholera),  
**JOHN SNOW**

Figure 7: Jon Snow

# Most famous data viz

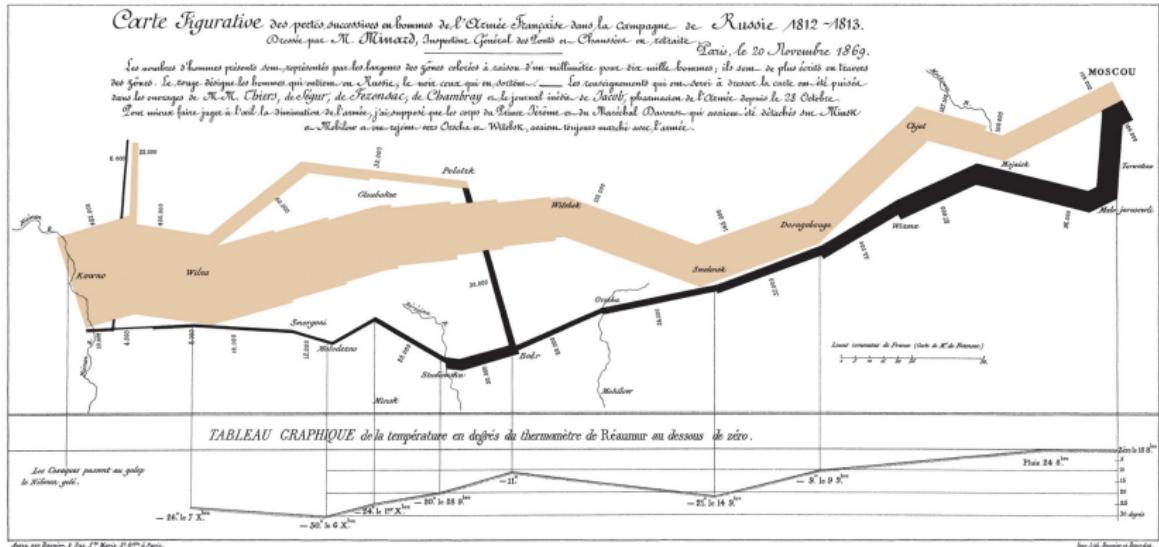


Figure 8: Napoleons March To Moscow

# Winter Is Coming



Figure 9: Winter Is Coming

# Diamonds

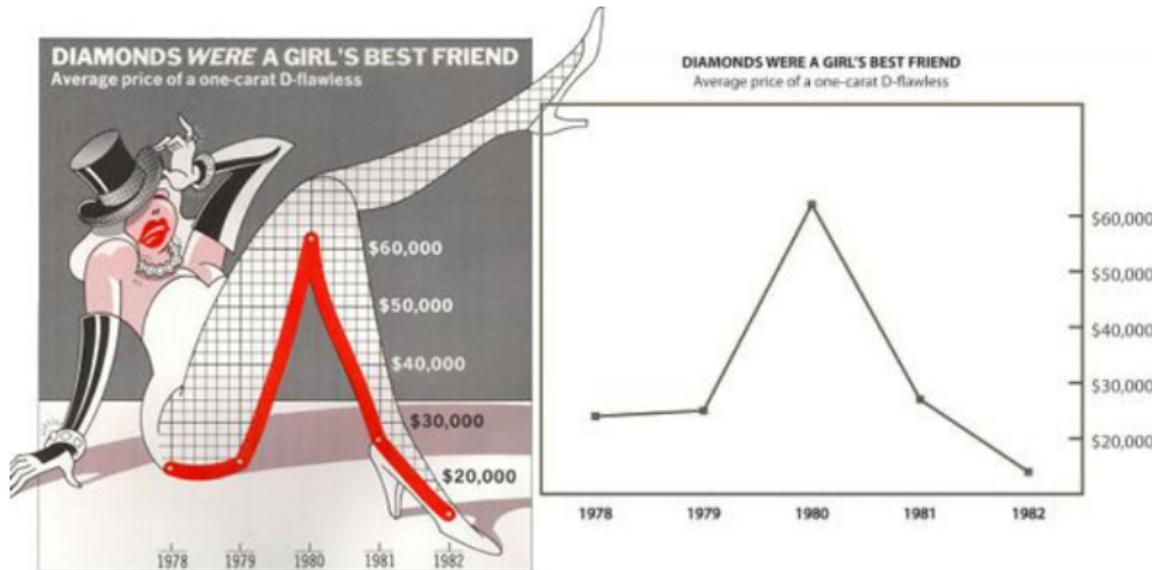
