



# — Exceptional Presentations In Spite of PowerPoint: *How to Communicate in the Digital Age*

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*Executive External Strategy and Communications Fellow*  
The Dow Chemical Company

ACS Industry Member Programs  
Essential Workplace Skills for STEM Industry Professionals  
18 June 2019 Philadelphia





*A presentation  
succeeds because of what  
you say, not because of  
what you show.*



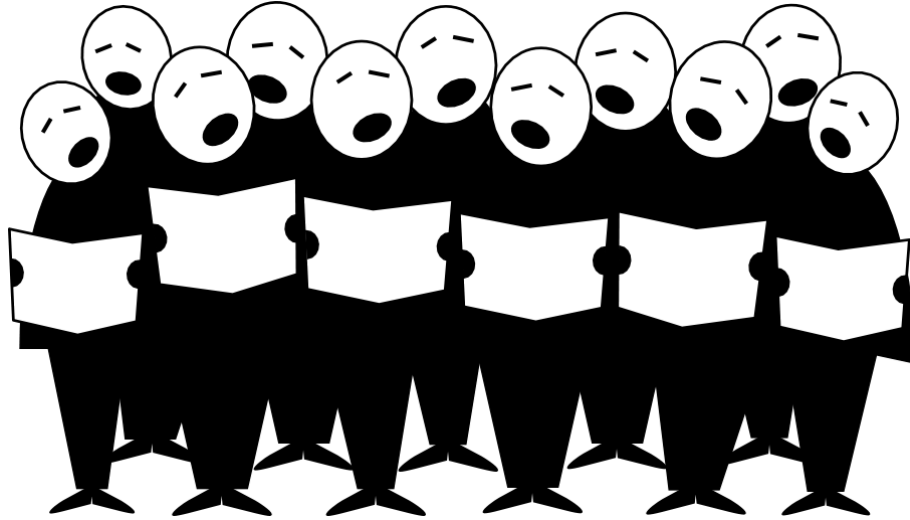
## Why Use Visual Aids?

	Recall in 3 hrs	Recall in 3 days
Telling (alone)	70%	10%
Showing (alone)	72%	20%
Telling and Showing Together	85%	65%

Gene Anderson



## Slides As Chorus



## Command the Room



## Proactively Paranoid idea by Bryant NYT Guide



Use hyperlinks in the document to give yourself flexibility to shorten or amplify topics



“

Designing a presentation without an audience in mind is like writing a love letter and addressing it 'to whom it may concern'.

”

Ken Haemer  
Presentation Research Manager,  
AT&T



in HBR Guide to Persuasive Presentations

## — The Six Signals All Audiences Want to Hear

“

1. I will not waste your time
2. I know who you are
3. I am well organized
4. I know my subject
5. Here is my most important point
6. I am finished

”

Ed Wohlmut in The Overnight Guide to Public Speaking



“

The beginning is the most important part of the work.

*Plato*

”



“

No one can remember more than three points.

Phil Crosby

”



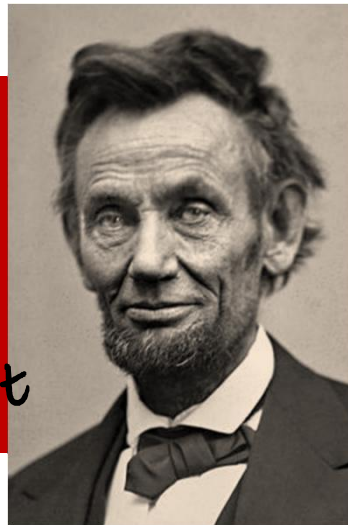


99.9999% of presentations are to ***influence***. Never fall into the trap of thinking your job is only to ***inform***.



Nearly all men can stand adversity, but if you want to test a man's character, give him power.

^point



Google Peter Norvig PowerPoint  
Gettysburg – fun stuff

Lincoln quote modified by Duarte





# — Gettysburg Cemetery Dedication

Abraham Lincoln



## — Agenda

- Met on battlefield (great)
- Dedicate portion of field - fitting!
- Unfinished work (great tasks)



## ■ Not on Agenda!

- Dedicate
- Consecrate
- Hallow  
(in narrow sense)
- Add or detract
- Note or remember what we say



## ■ Review of Key Objectives & Critical Success Factors

What makes nation unique

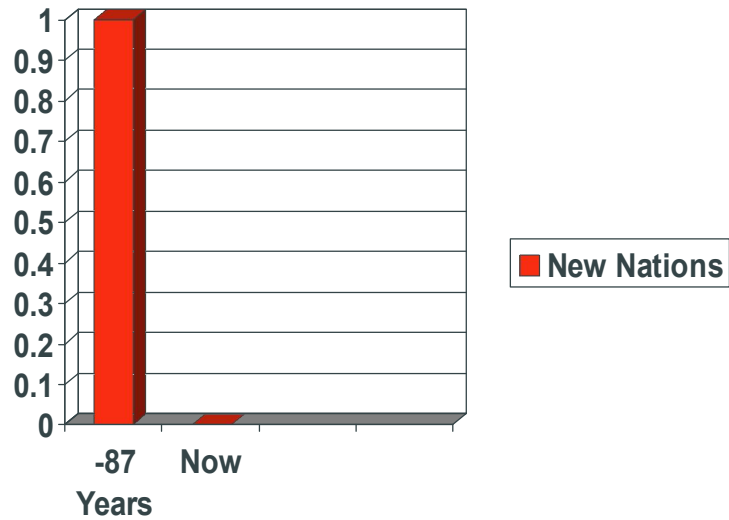
- Conceived in Liberty
- Men are equal

Shared vision

- New birth of freedom
- Gov't of/for/by the people



## Organizational Overview



## Summary

- New nation
- Civil war
- Dedicate field
- Dedicated to unfinished work
- New birth of freedom
- Government not perish



# PowerPoint Poisoning

Dilbert by Scott Adams

INTRODUCED THE CONCEPT OF POWERPOINT  
POISONING

<http://dilbert.com/strip/2000-08-16>

August 16, 2000



# PowerPoint Must Not Overpower The Message

The New York Times

April 26, 2010

## We Have Met the Enemy and He Is PowerPoint

By ELISABETH BUMILLER

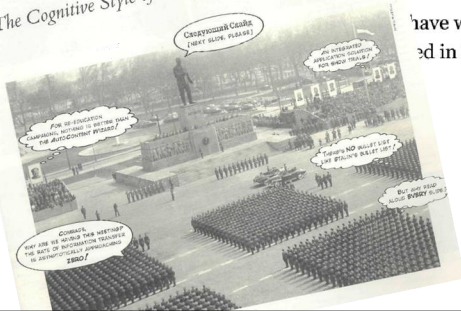
WASHINGTON — Gen. Hugh Shelton, chairman of the Joint Chiefs of Staff, issued an unusual order to U.S. military bases around the globe. His message: enough with the bells and whistles—just get to the point.

Gen. Hugh Shelton, the leader of America's military, said in a slide in Kabul last summer that the U.S. had won the war, but looked more like a PowerPoint presentation than a general.

Gen. Shelton, 67, remarked, one of the most powerful men in the world, that he had been in laughter.

Edward R. Tufte

The Cognitive Style of PowerPoint



What's Your Point, Lieutenant? Just Cut To the Pie Charts

The Pentagon Declares War On Electronic Slide Shows That Make Briefings a Pain

By GREG JAFFE

WASHINGTON — Earlier this year, Gen. Hugh Shelton, chairman of the Joint Chiefs of Staff, issued an unusual order to U.S. military bases around the globe.

His message: enough with the bells and whistles—just get to the point. It seems that e-mailed military briefings larded with booming tanks and spinning slides were gobbling up so much of the Department's capacity that they were...

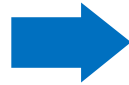
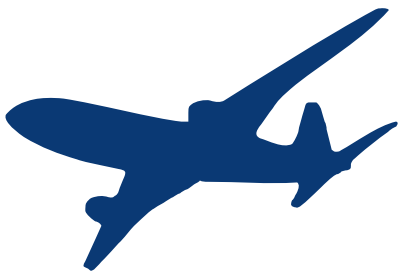
Too many bright, young junior officers are leaving the military for the private sector? A recent survey of captains at Benning, Ga., cites the "disaffection" of the "private sector" as a major reason. "The...



**Mind Ready**



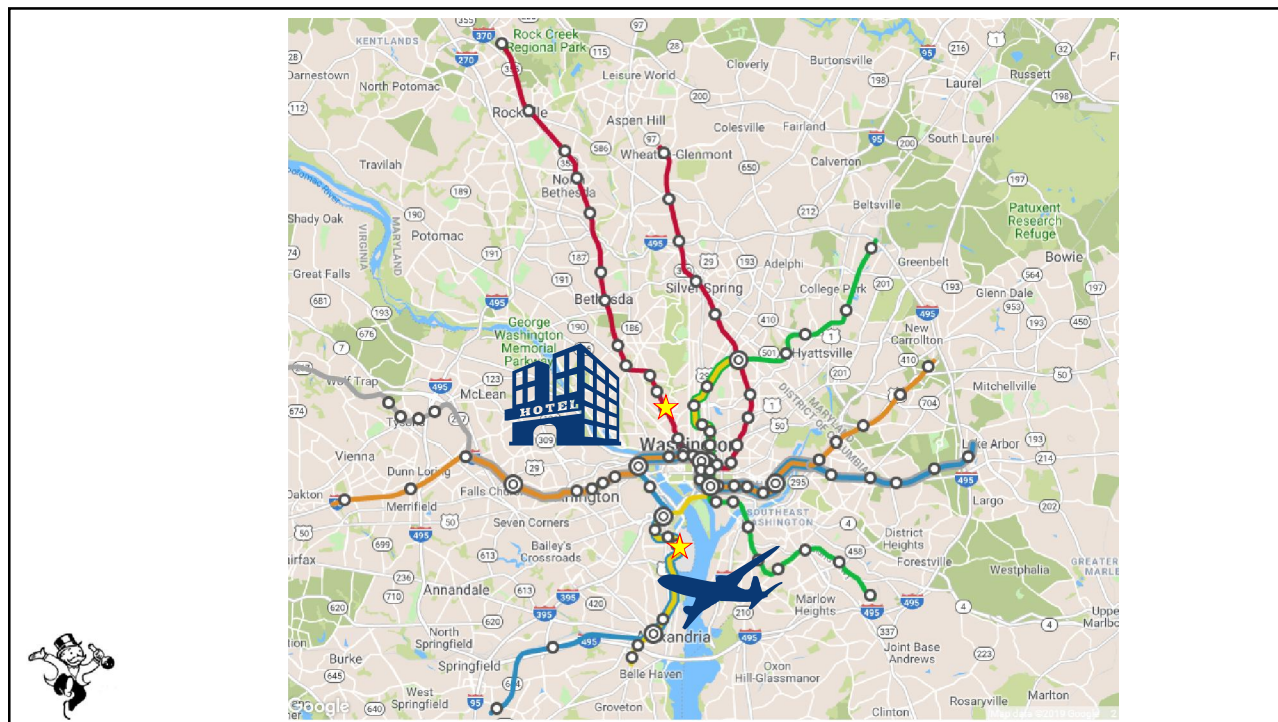
Washington, D.C.

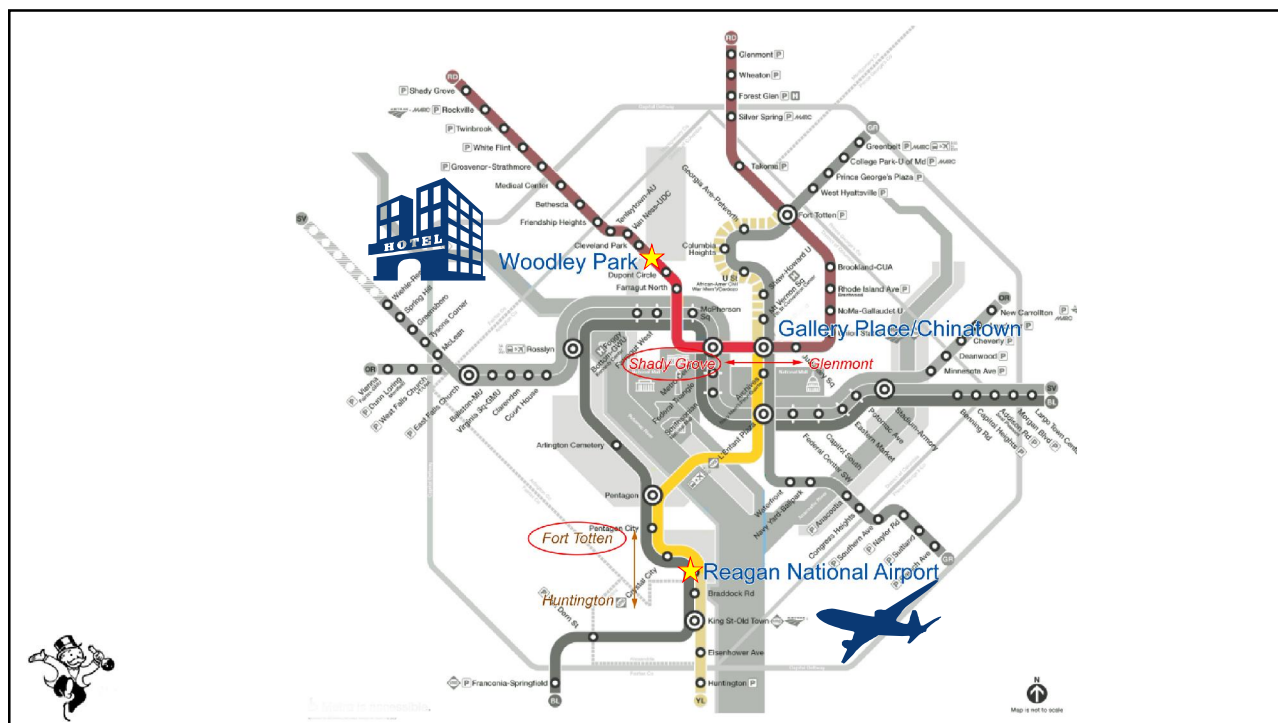
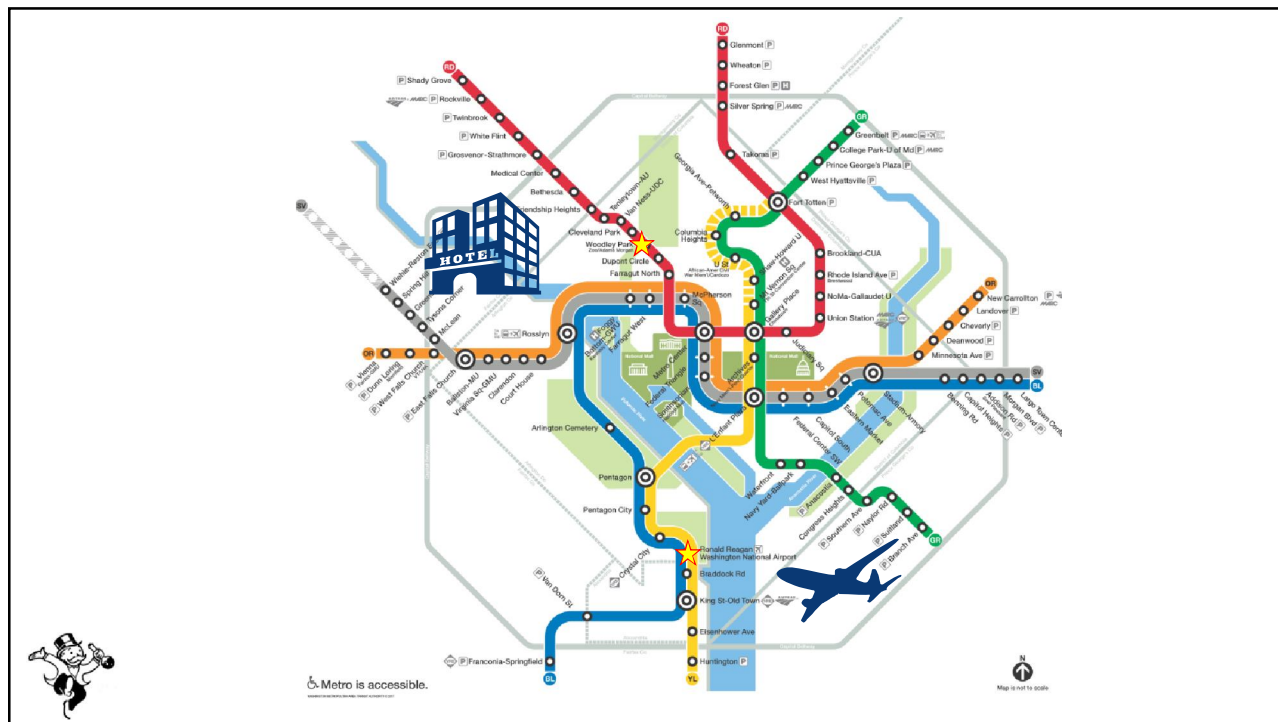


Reagan National Airport

Marriott Woodley Park









## Font Choice

Focus on readability.



### Sans serif

Arial  
Segoe  
Tahoma

### Serif

Times New Roman  
Averia  
Bookman  
Century

### Trouble

Comic Sans  
Bazooka  
Script  
Fancy  
Wierd  
STRANGE  
Swirly  
BZAPPE





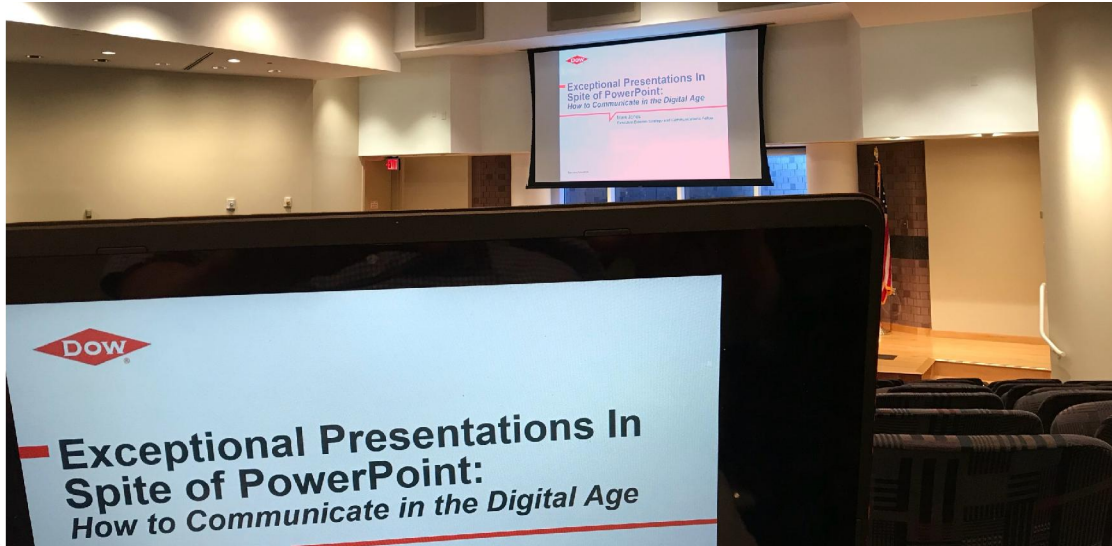
■ Fonts Instead of Icons

*Specialty*

**COMMODITY**



■ Size?



# Size?



Aa



14 pt  
36 pt



4.5 (4.5)  
11.6 pt (11.6)



2.3 (2.3)  
6 pt (6)  
12 pt (12)

72 pt

23 pt



## The Multi-slide Slide

*Dreaded*



- decomposition of a solution of common salt by means of an electric current
- direct conversion into chlorine gas and caustic soda solution
- known for a long time by electro-chemists
- first found commercial uses
- Mr. James Greenough, after years of development
- perfected an electrolytic process for the direct production of caustic soda and chlorine.
- other chemical products, too
- plant at Phosma Wharf, Battersea, London
- funded by Caustic Soda and Chlorine Syndicate, London
- uses ingenious method by which the electrolyzed products are separated, and their recombination rendered impossible.