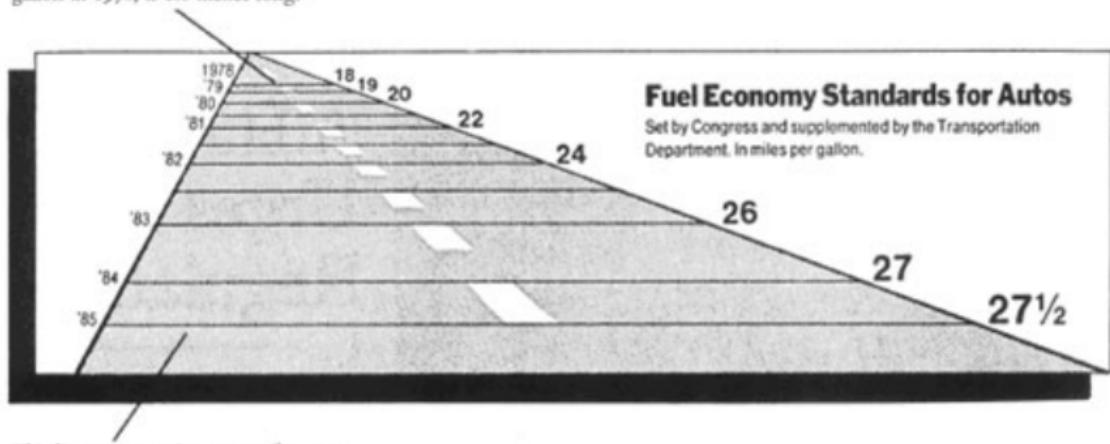


Figure 10: Diamonds Were A Girl's Best Friend

# Fuel Economy

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



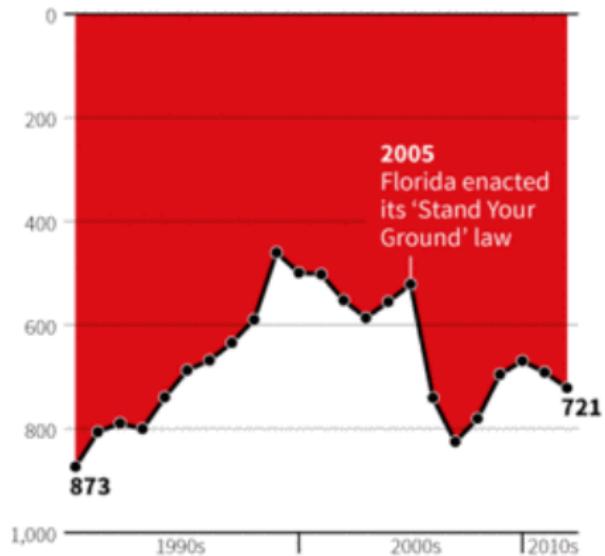
This line, representing 27.5 miles per gallon in 1985, is 5.3 inches long.