- uses a specially constructed diaphragm
- composed of a series of V-shaped glass troughs
- fitting in a frame series each trough with a small space between them
- lightly packed with asbestos fiber
- uses a compound diaphragm
- carbon plates, with a metal core to increase the conductivity
- needed to render it non-conducting and impervious to attack by the nascent chlorine evolved on its surface
- first anode invented that is at all suitable for working on a large scale
- constitutes a marked advance in the apparatus used in electrolytic methods of production

- in operation for several months
- installation consists of the large electrolytic vessels
- each lined with five anodes and six cathodes arranged alternately
- anodes and cathodes separated by the various diaphragms
- each vessel is thus divided into ten pairs of chlorine electrodes and six pairs of caustic soda electrodes
- anodes and cathodes in each vessel are connected up in parallel similar to an ordinary storage battery
- five charging vessels are connected up in series
- current is produced by an Blake-Parker dynamo
- electromotive force required to overcome the resistance of each vessel is about 4.4 volts
- current density of 10 amperes per square foot of electrode surface

- fifty anodes are connected by means of tubes, the inlet being at the bottom and the outlet at the top of each section
- cathode sections are connected in the same manner
- the electrolytic vessels are charged with a solution of common salt, through which a current of electricity is then passed, thus decomposing or splitting up the salt into chlorine and sodium
- sodium converts into caustic soda
- automatic circulation of the solutions is maintained by placing the charging tanks at a slight elevation, and the vessels themselves on platforms arranged in steps
- solutions are pumped back from the lowest vessel to their respective charging tanks

- chlorine gas evolved is conveyed by means of main and branch tubes into several absorbers
- each of them kept in a state of saturation with the chlorine, thus making a fine bleaching or chlorine liquor
- chlorine to be made into bleaching powder is conveyed into special chambers, to be filled with lime in the usual manner
- caustic soda solution can be used as is
- if sold from this country, the high salt is required that are caused as above being transferred from the electrolytic vessels to evaporating pans, where it is concentrated to the required strength by evaporation and at the same time the salt remaining in the solution is eliminated by precipitation



slide 36

“

*Don't worry about slide count.  
Just make your slides **count**.*

”

*Nancy Duarte in HBR Guide*



■ Memorable is Good

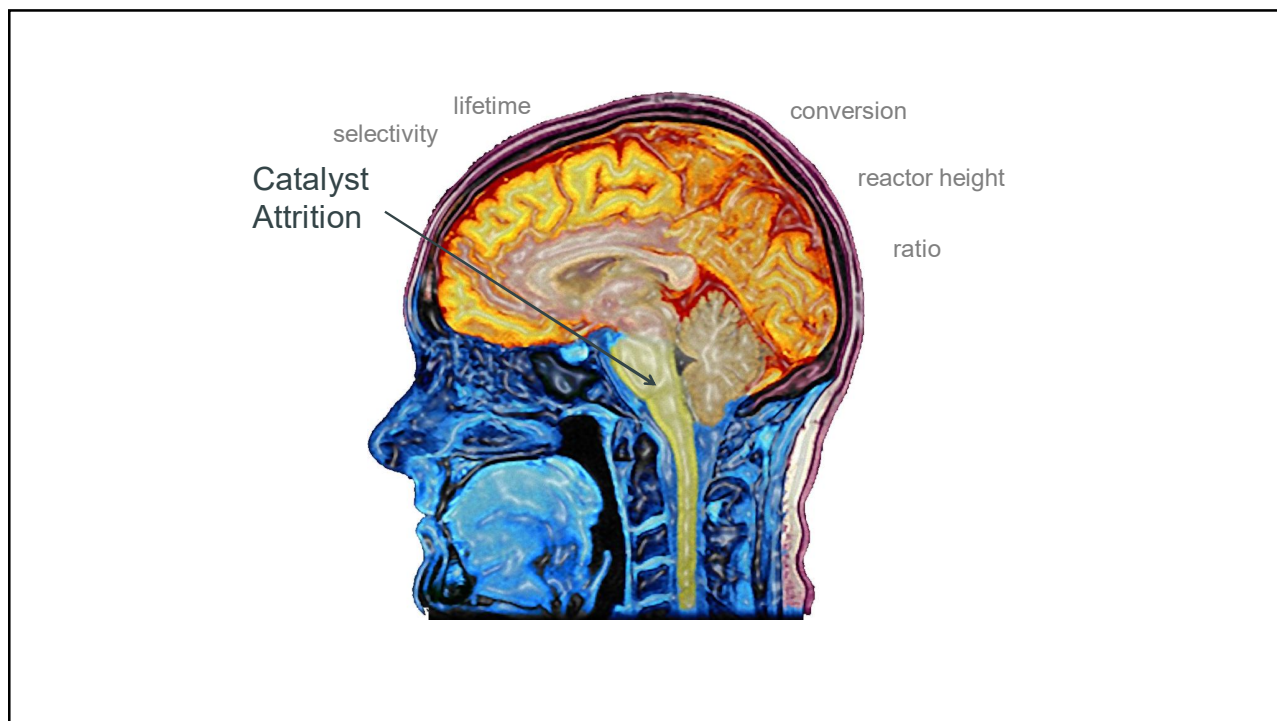
Which is better for the environment?

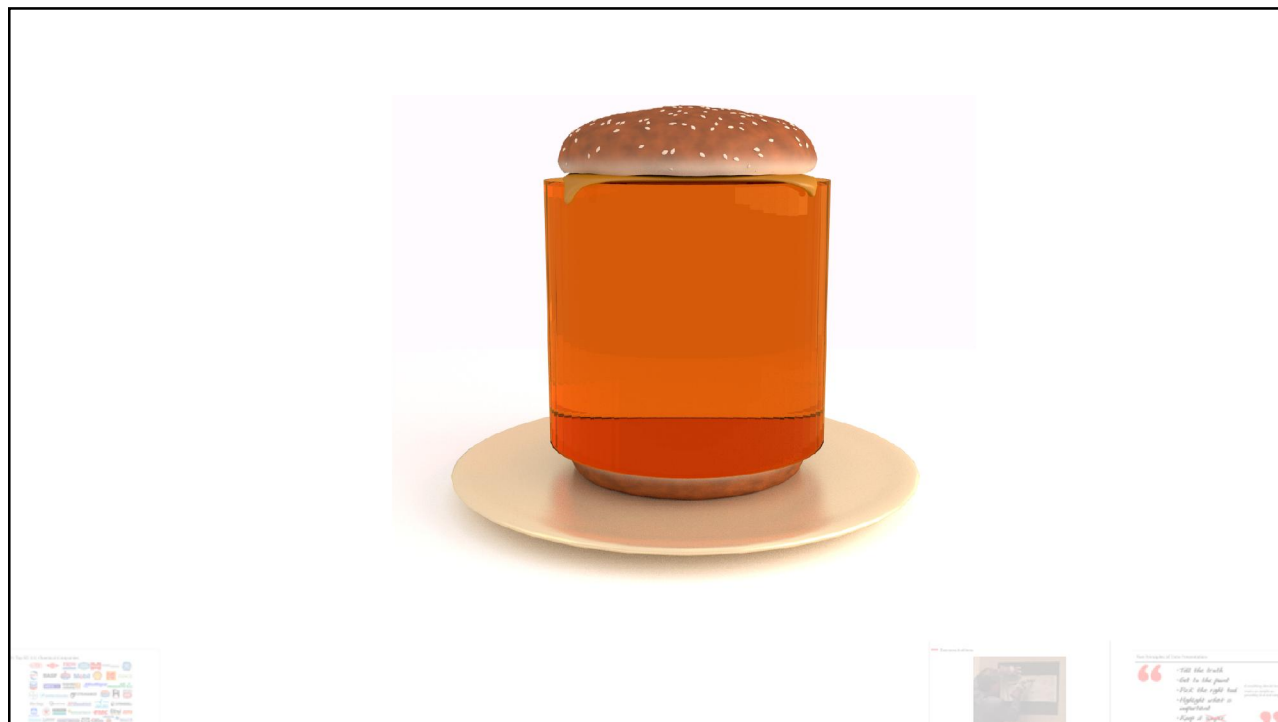
*A meat-eater in a Prius*



*A vegan in a Hummer*







## Demonstrations

June 12, 2017; the National Academy of Sciences, Washington, D.C.

## Five Principles of Data Presentation

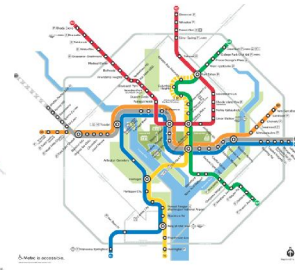


- Tell the truth
- Get to the point
- Pick the right tool
- Highlight what is important
- Keep it ~~simple~~ **appropriate**

Everything should be made as simple as possible, but not simpler.



Nancy Duarte in Slideology



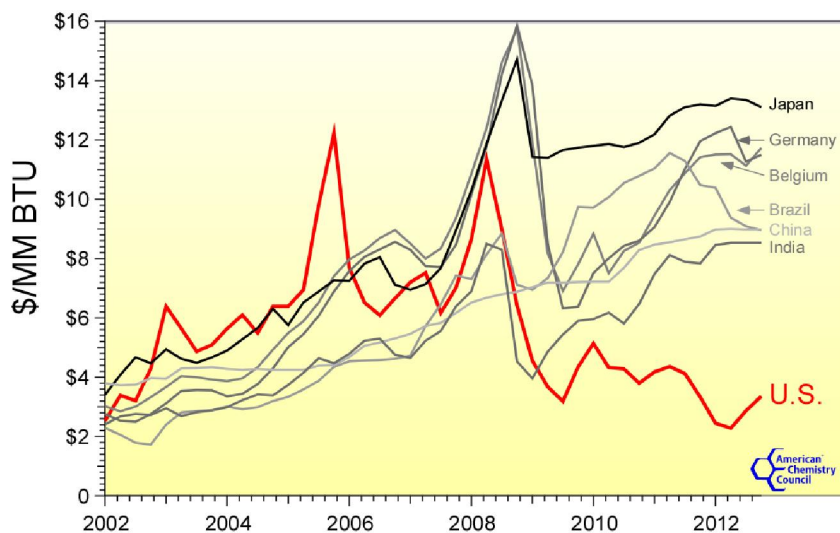
## Simplicity

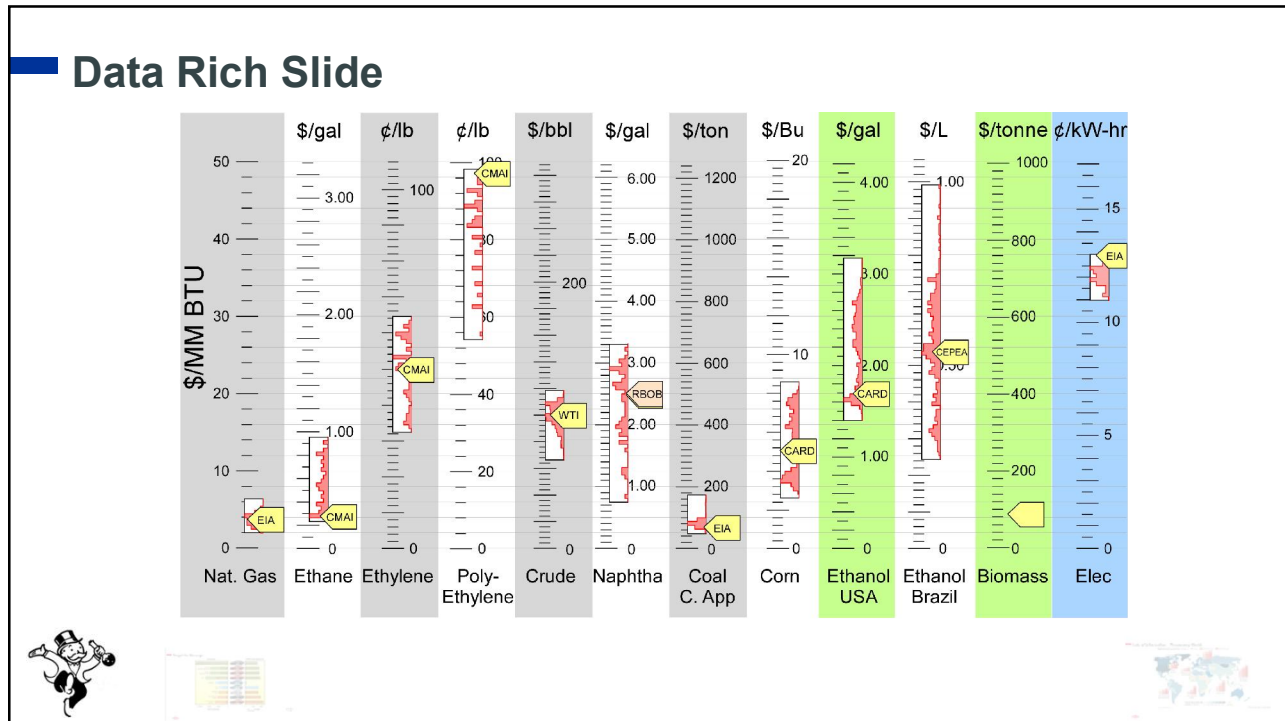
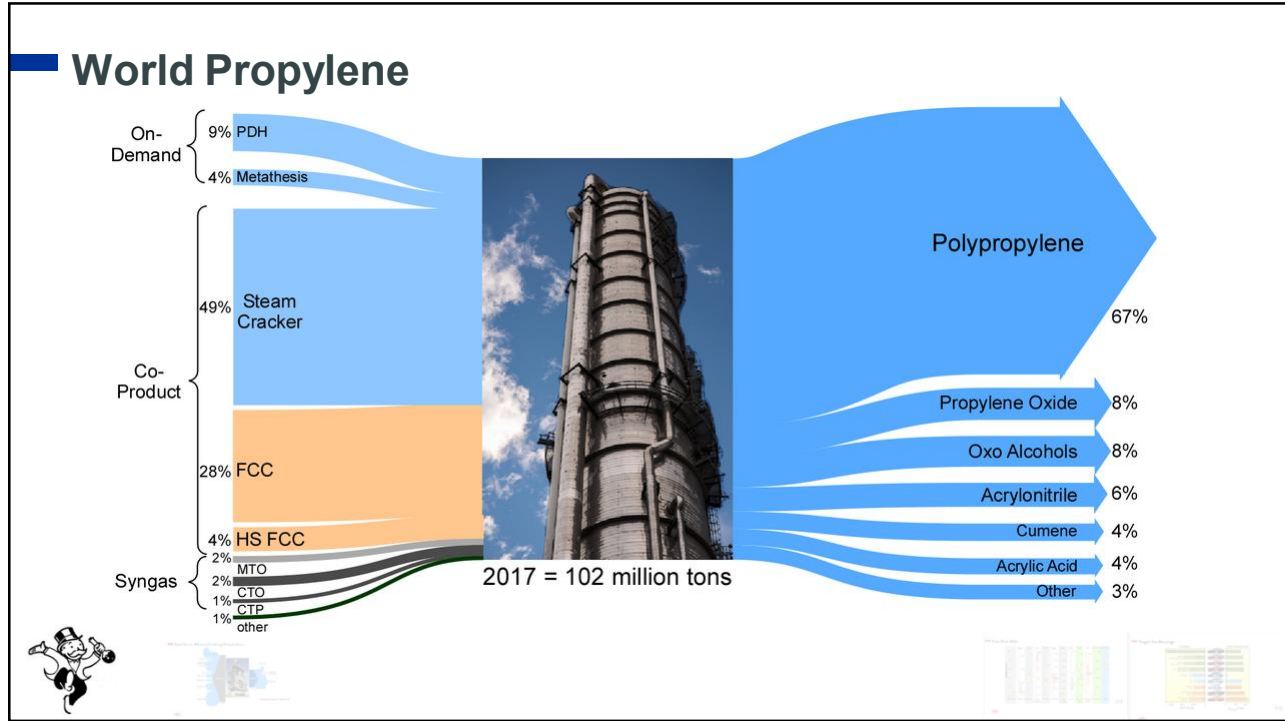
“

Everything should be made as simple as possible, but not simpler.

Albert Einstein

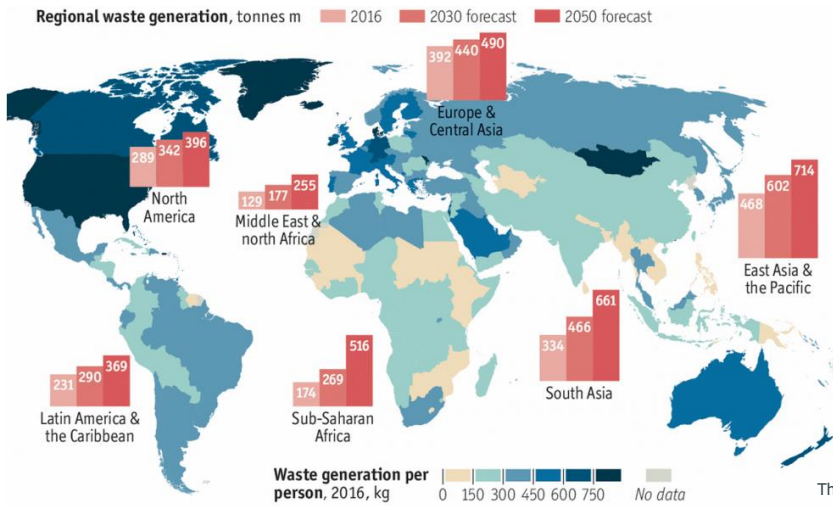
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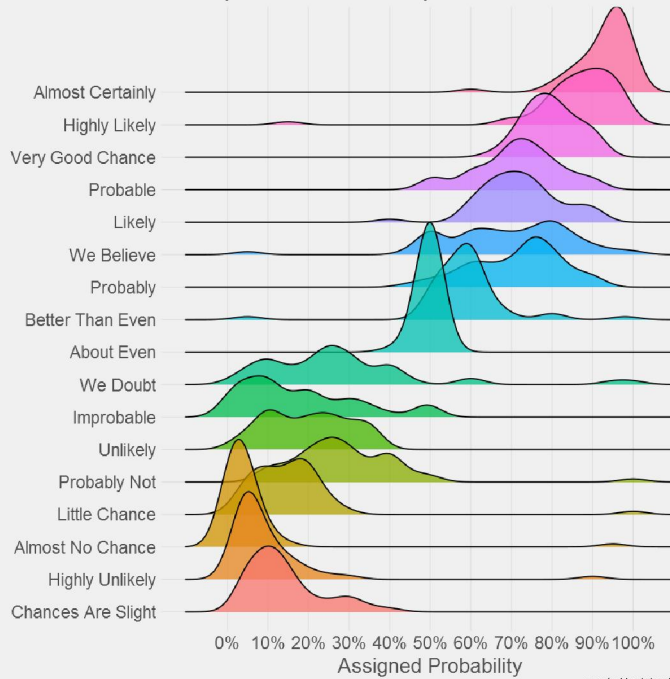




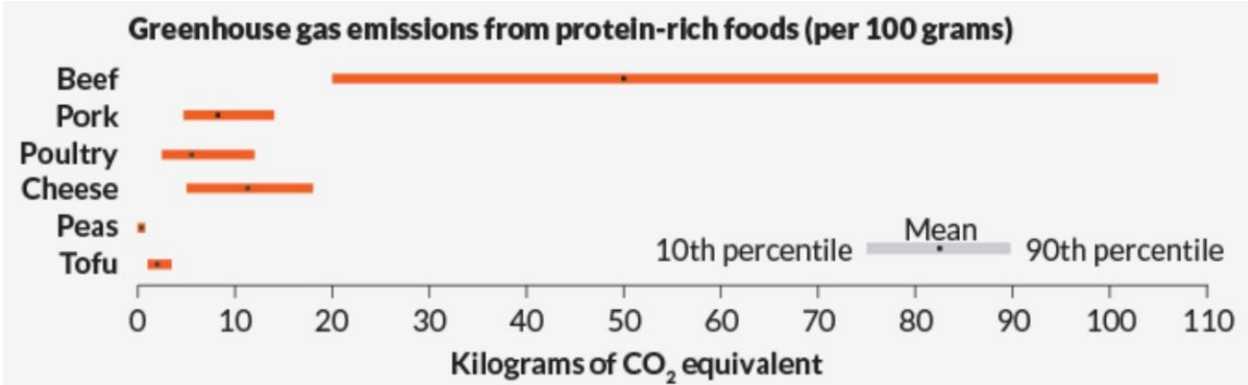
# Lots of Information – Throwing World



## Perceptions of Probability



## Farm to Table



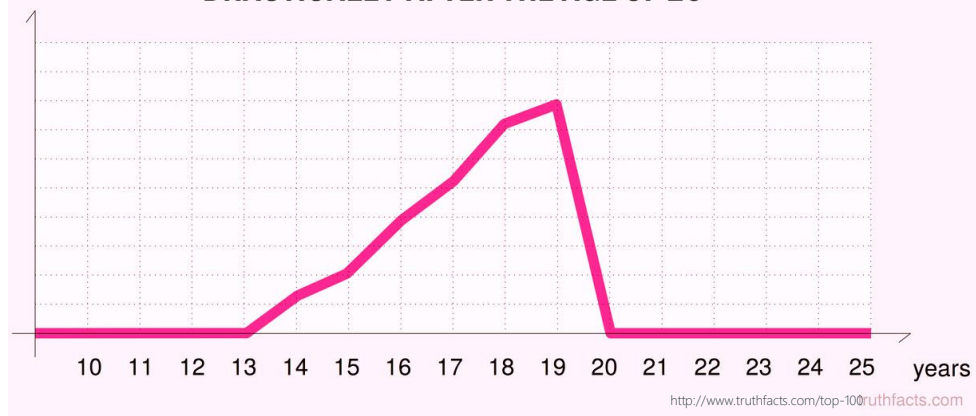
graphic by C. Chang in Milius, Susan; "Can science build a better burger?", *Science News*, September 20, 2018 downloaded from sciencenews.org/article/can-science-build-better-burger on 2 November 2018.



## Bad Graphs

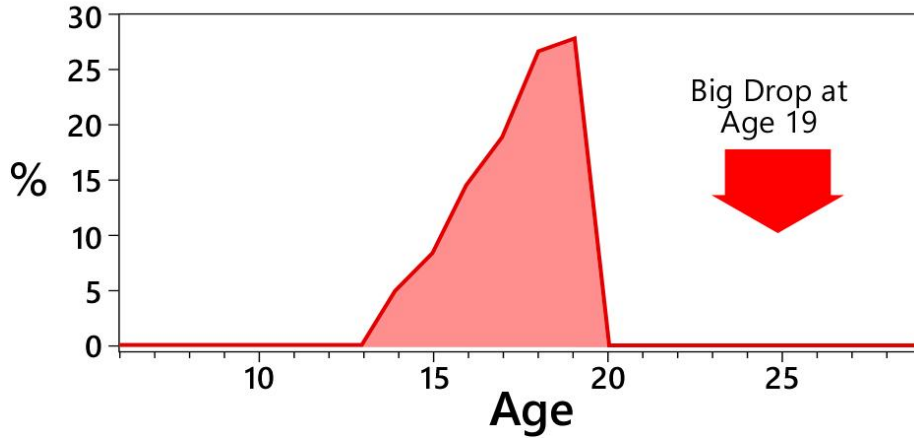


**STATISTICS SHOW THAT TEEN PREGNANCIES DROP DRASTICALLY AFTER THE AGE OF 20**

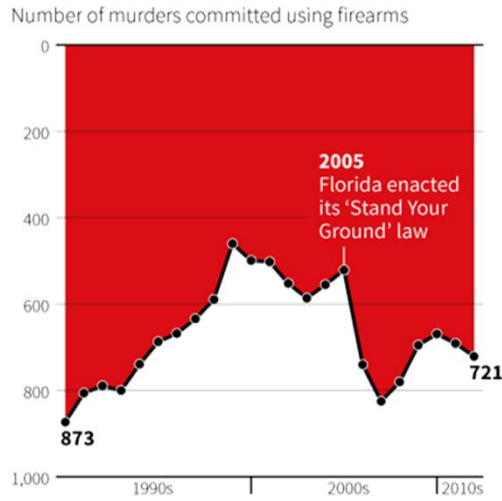


## Flawed Conclusion, But Better Graph

### Teen Pregnancy



## Gun deaths in Florida



methodsavvy.com/good-data-bad-graphs/

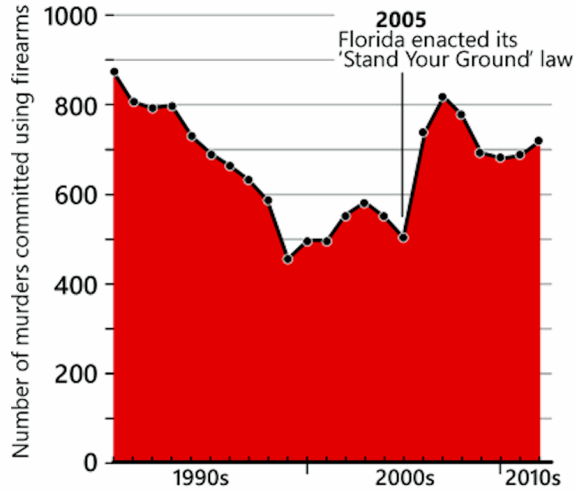
Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

REUTERS



## Gun deaths in Florida



Source: Florida Dept of Law Enforcement

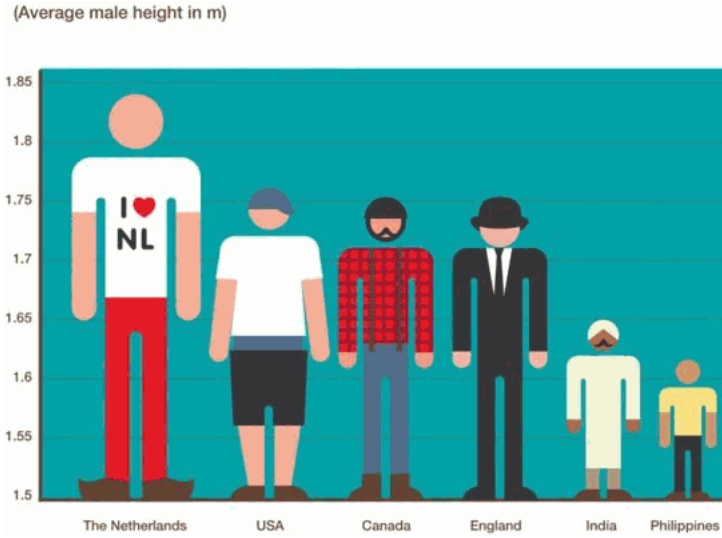


## Workshop Time

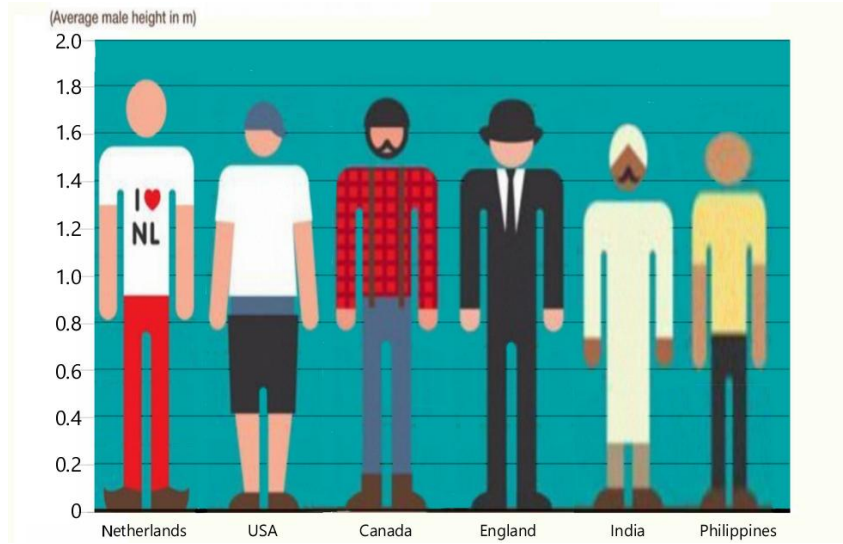
- Data Visualization 1a:** Comparison of heights in the rest of the world. A bar chart showing various human figures.
- Data Visualization 1b:** A map of the United States with different regions highlighted in various colors.
- Data Visualization 1c:** Americans who have tried marijuana. A pie chart showing percentages for 'YES' and 'NO'.
- Data Visualization 1d:** A horizontal bar chart with heart icons representing different categories.
- Data Visualization 2a:** A bar chart comparing sales of various fast-food chains like McDonald's, Burger King, and Wendy's.
- Data Visualization 2b:** A stacked area chart showing data over time with different colored layers.
- Data Visualization 2c:** A funnel chart showing a process flow with different colored segments.
- Data Visualization 2d:** A bar chart titled 'MOOSE' showing data for different categories.
- Data Visualization 3a:** A line graph titled 'Removals and Growth' showing trends from 2001 to 2014.
- Data Visualization 3b:** A 3D pyramid chart with different colored layers.
- Data Visualization 3c:** A 3D bar chart showing data for different categories.
- Data Visualization 3d:** A heatmap visualization with a grid of colored cells.



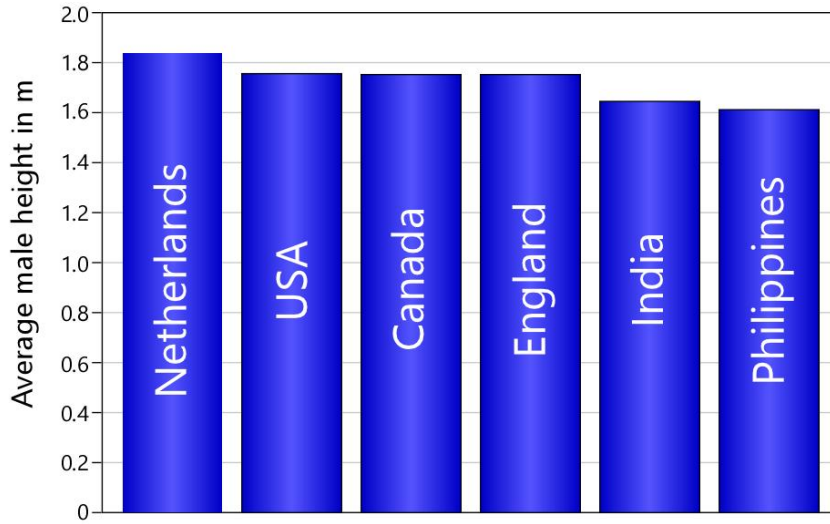
## Bad Graphs – Looking Down on the Rest of the World



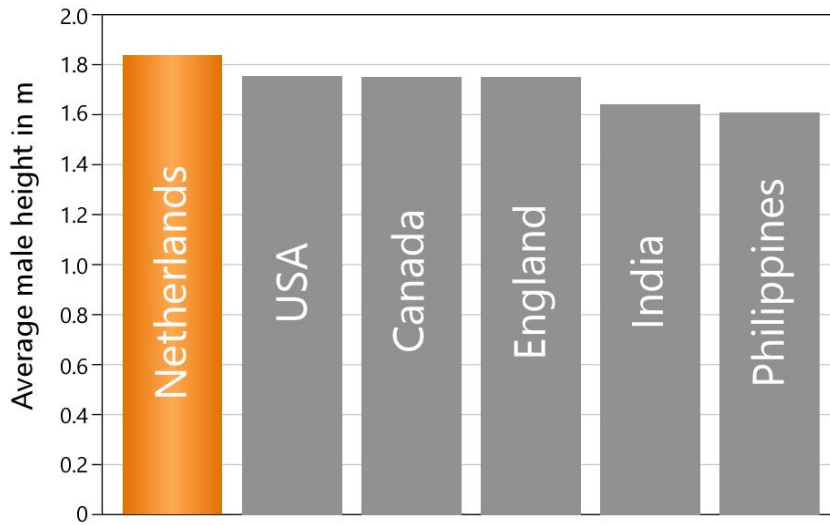
## Better – but not good enough

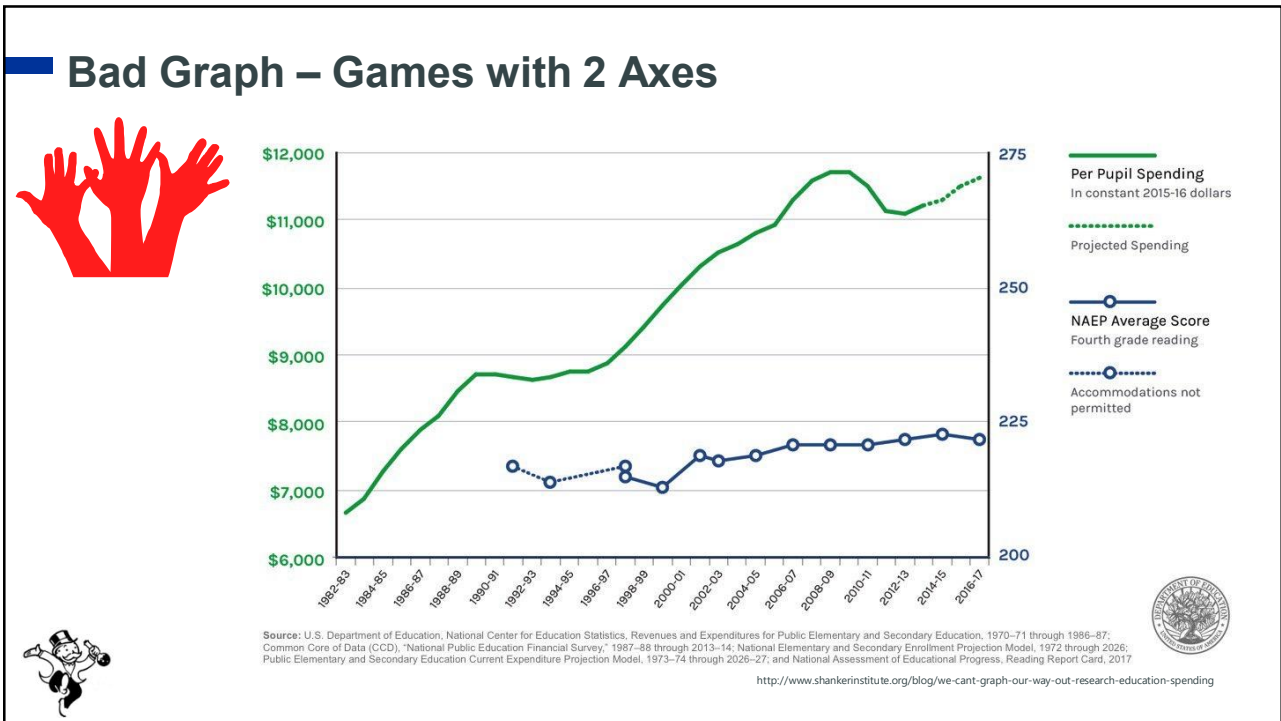
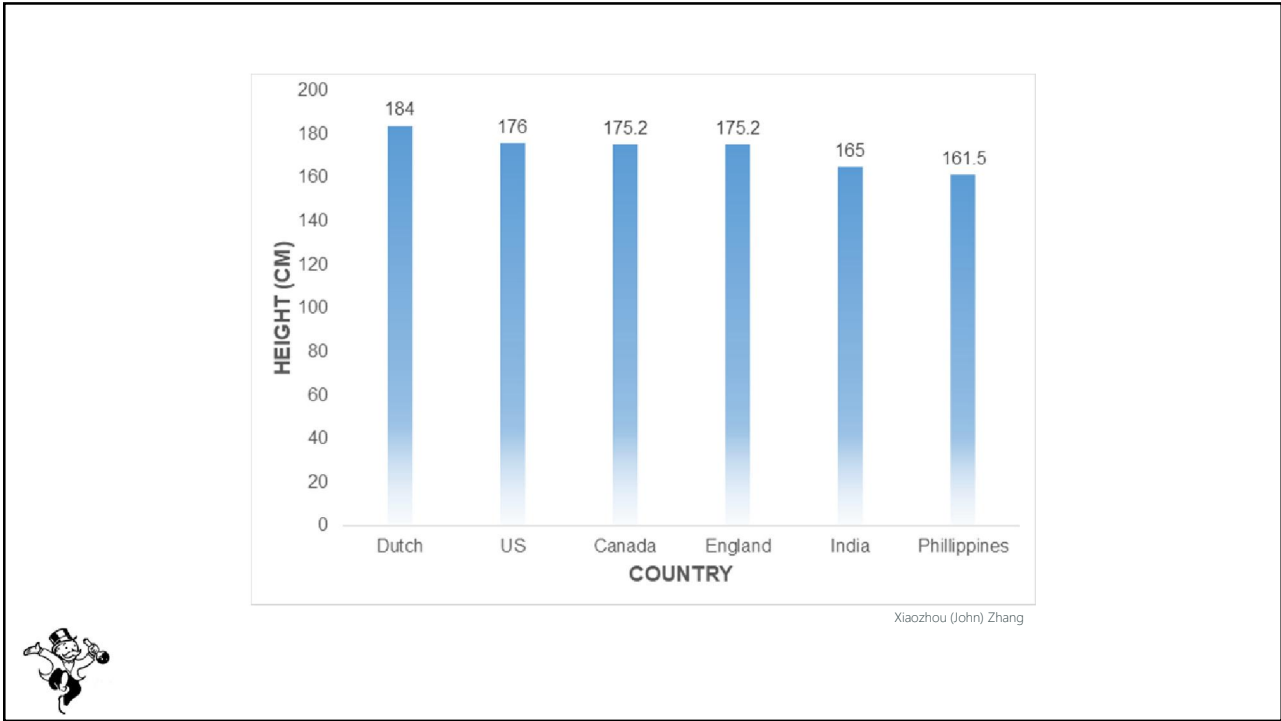


### Better Graph



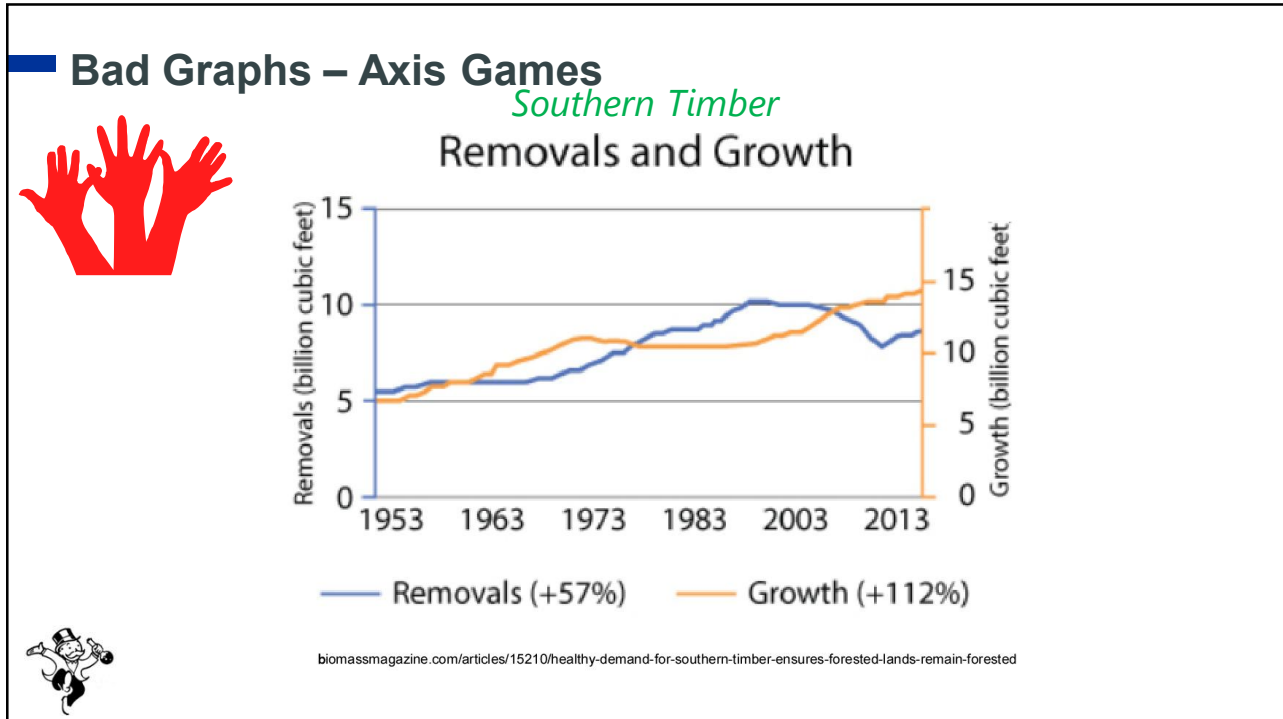
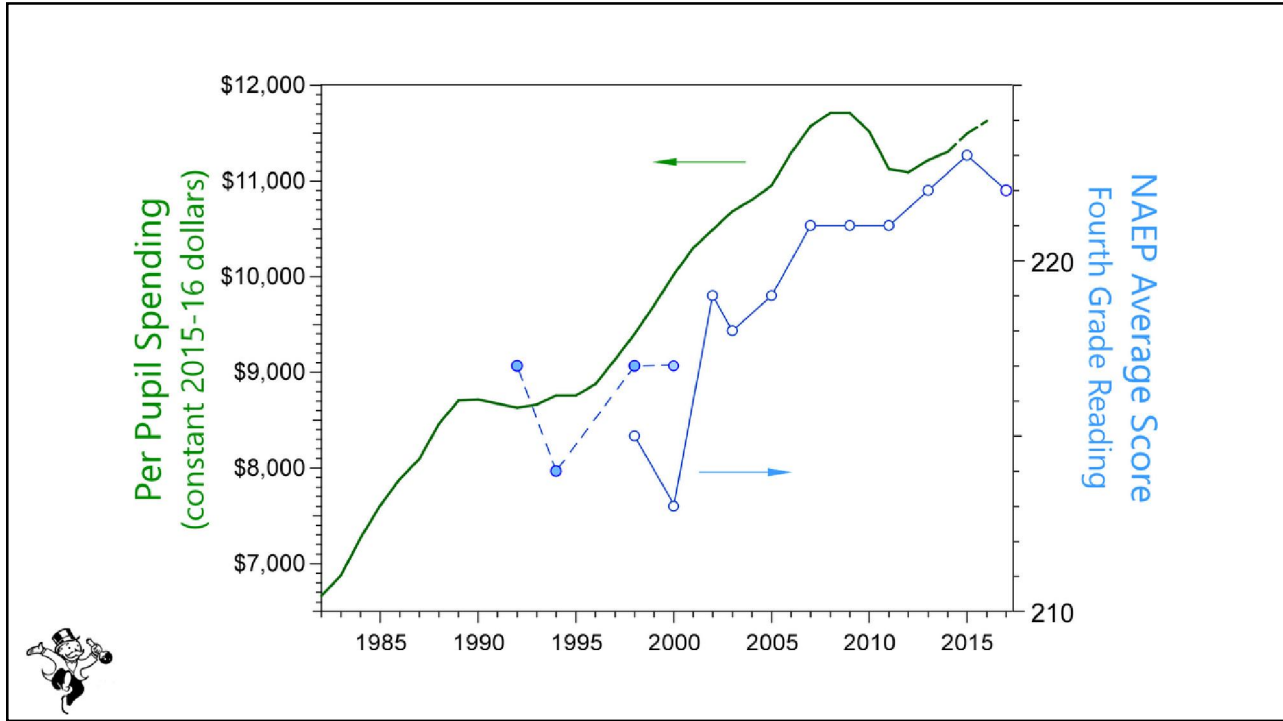
### Making the Point