Figure 11: Fuel Economy

# Gun Deaths

## Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

REUTERS

Figure 12: Gun Deaths in Florida

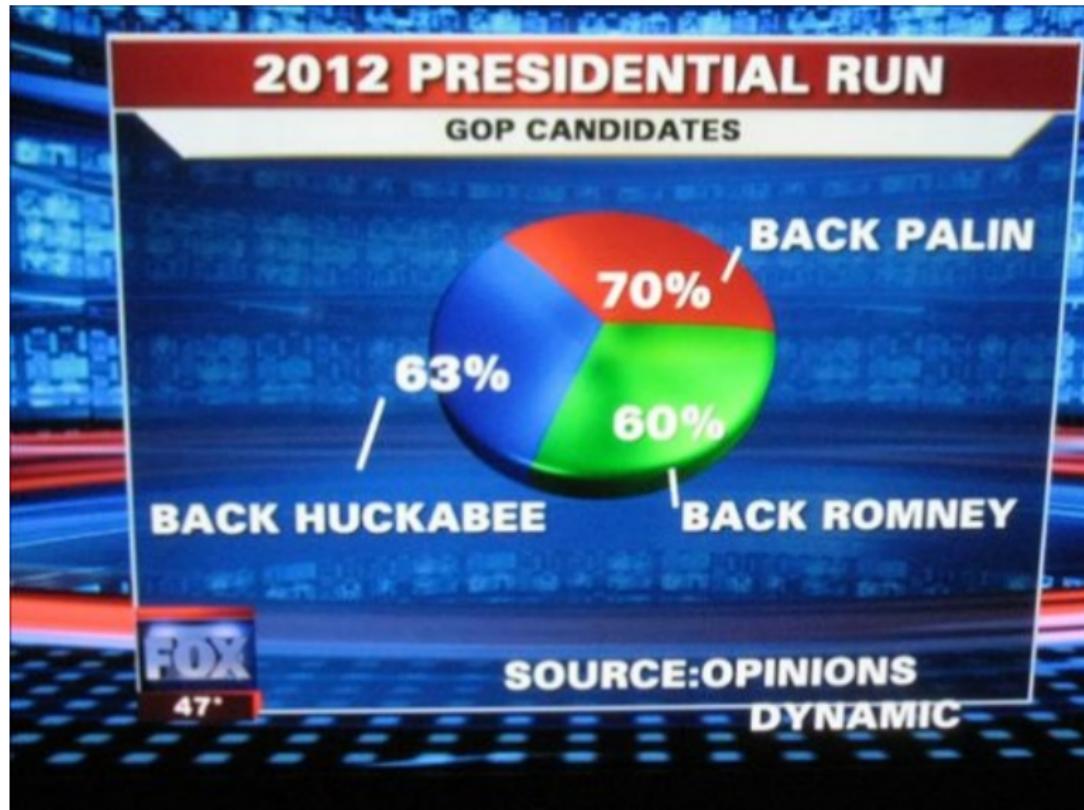


Figure 13: Presidential Candidates