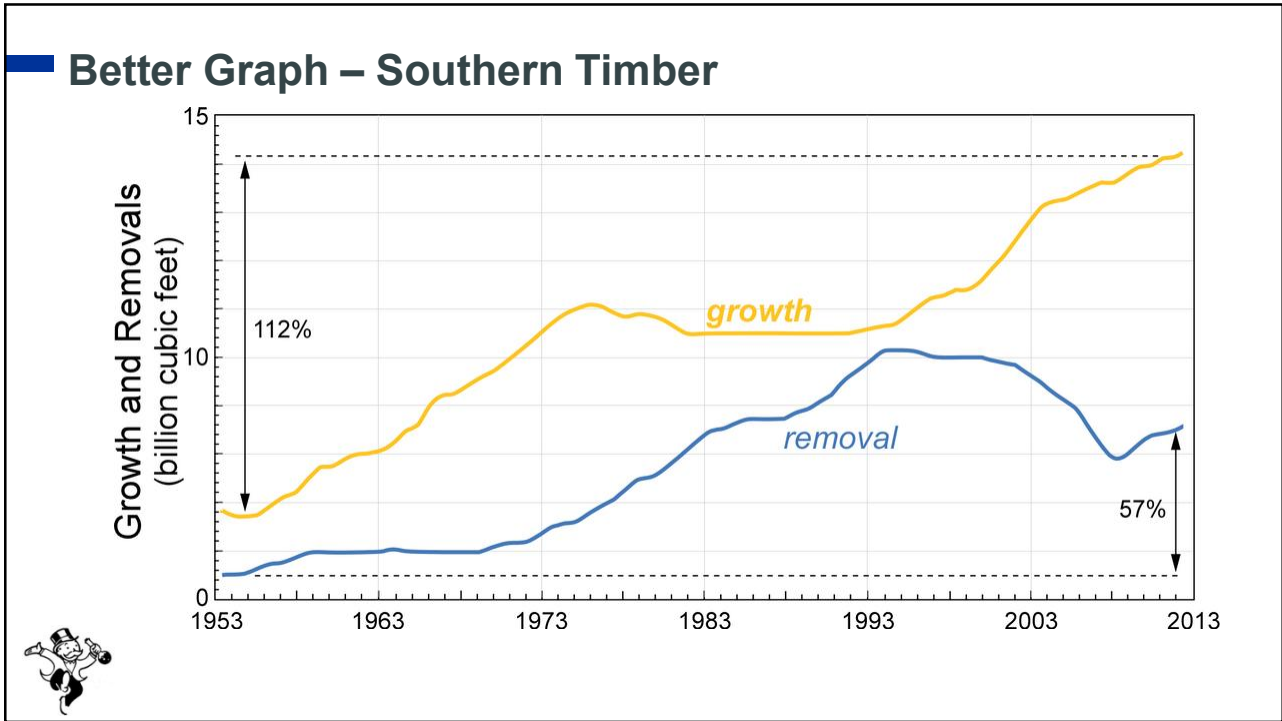
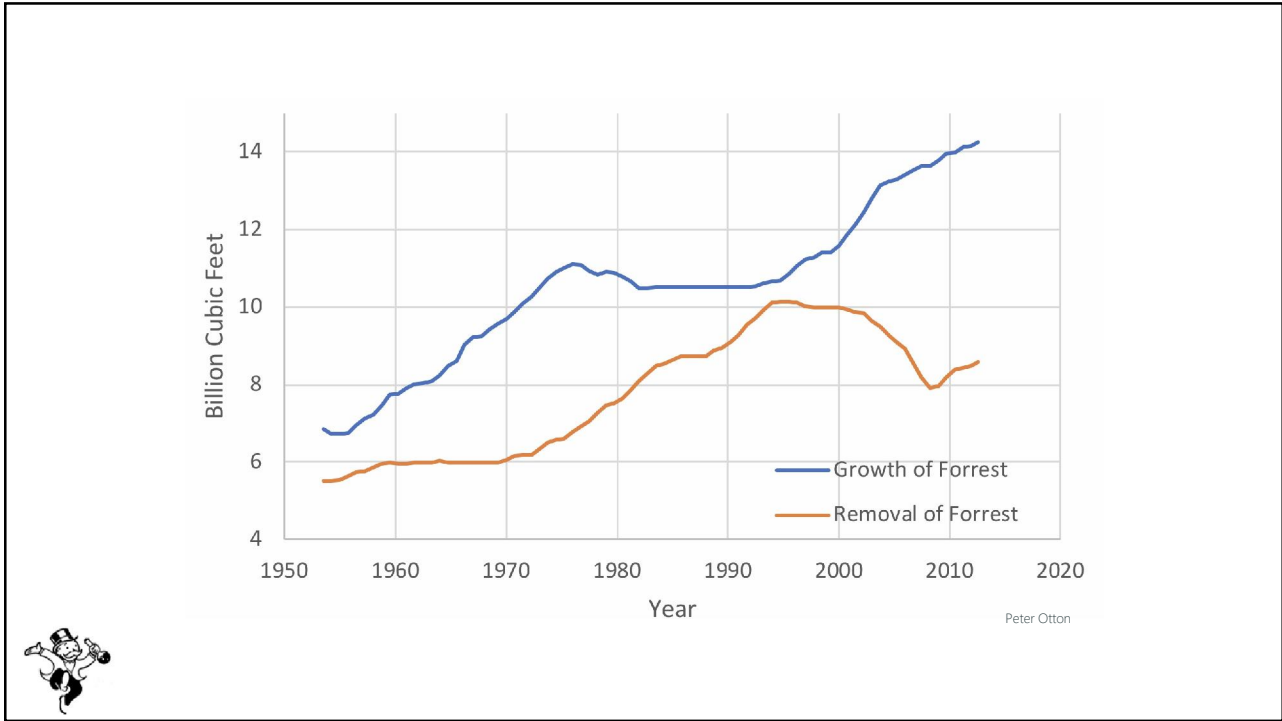


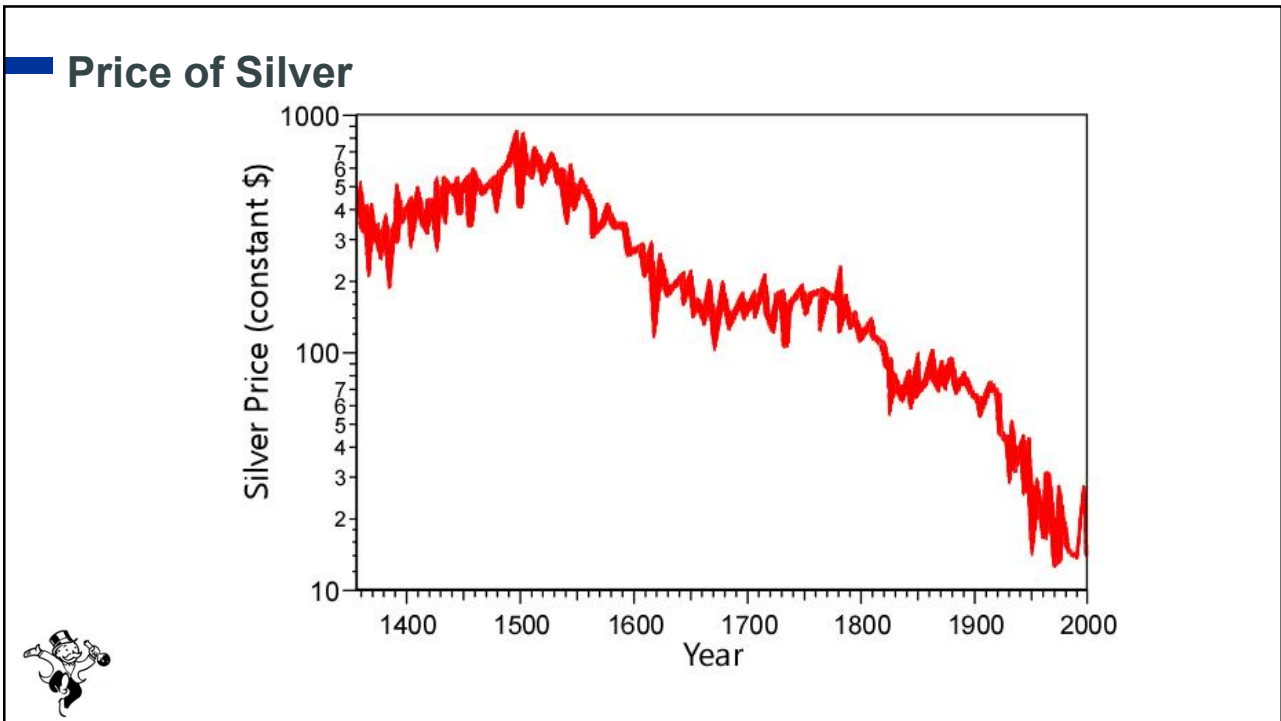
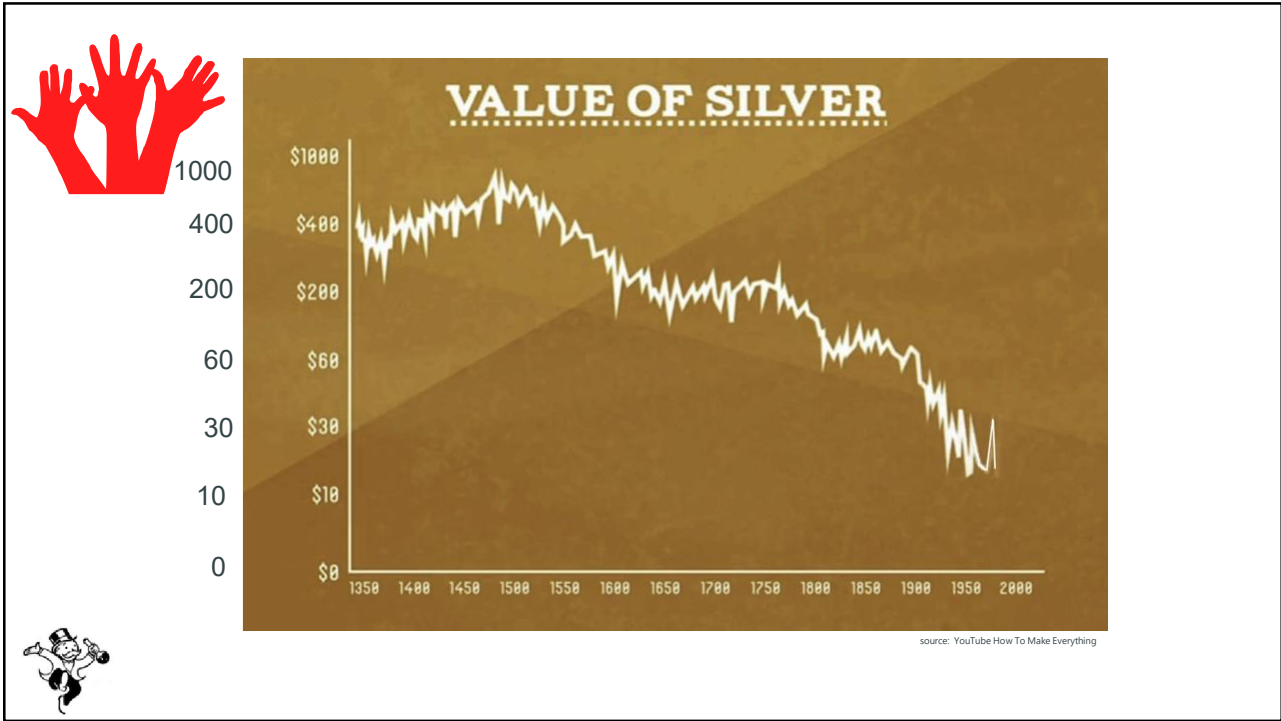
Source: U.S. Department of Education, National Center for Education Statistics, Revenues and Expenditures for Public Elementary and Secondary Education, 1970-71 through 1986-87; Common Core of Data (CCD), "National Public Education Financial Survey," 1987-88 through 2013-14; National Elementary and Secondary Enrollment Projection Model, 1972 through 2026; Public Elementary and Secondary Education Current Expenditure Projection Model, 1973-74 through 2026-27; and National Assessment of Educational Progress, Reading Report Card, 2017

<http://www.shankerinstitute.org/blog/we-cant-graph-our-way-out-research-education-spending>

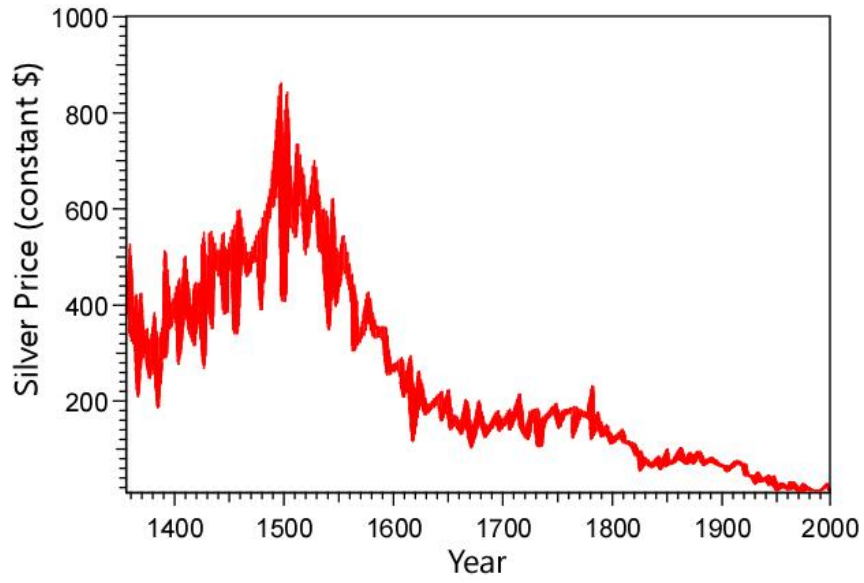




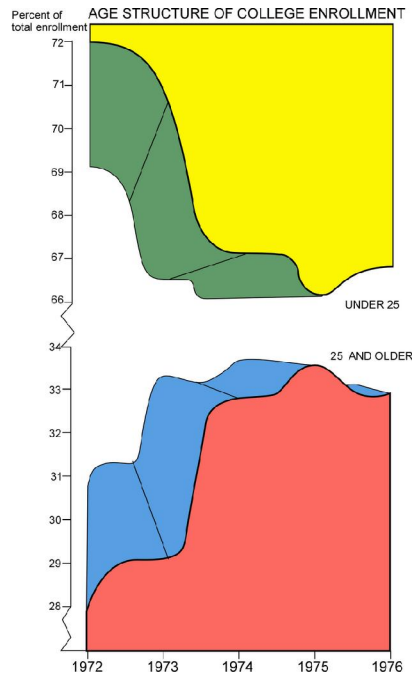


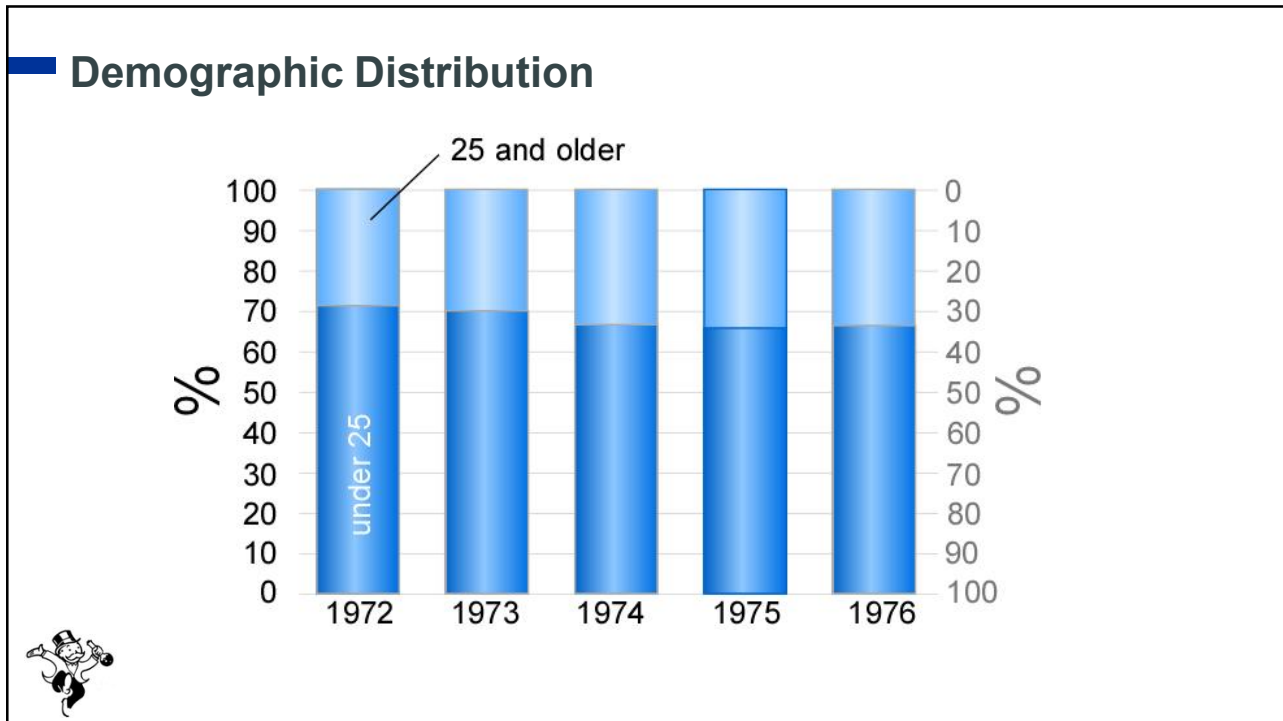
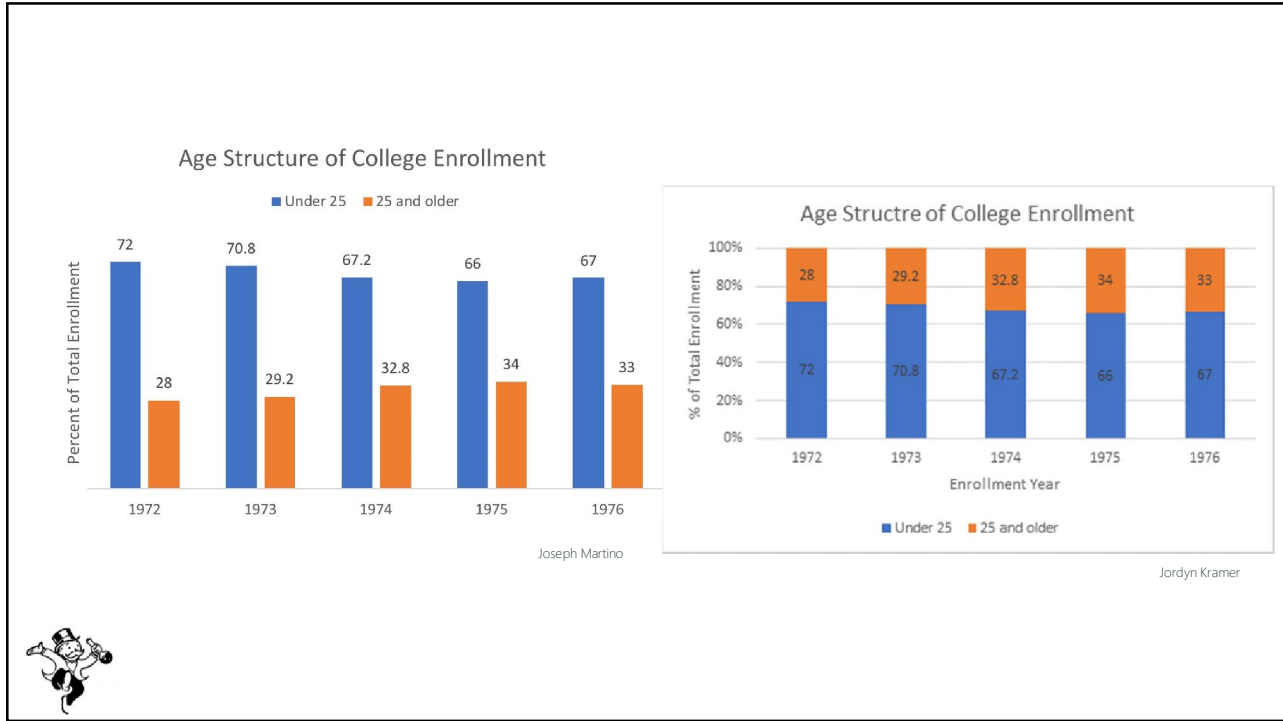


### Price of Silver

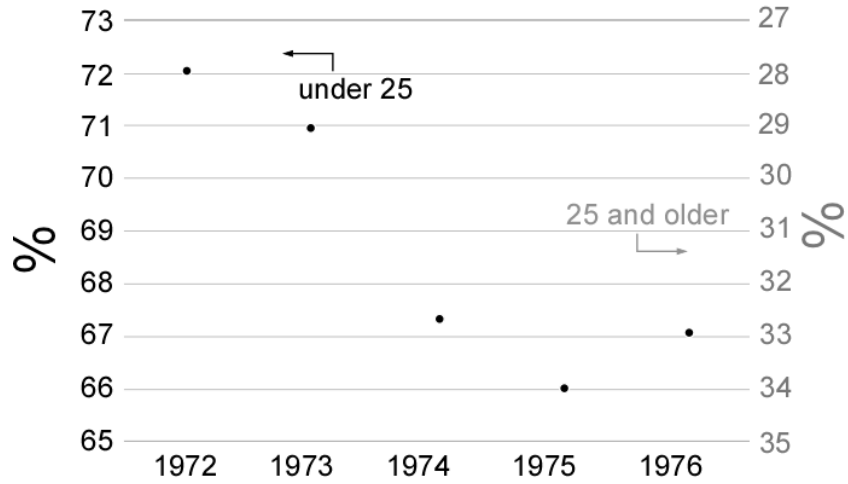


### Tufte Worst Plot Ever

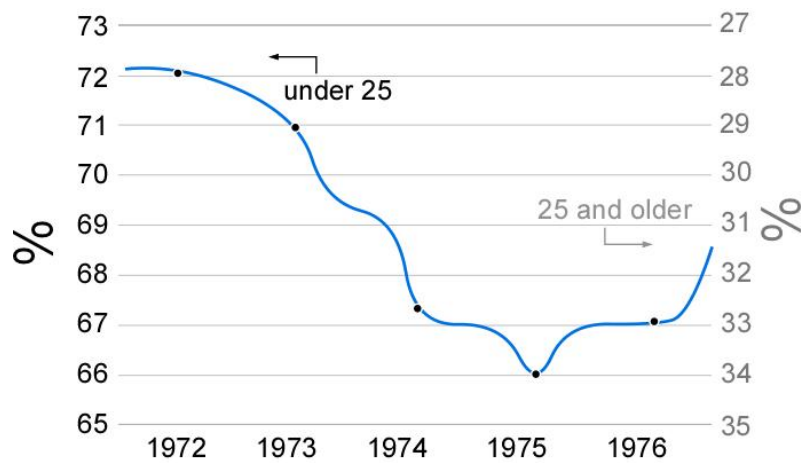




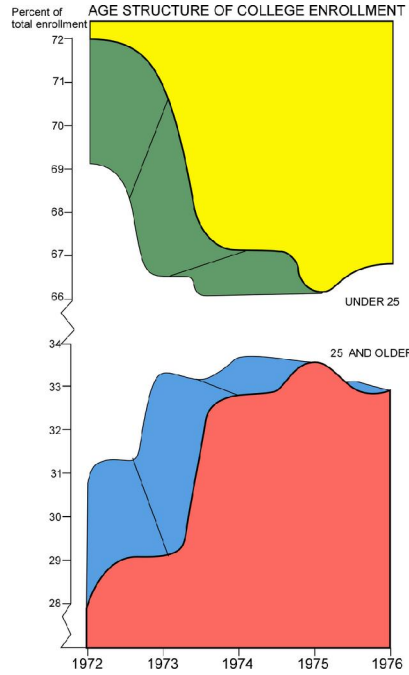
## Demographic Distribution



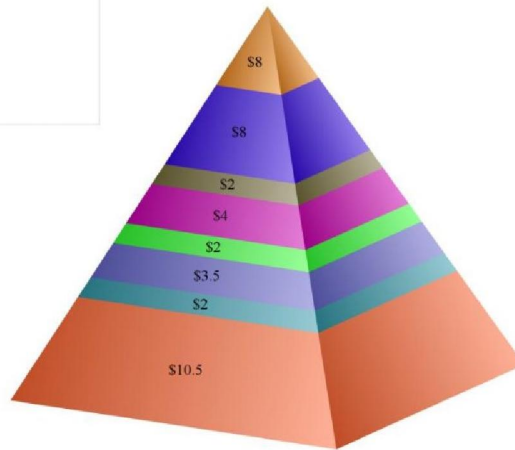
## Not Telling The Truth



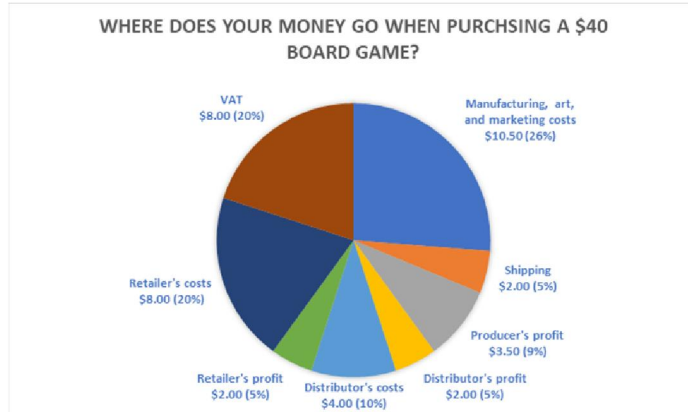
# Tufte Worst Plot Ever



- How does a \$40 board game costs split?
- Manufacturing, art and marketing costs
  - Shipping
  - Producer's profit
  - Distributor's profit
  - Distributor's costs
  - Retailer's profit
  - Retailer's costs
  - VAT



[www.reddit.com/r/datavisualization/comments/6br7jo/i\\_found\\_a\\_partsofthewhole\\_graph\\_that\\_is\\_even\\_more/](http://www.reddit.com/r/datavisualization/comments/6br7jo/i_found_a_partsofthewhole_graph_that_is_even_more/)



Allison Beth Goldberg

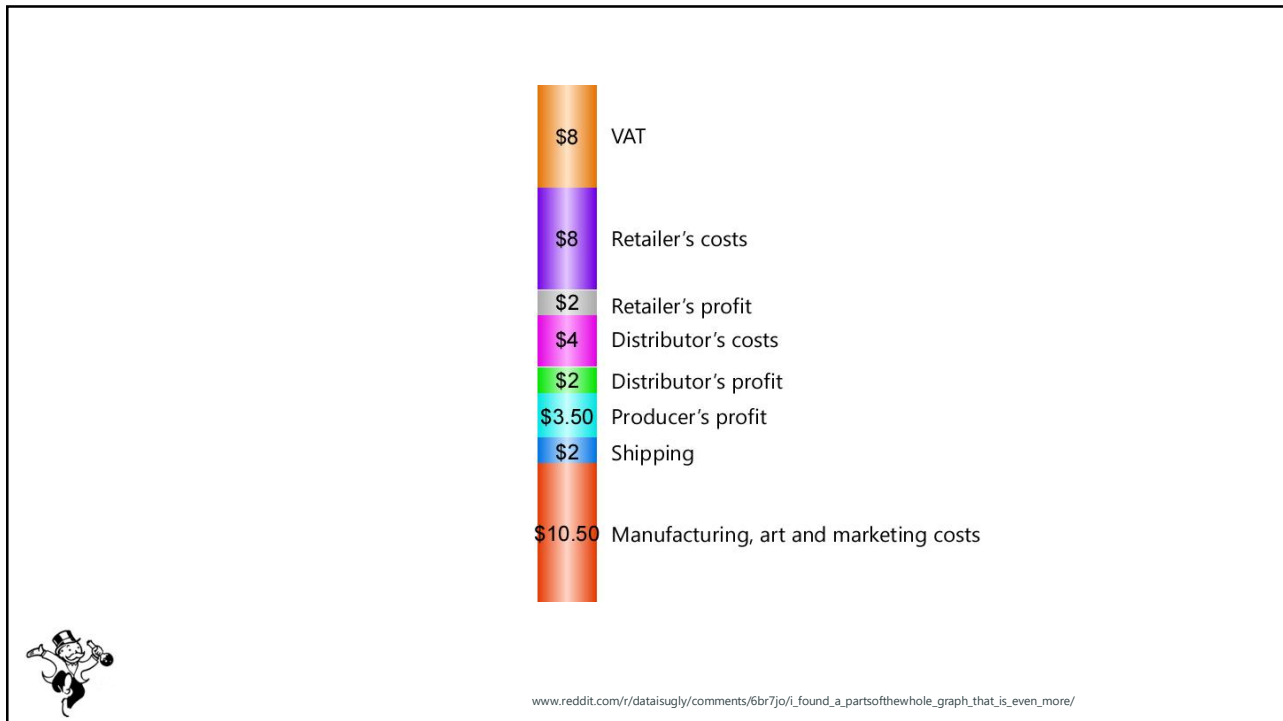


### How a \$40 Board Game's Costs Split

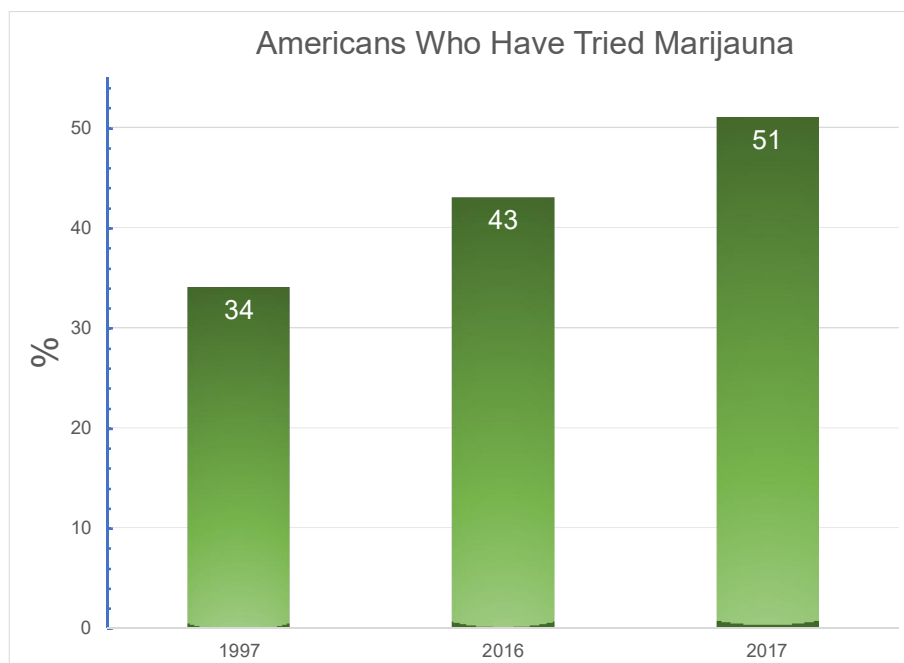
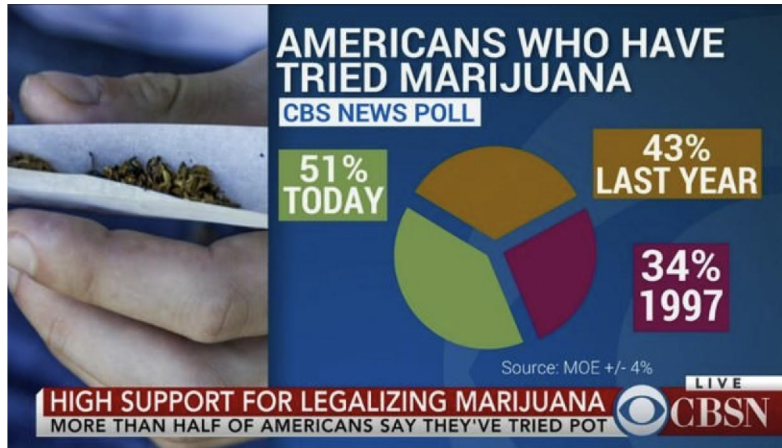


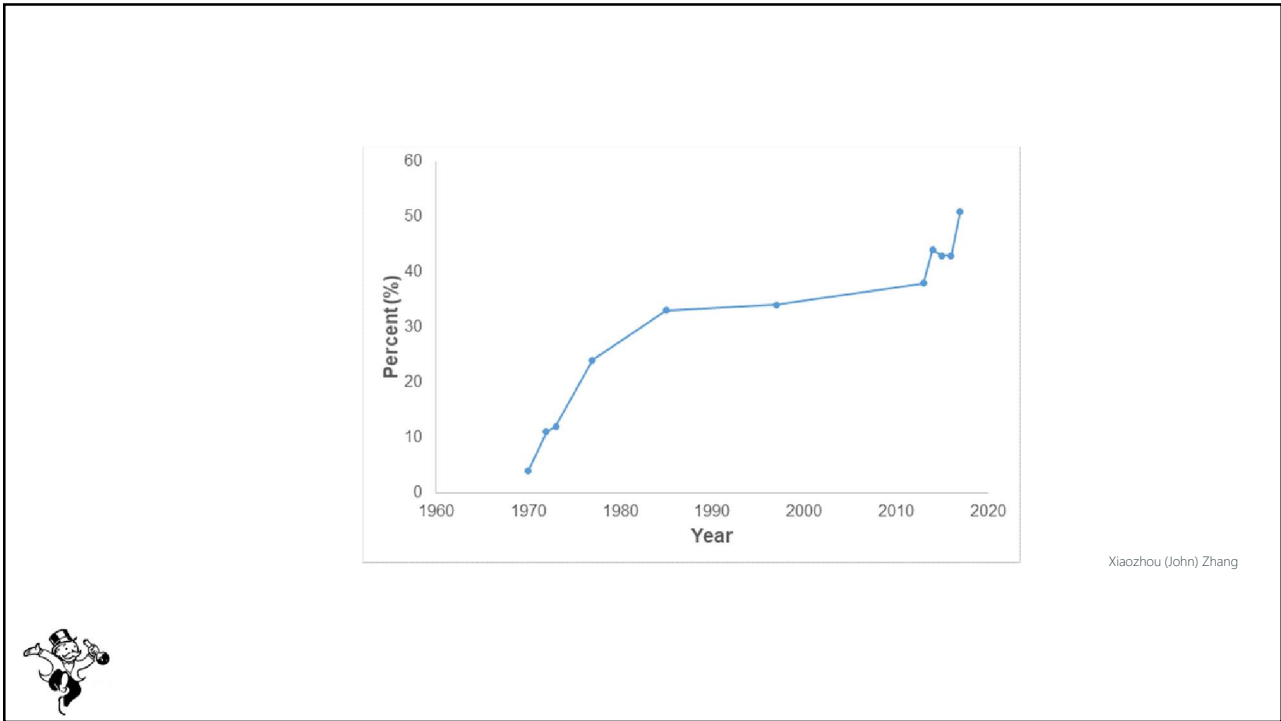
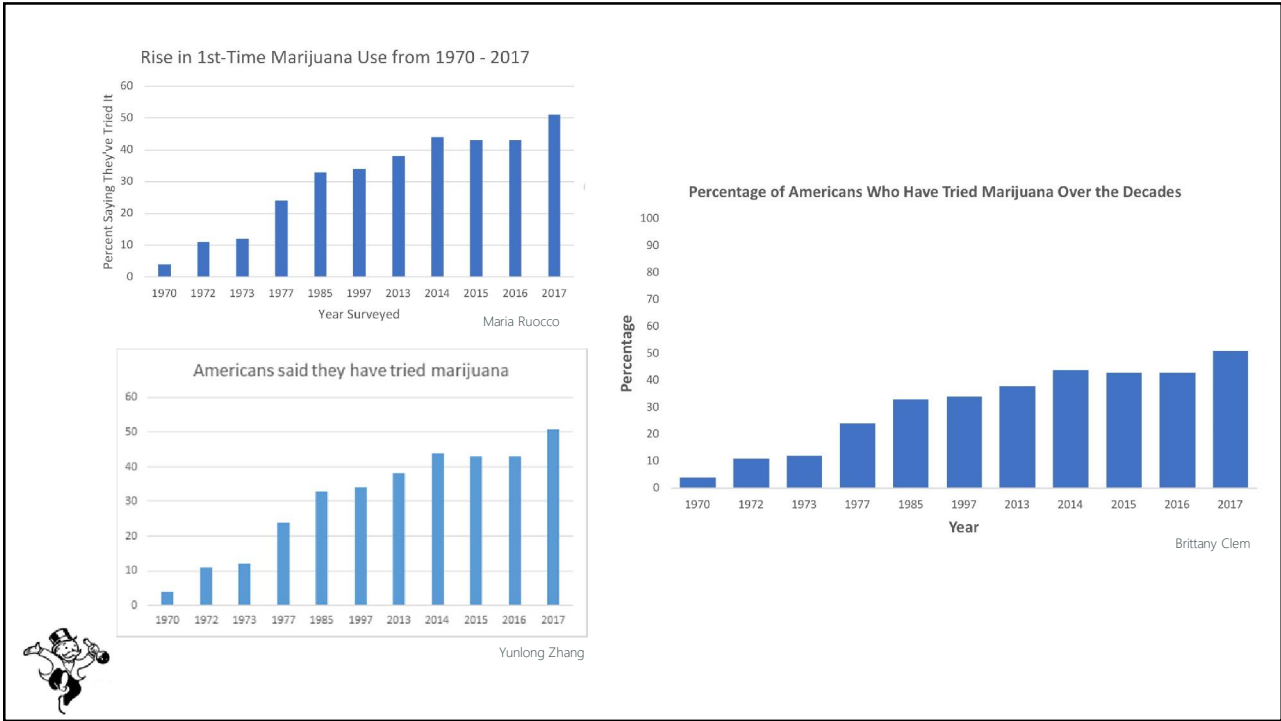
May Castro

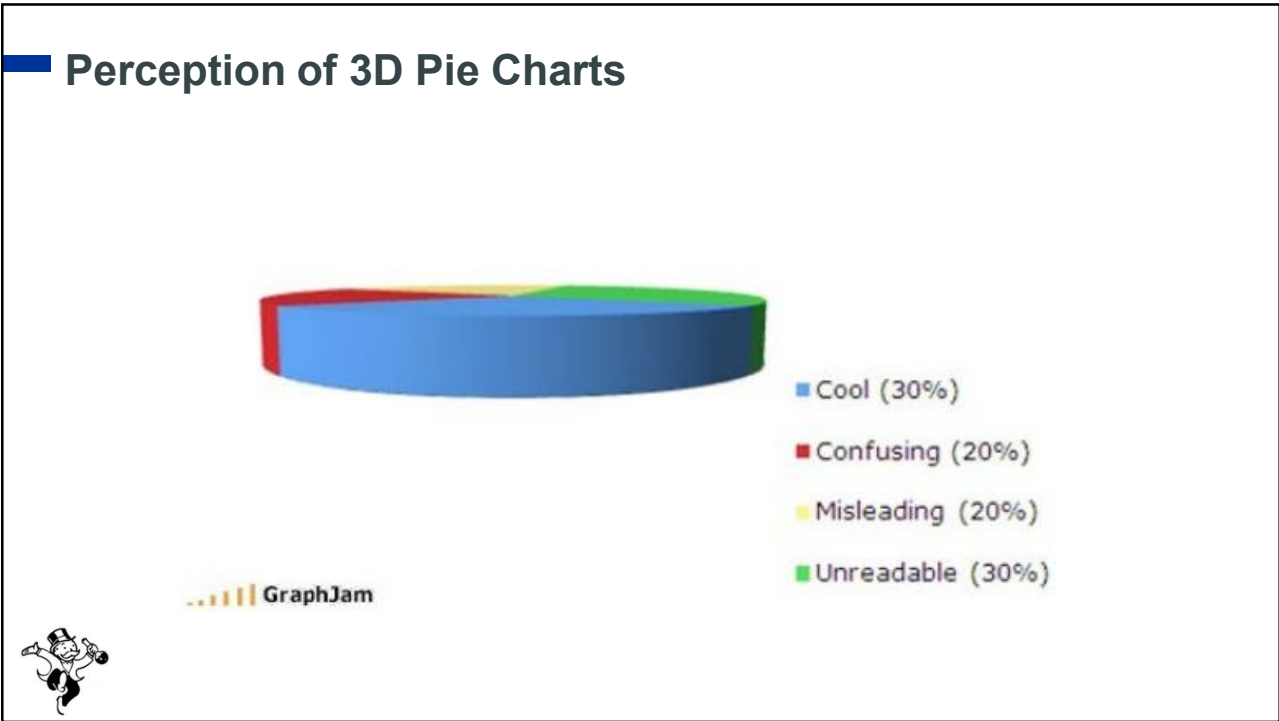
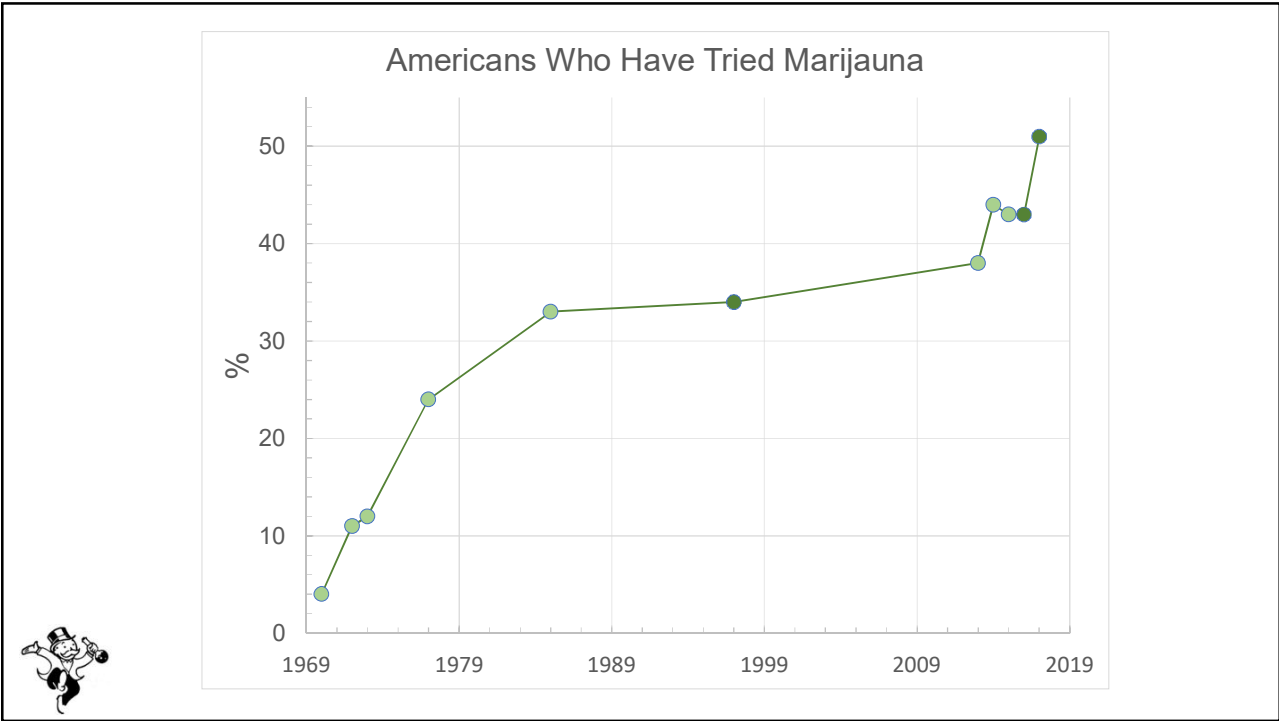




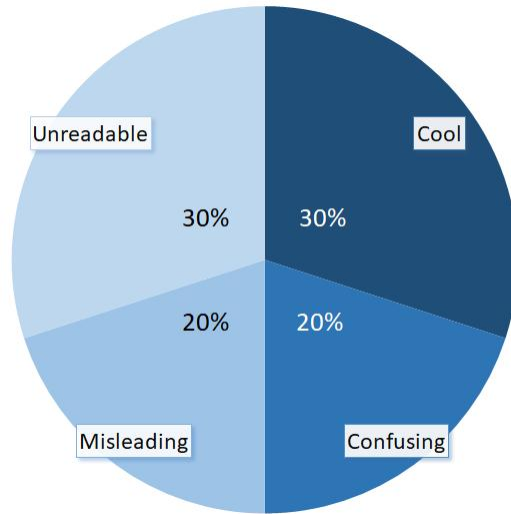








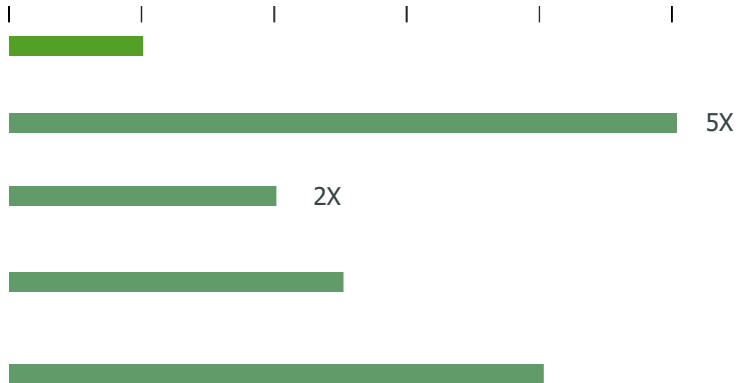
## Perception of 3D Pie Charts



Which one is 2X the top? 5X?