# Temperature in Arizona

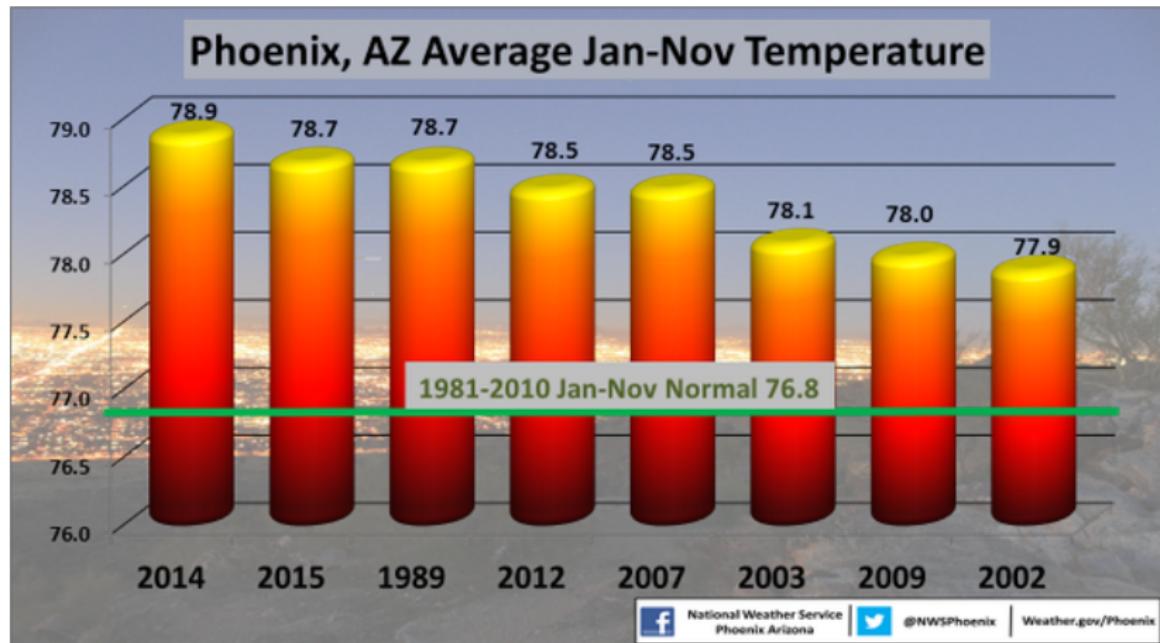


Figure 14: Temperature in Arizona

# Temperature in Arizona

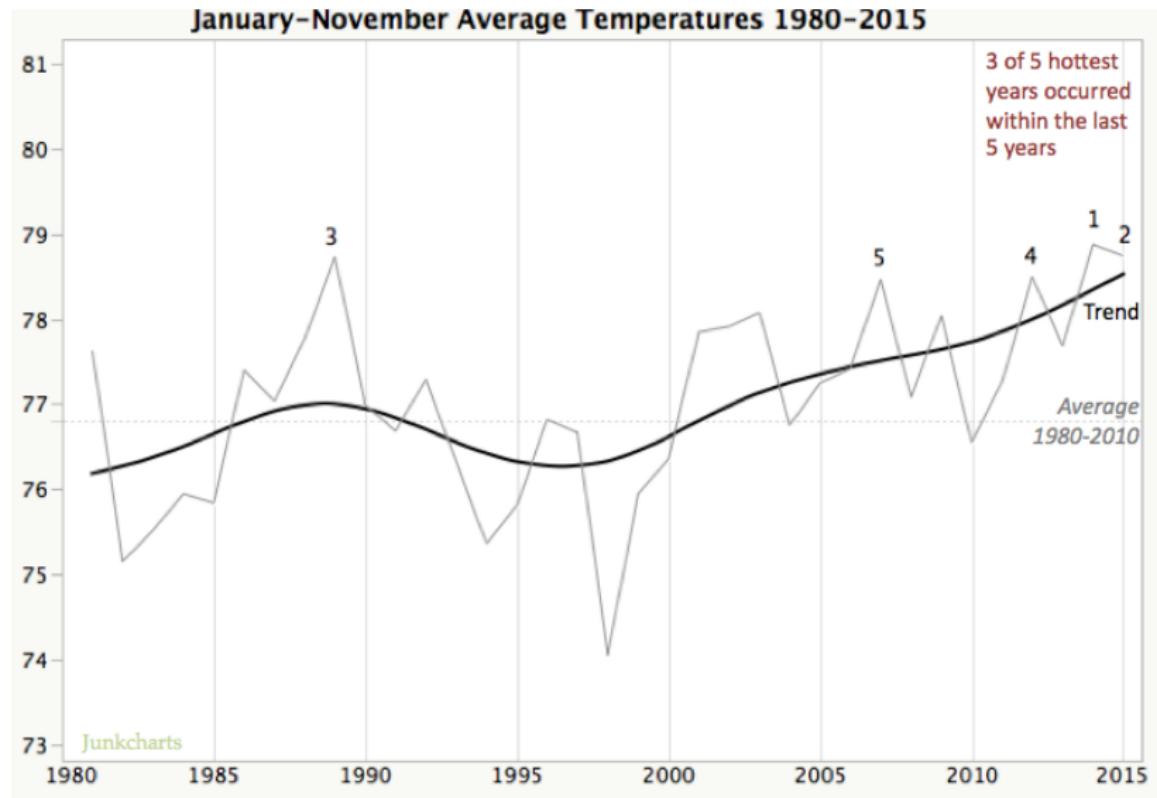
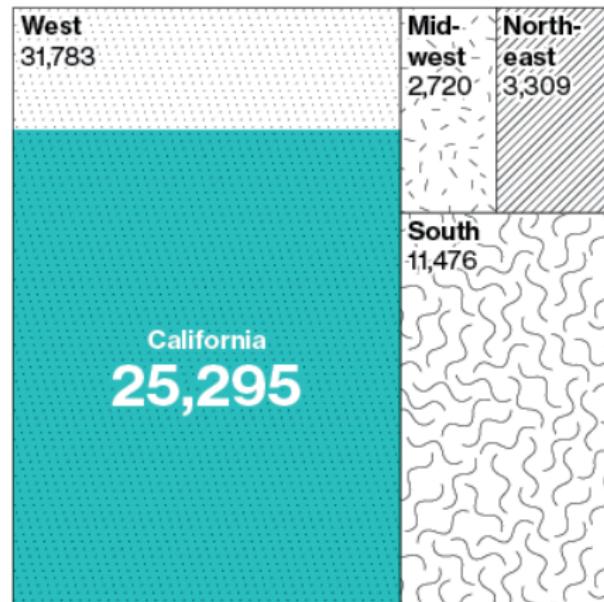


Figure 15: Temperature in Arizona

# Electric Vehicle Sales

## U.S. electric vehicle sales by region

January through September 2015



GRAPHIC BY BLOOMBERG BUSINESSWEEK  
DATA: IHS AUTOMOTIVE

Figure 16: Electric Vehicle Sales

# Wages

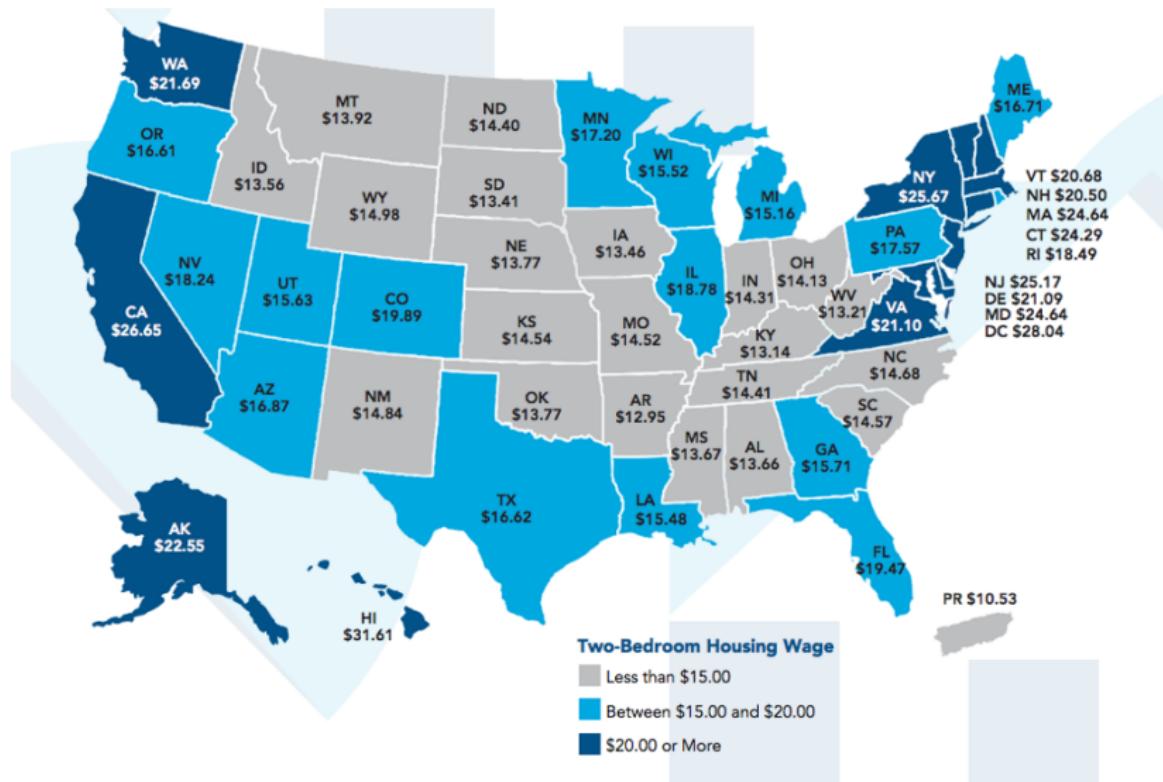


Figure 17: Hourly Wages to Afford Two-Bedroom Apartment