Which one is 2X the top? 5X?



Which one is 2X the top? 5X?



1

2.5

10

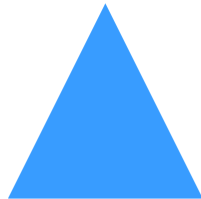
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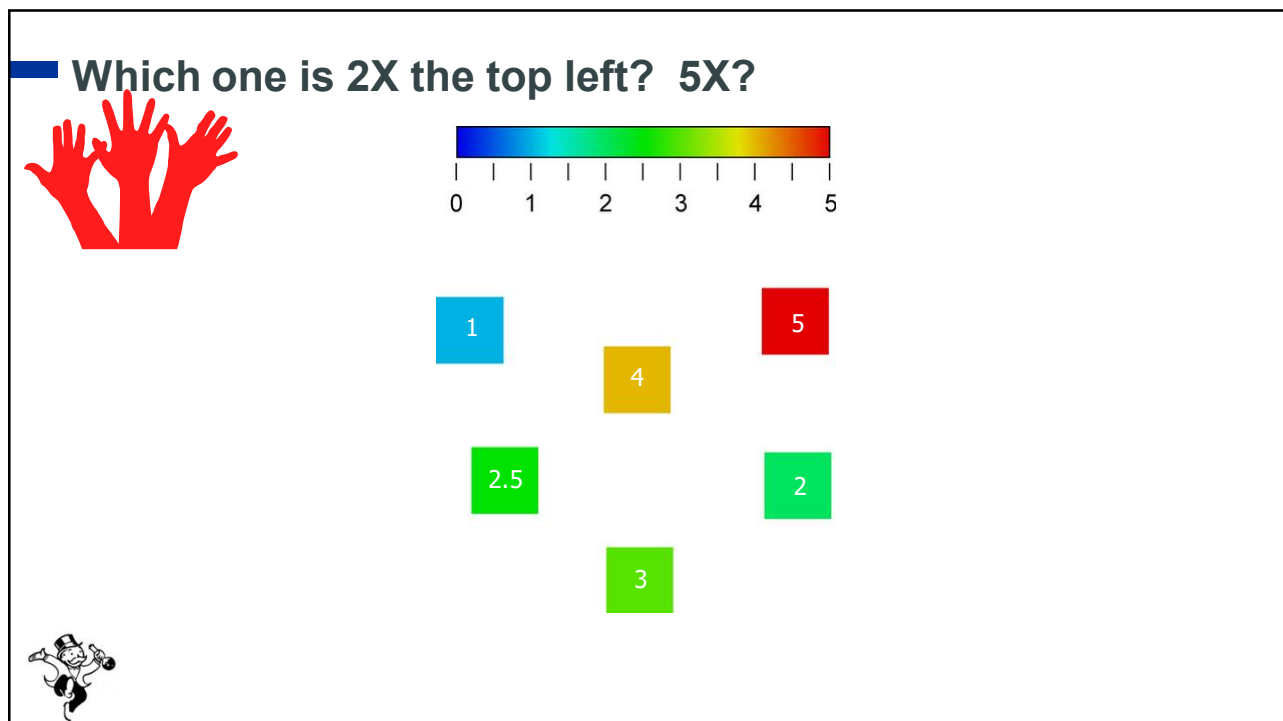
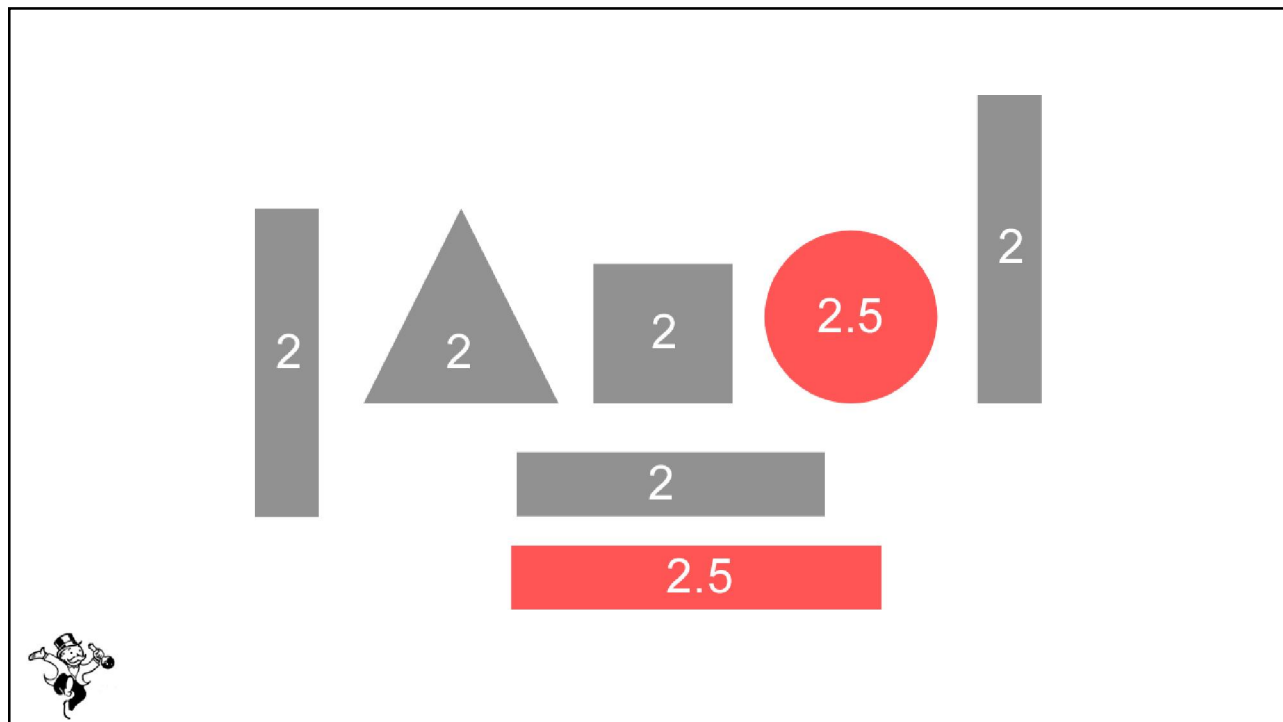
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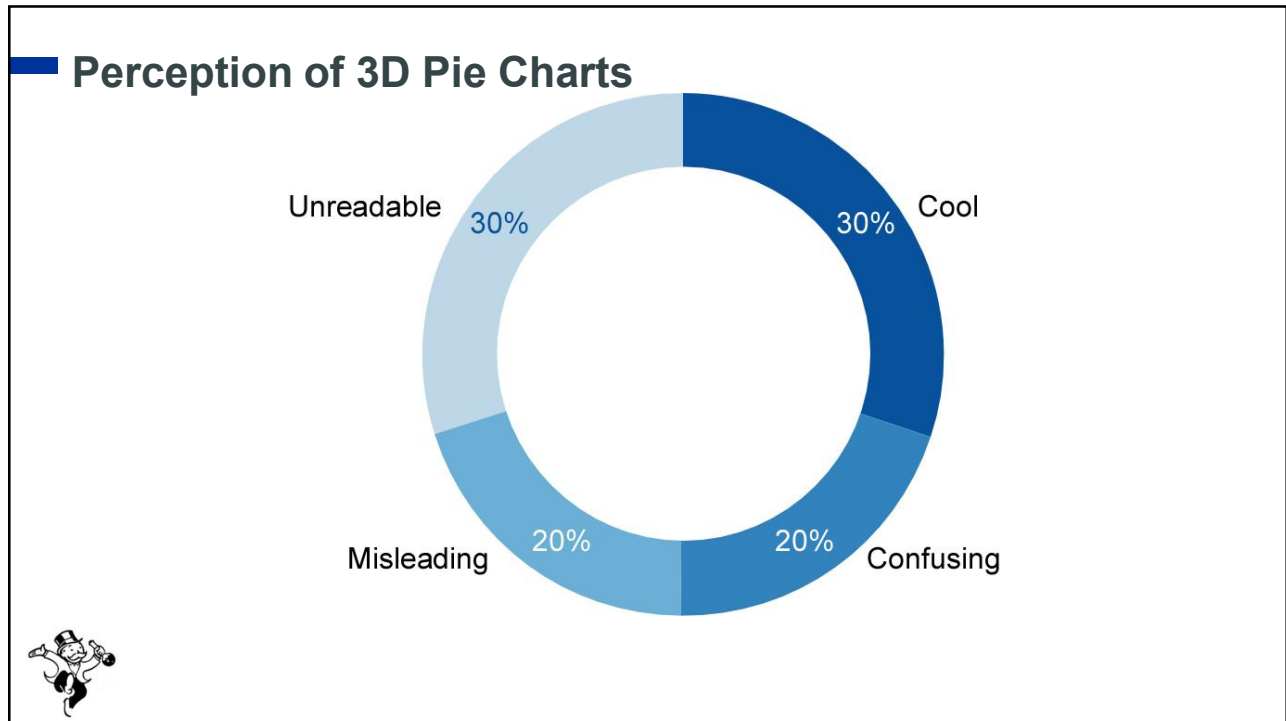
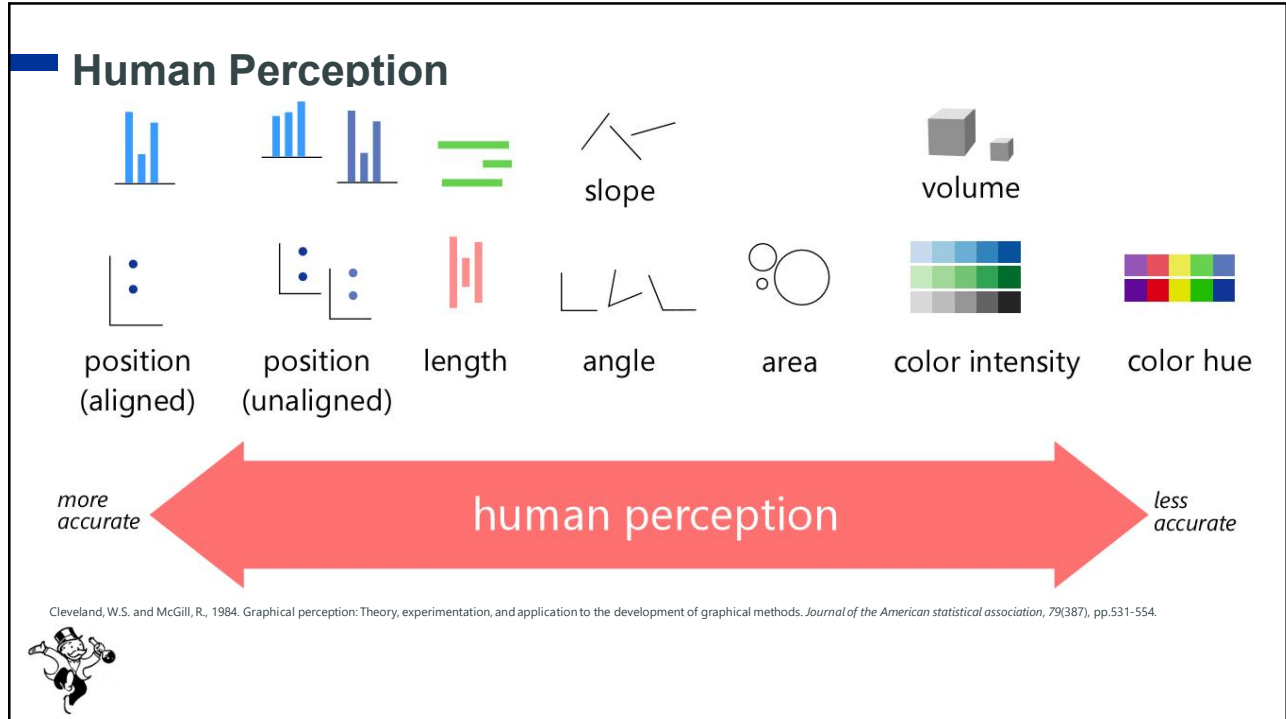
4



Which is largest?





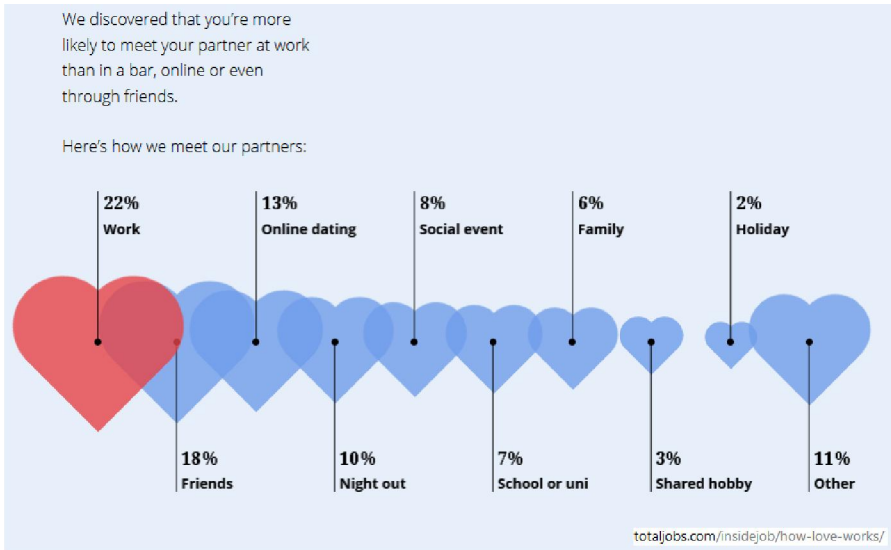


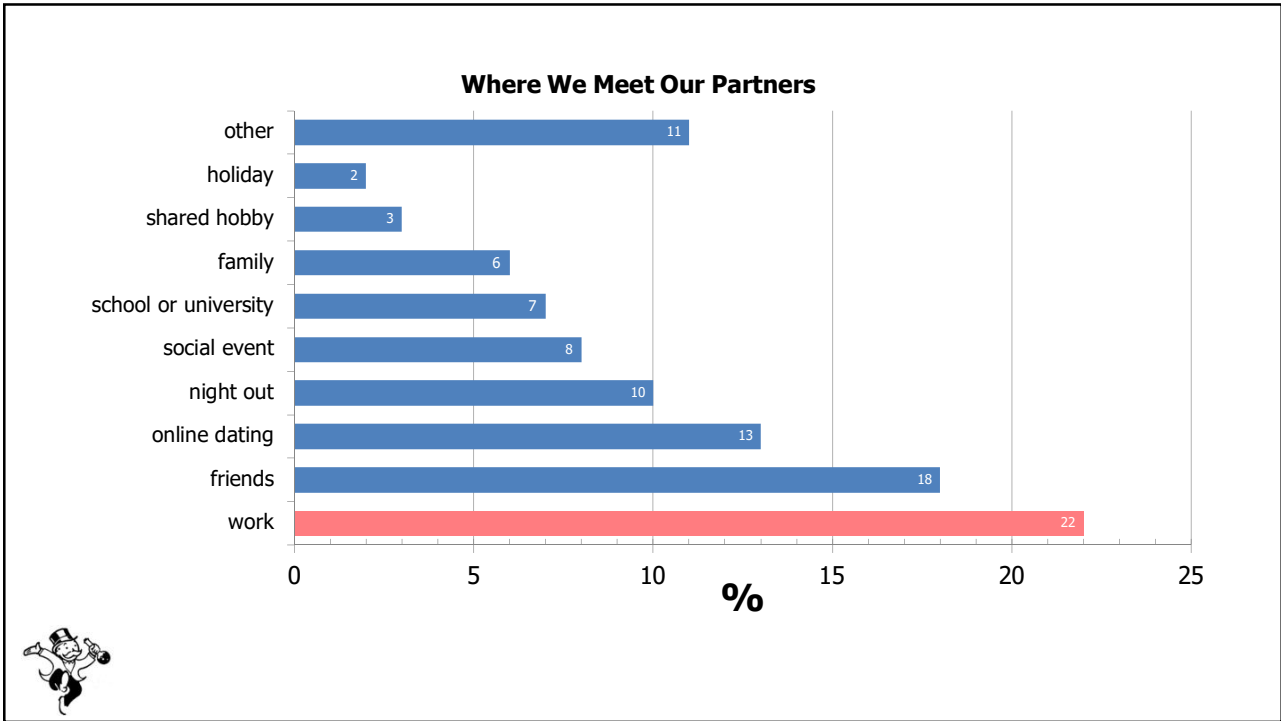
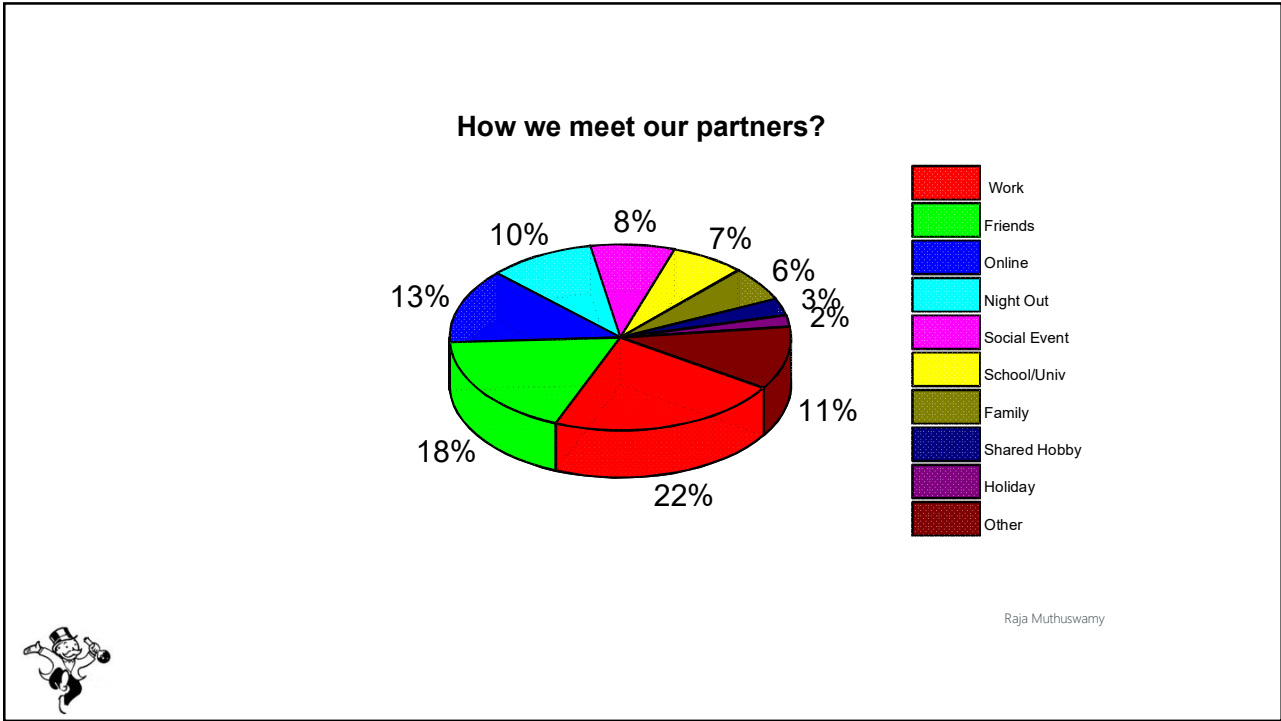


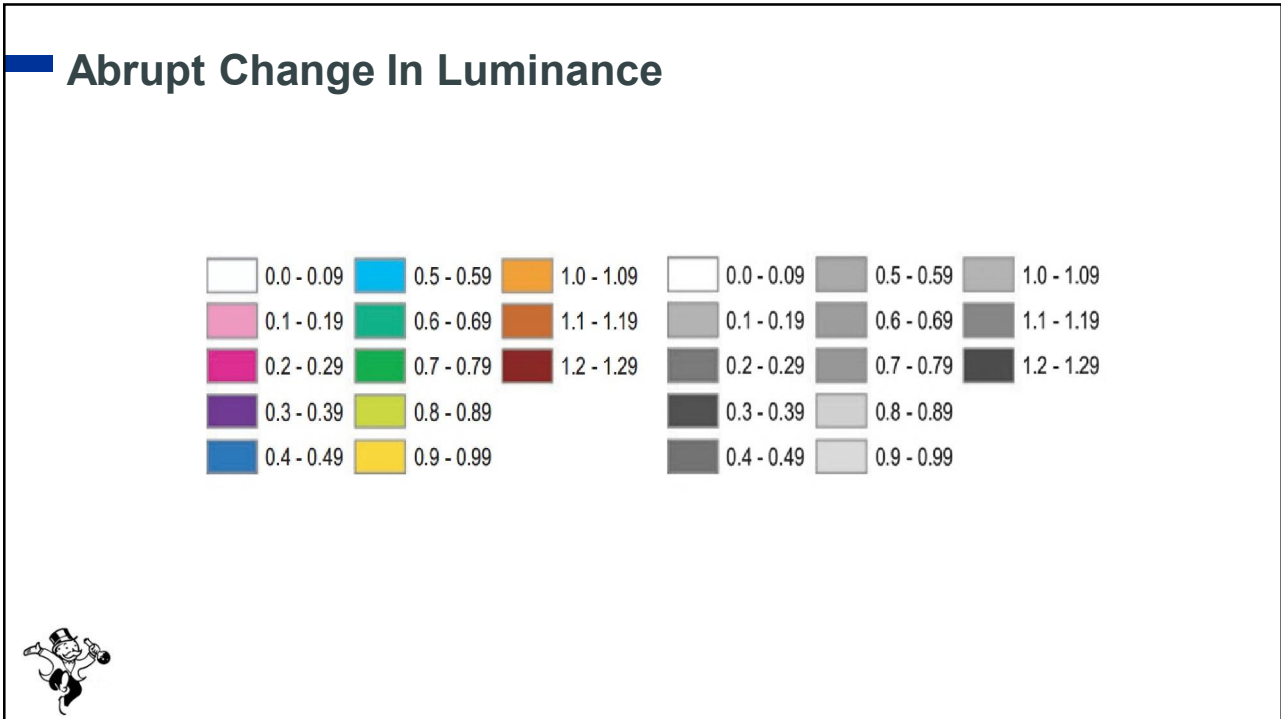
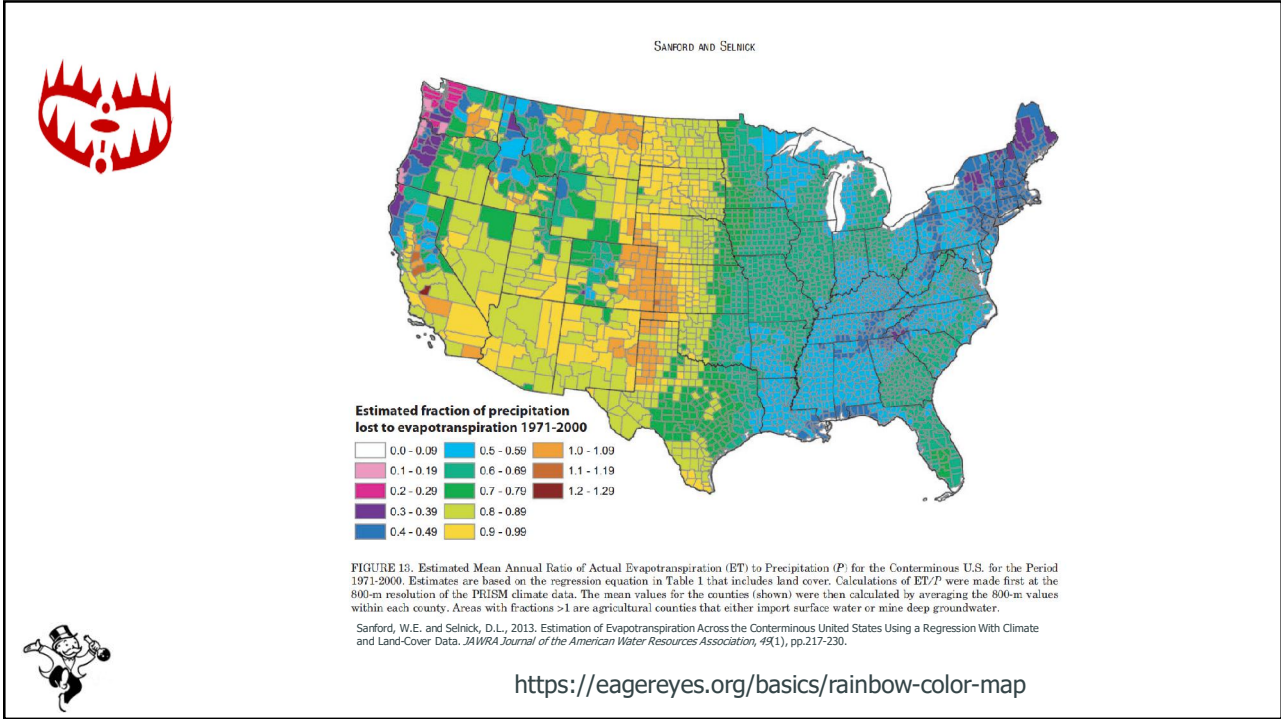
# Workshop Time

The grid contains 12 data visualization examples:

- Data Visualization 1a:** A bar chart titled "LOOKING DOWN ON THE REST OF THE WORLD" comparing heights of people from different countries.
- Data Visualization 1b:** A map of the United States with states colored in different colors.
- Data Visualization 2a:** A pie chart titled "AMERICANS WHO HAVE TRIED MARIJUANA" showing percentages for 1975, 2000, and 2010.
- Data Visualization 2b:** A horizontal bar chart showing the number of people who have tried marijuana in different years.
- Data Visualization 3a:** A bar chart comparing the number of McDonald's and Burger King restaurants in different countries.
- Data Visualization 3b:** A stacked area chart showing the growth of different categories over time.
- Data Visualization 4a:** A funnel chart showing the distribution of different categories.
- Data Visualization 4b:** A bar chart showing the number of people who have tried marijuana in different years.
- Data Visualization 5a:** A line graph titled "Removals and Growth" showing trends from 2003 to 2013.
- Data Visualization 5b:** A 3D pyramid chart showing the distribution of different categories.
- Data Visualization 6a:** A 3D pie chart showing the distribution of different categories.
- Data Visualization 6b:** A heatmap showing the distribution of different categories.







**Number of data classes:** 4

**Nature of your data:**  sequential  diverging  qualitative

**Pick a color scheme:** Multi-hue: [Color swatches] Single hue: [Color swatches]

**Only show:**  colorblind safe  print friendly  photocopy safe

**Context:**  roads  cities  borders

**Background:**  solid color  terrain

**4-class BuGn**  
 #edf6fb  
 #b2e2e2  
 #66c2a4  
 #238b45

**EXPORT**

**HEX** [dropdown]

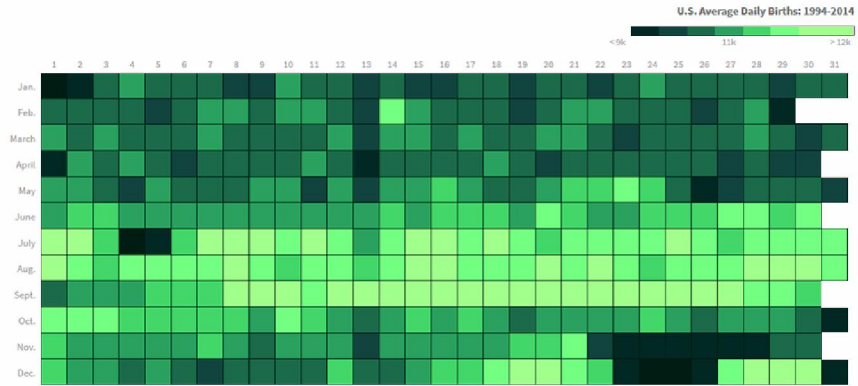
© Cynthia Brewer, Mark Harrower and The Pennsylvania State University  
[Source code and feedback](#)  
[Back to Flash version](#)  
[Back to ColorBrewer 1.0](#)

axismaps



### HOW POPULAR IS YOUR BIRTHDAY?

Two decades of American birthdays, averaged by month and day.



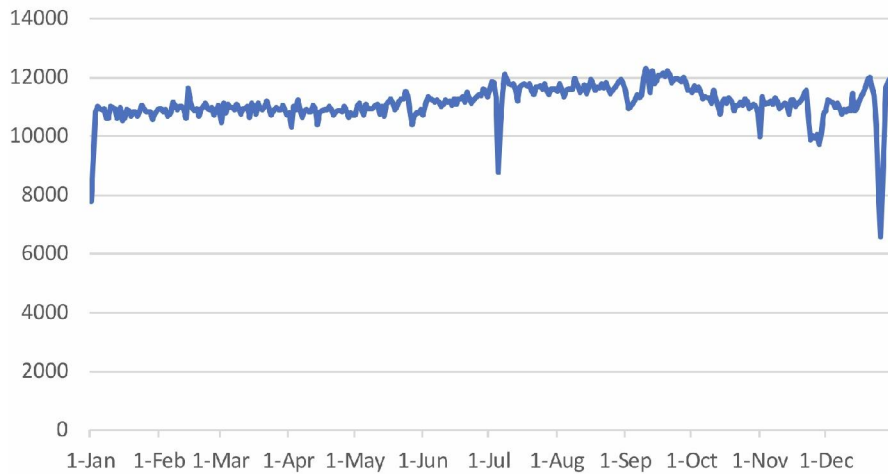
Notes: The conception date, purely for illustration, is 266 days prior to birth. It represents a hypothetical "moment of conception" based on the normal gestation period for humans, 280 days, minus the average time for ovulation, two weeks.

Data: U.S. National Center for Health Statistics (1994-2003); U.S. Social Security Administration (2004-2014) — via FiveThirtyEight

Credit: Matt Stiles/The Daily Viz



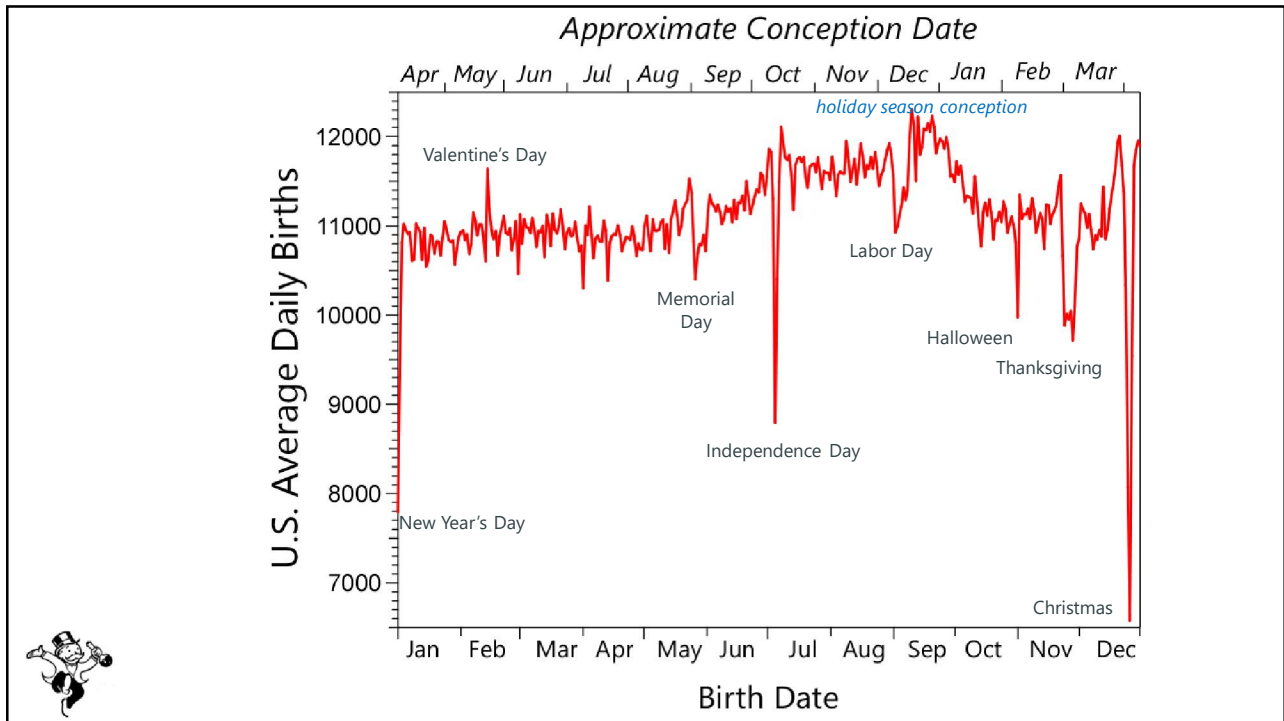
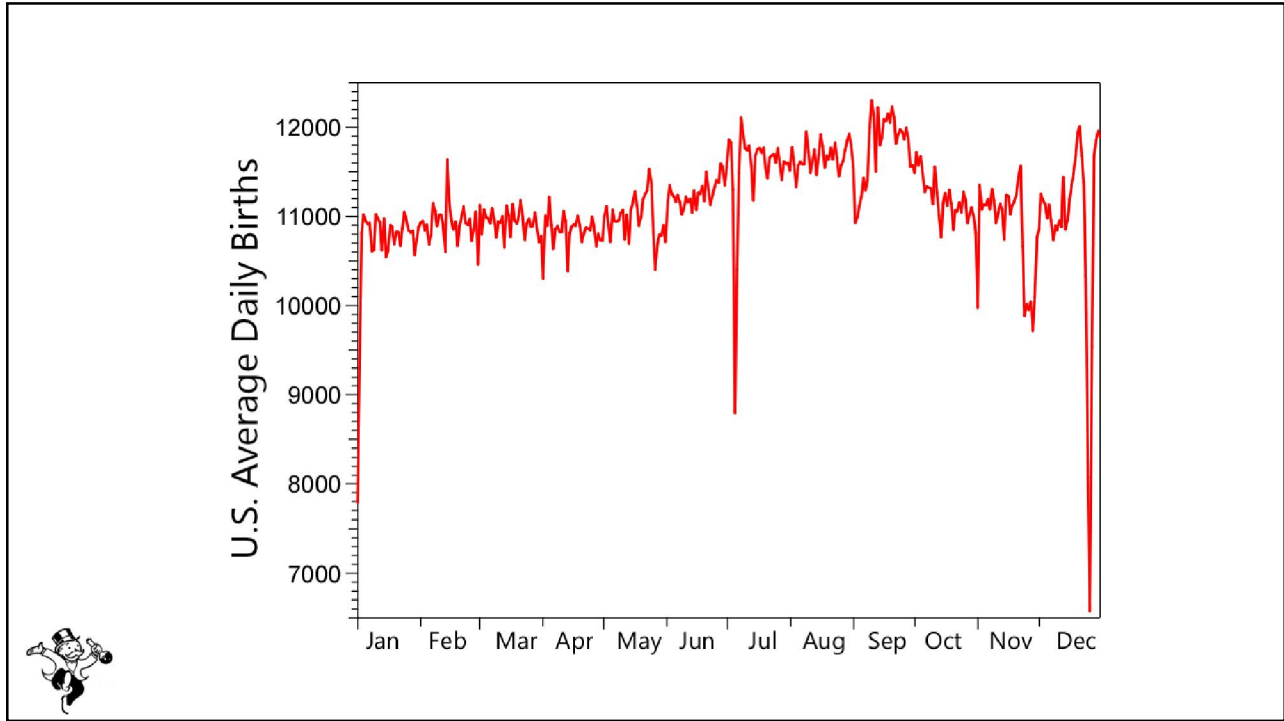
### Number of Births by Month



The simpler the better. Channel Dragnet: Just the facts.

Rod Bennett





# EPA Trash Data

Figure 5. Total MSW Generation (by material), 2014  
258 Million Tons

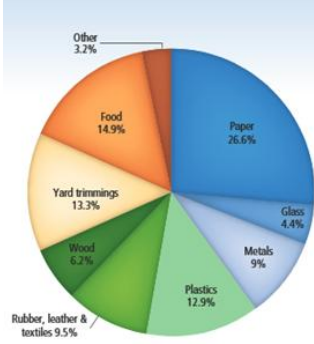


Figure 6. Total MSW Recycling and Composting (by material), 2014  
89 Million Tons

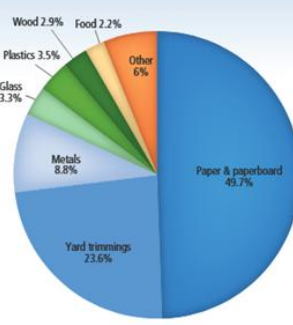


Figure 7. Total MSW Combusted with Energy Recovery (by material), 2014  
33 Million Tons

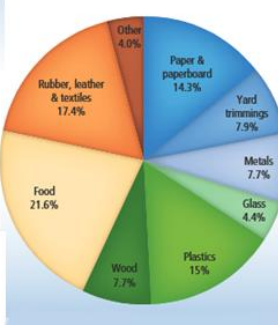
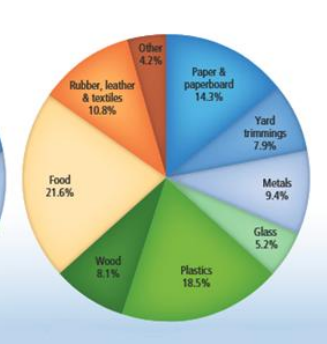


Figure 8. Total MSW Landfilled (by material), 2014  
136 Million Tons

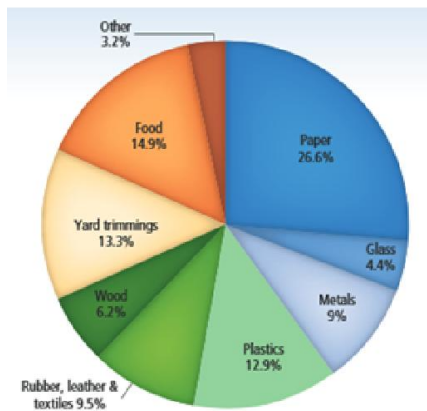


[https://www.epa.gov/sites/production/files/2016-11/documents/2014\\_smmfactsheet\\_508.pdf](https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf)