# NFL Blindness



Figure 18: NFL game

# NFL Blindness



Figure 19: NFL game

# Twitter

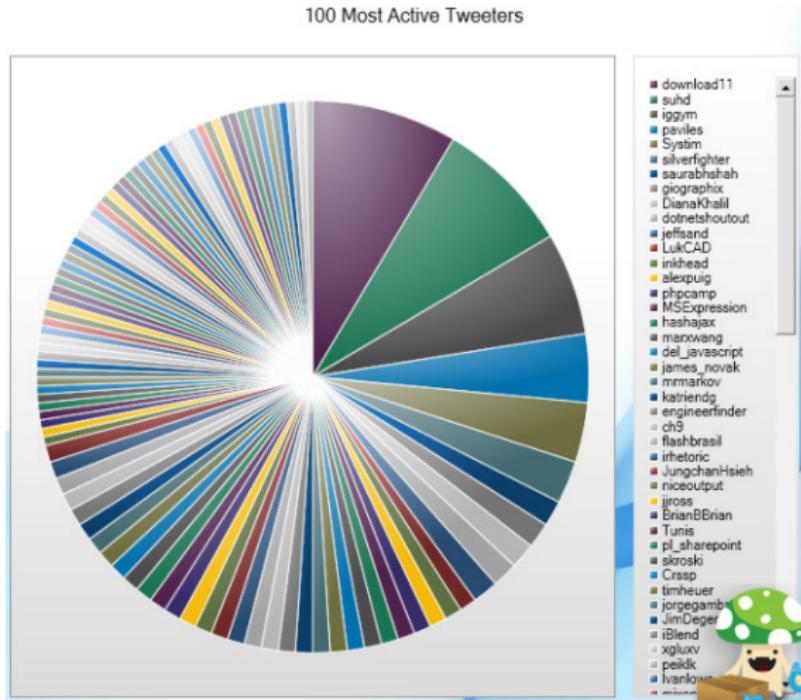


Figure 20: Top 100 tweeters

## 3d pie charts

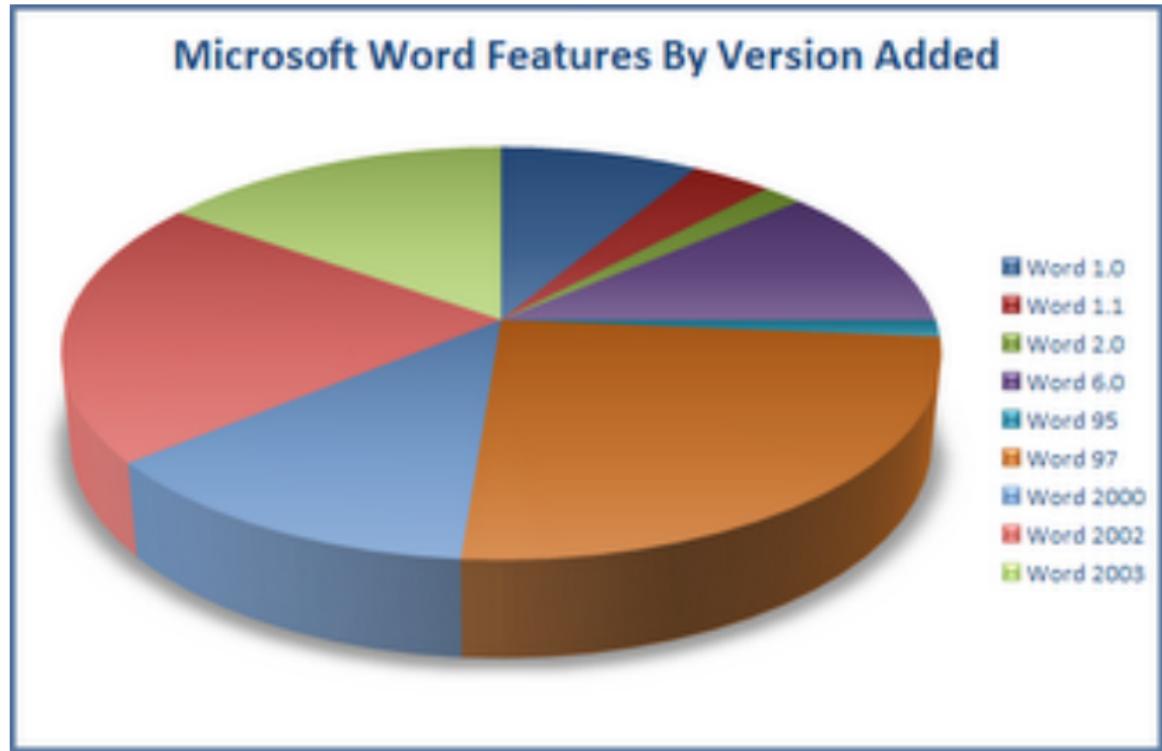


Figure 21: Never Make 3-D Pie Charts

## Good pie chart



Figure 22:

# Steelers-Bengals Win Probability

## Win Probability

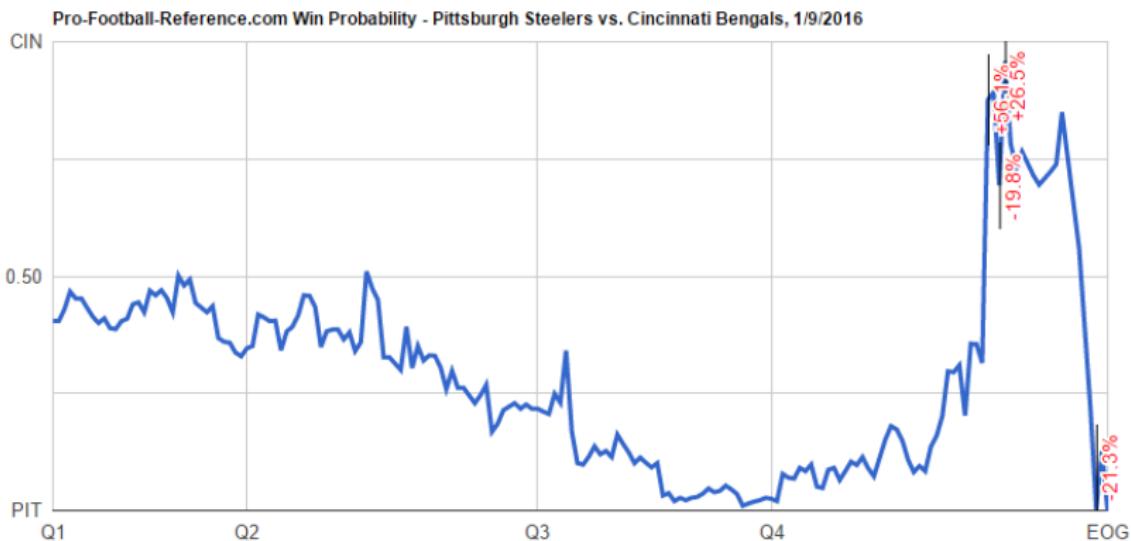


Figure 23: Win probability

# David Bowie's Influence

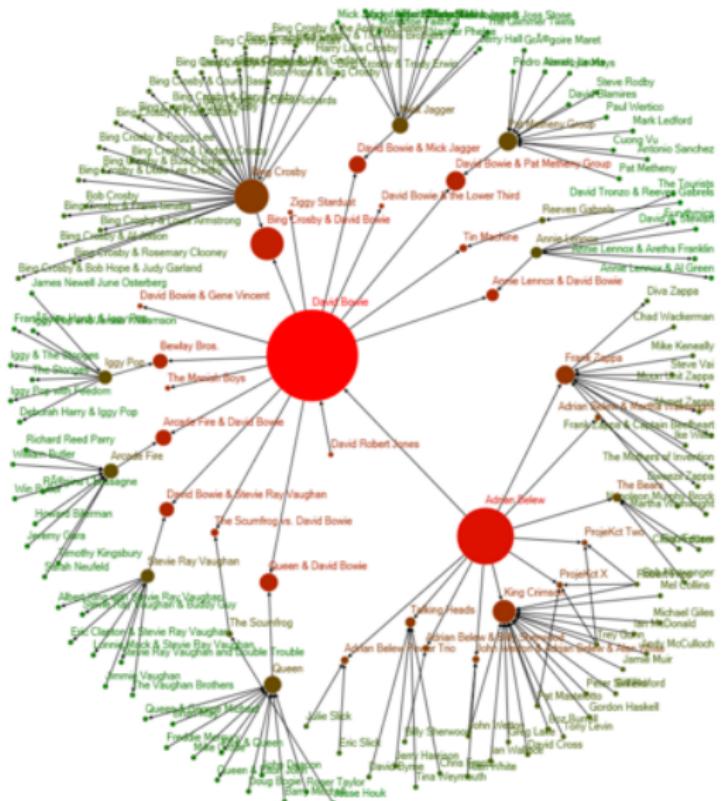


Figure 24: David Bowie

# Interactive

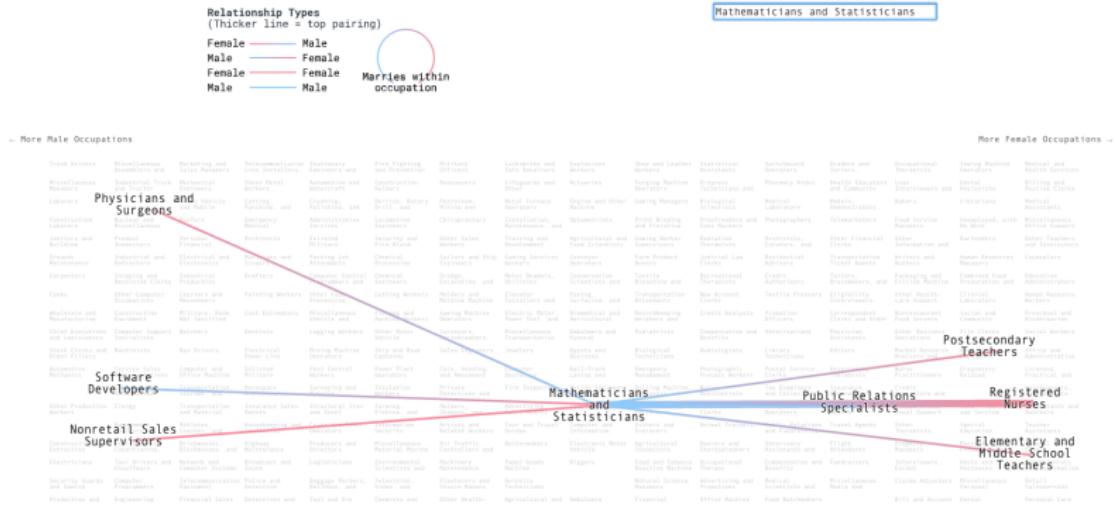


Figure 25: Who Marries Who