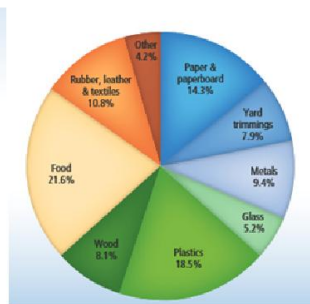


# Real Example

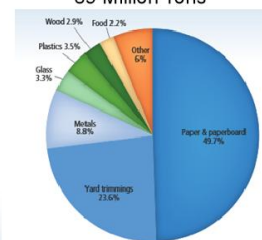
Total MSW Generation  
258 Million Tons



Total MSW Landfilled  
136 Million Tons



Total MSW Recycling and Composting  
89 Million Tons

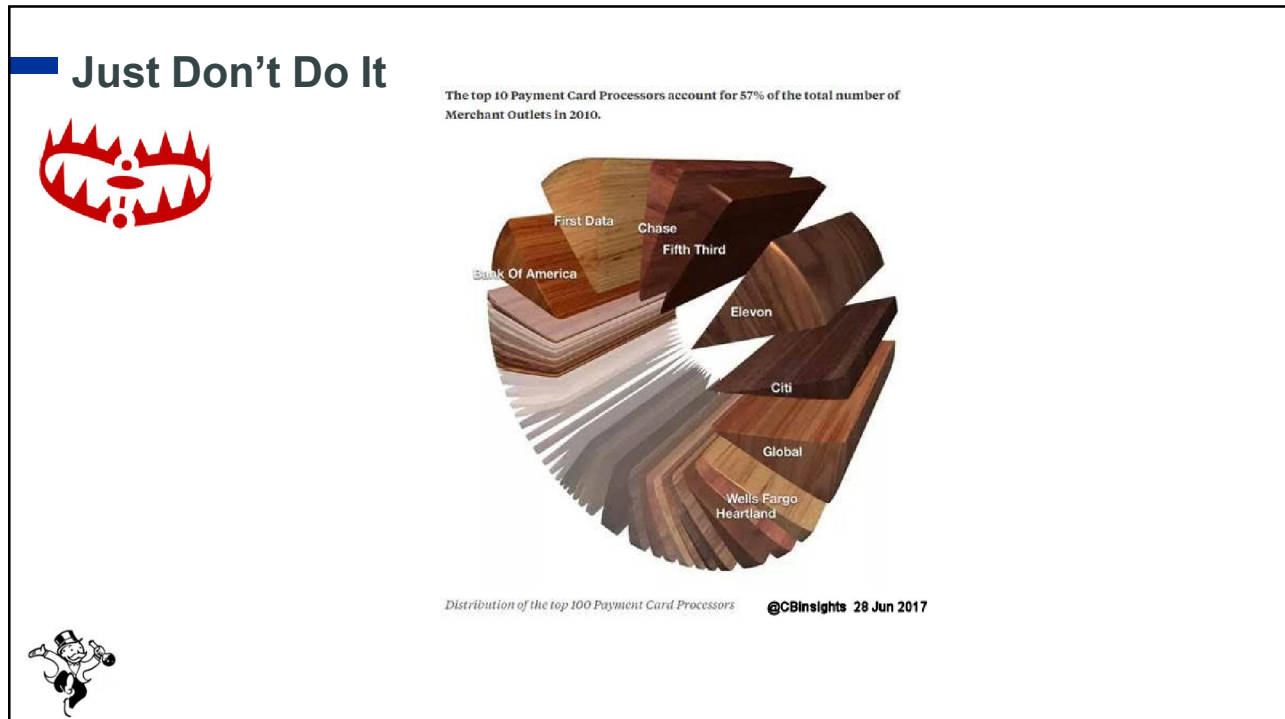
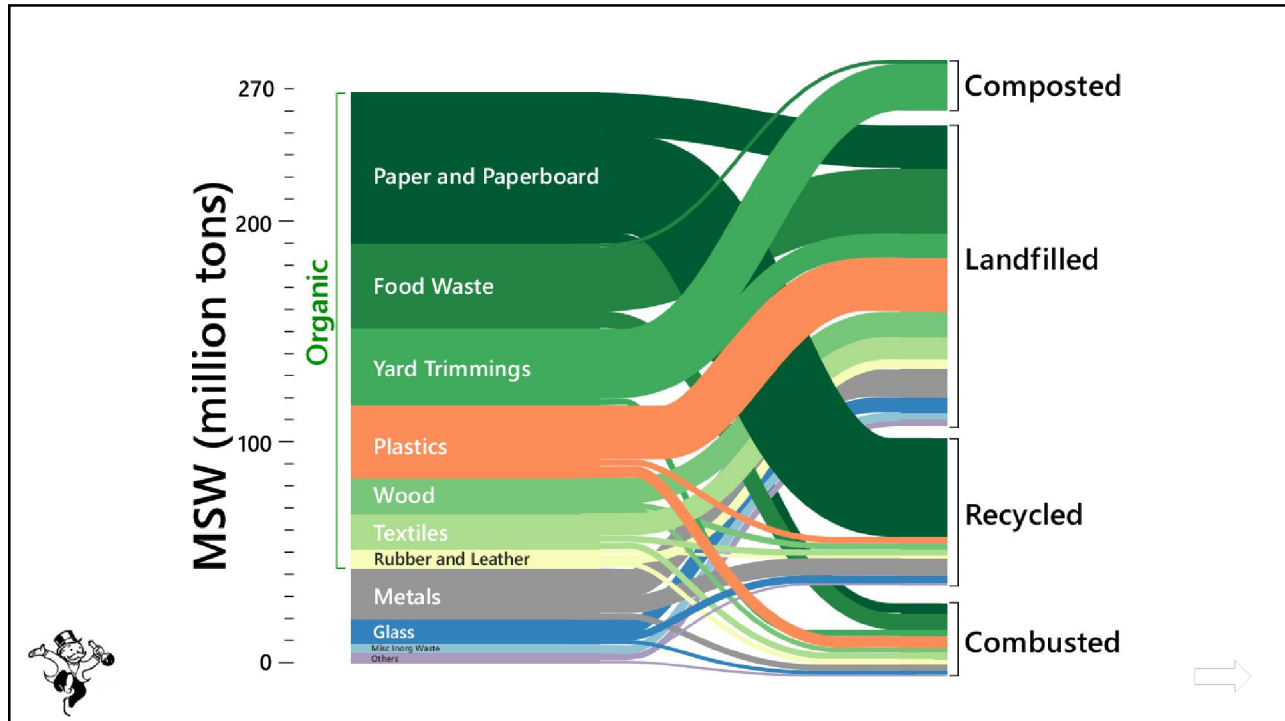


Total MSW Combusted with Energy Recovery  
33 Million Tons



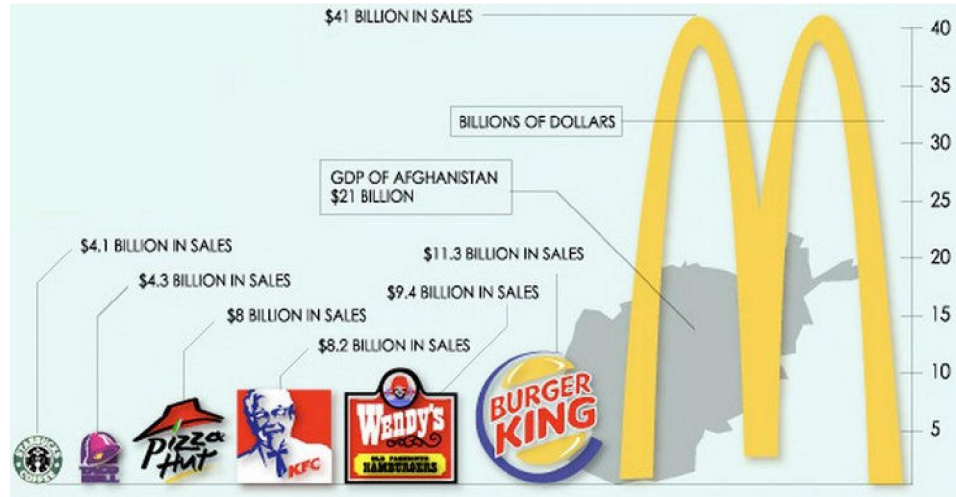
[https://www.epa.gov/sites/production/files/2016-11/documents/2014\\_smmfactsheet\\_508.pdf](https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf)







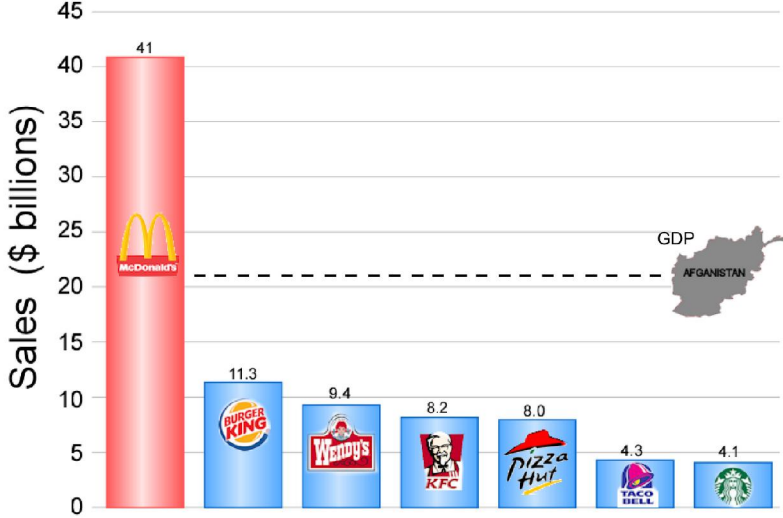
## Fast Food Sales

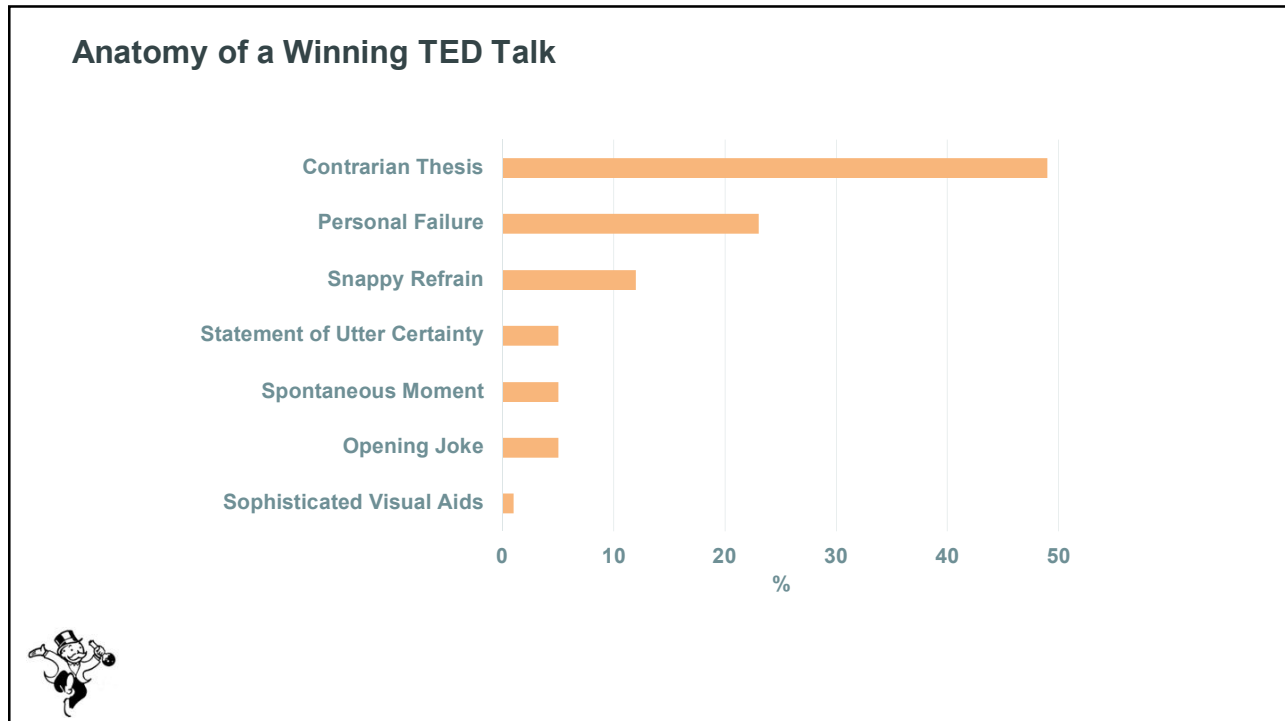
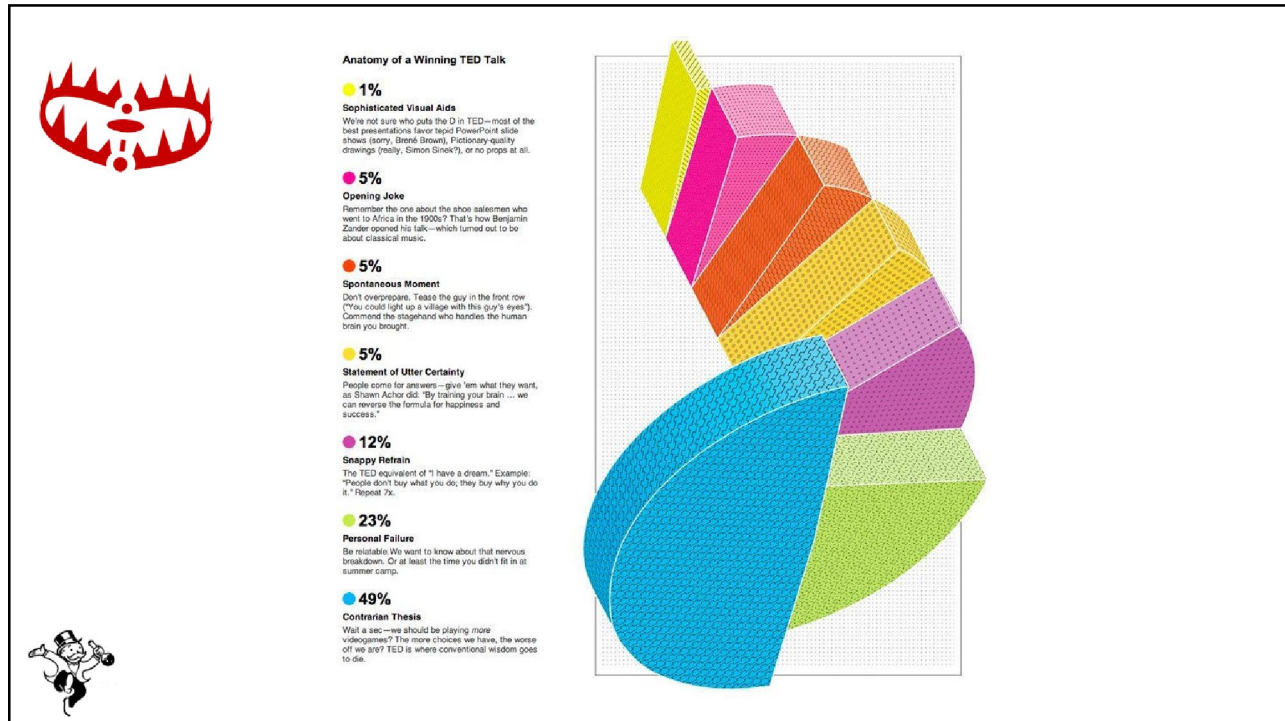


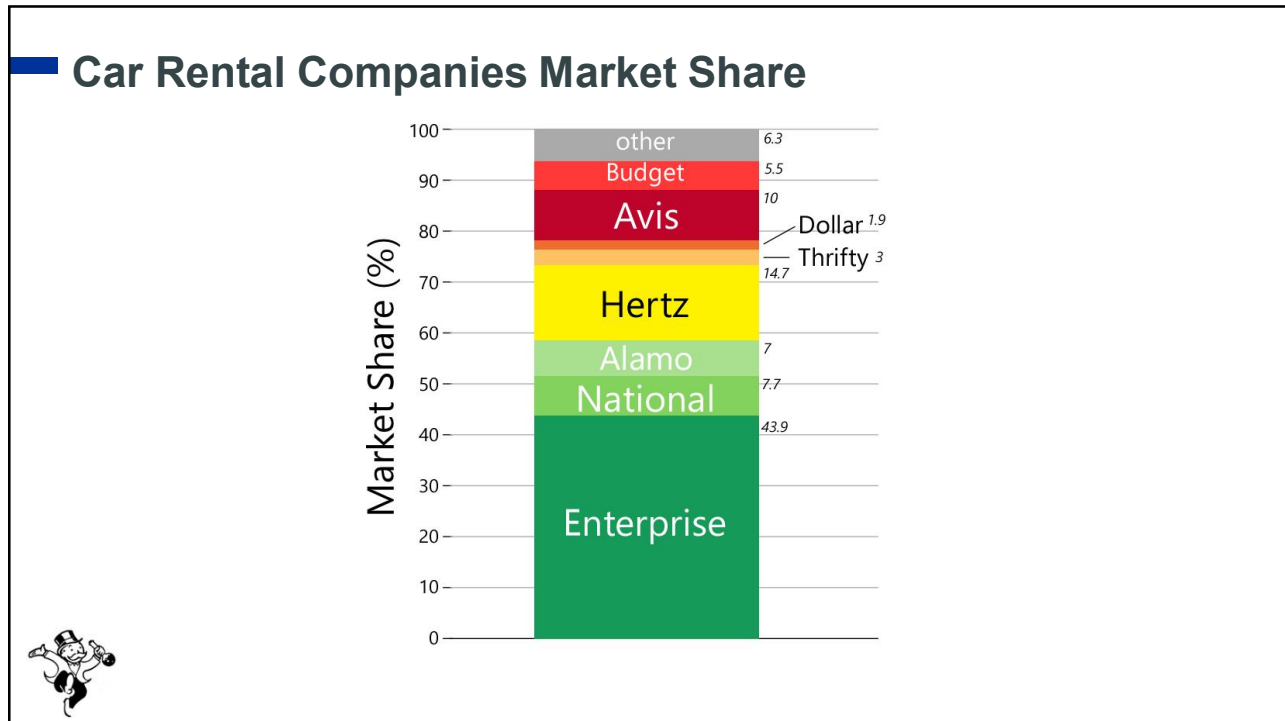
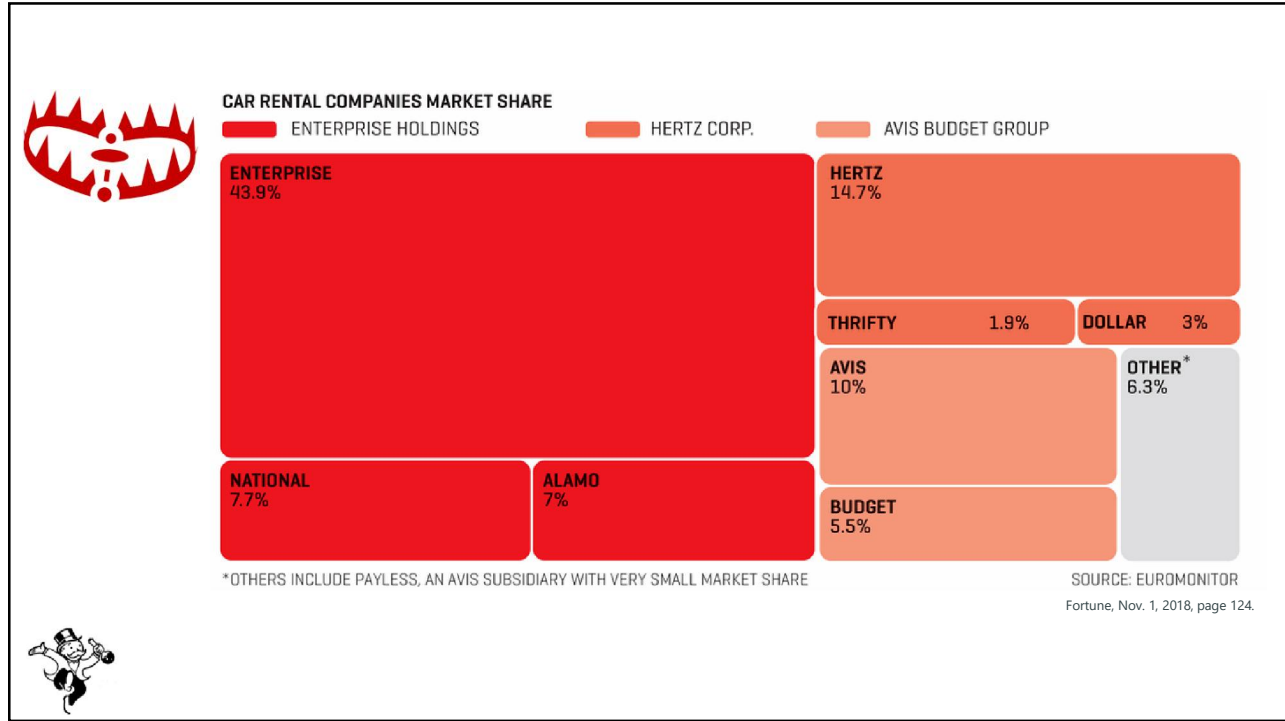
<http://ticktockmaths.co.uk/bad-graphs/>



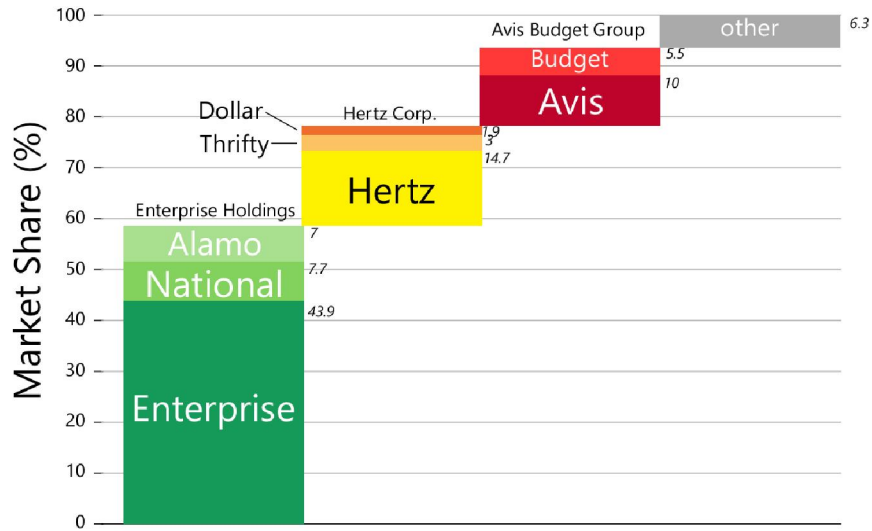
## Fast Food Sales



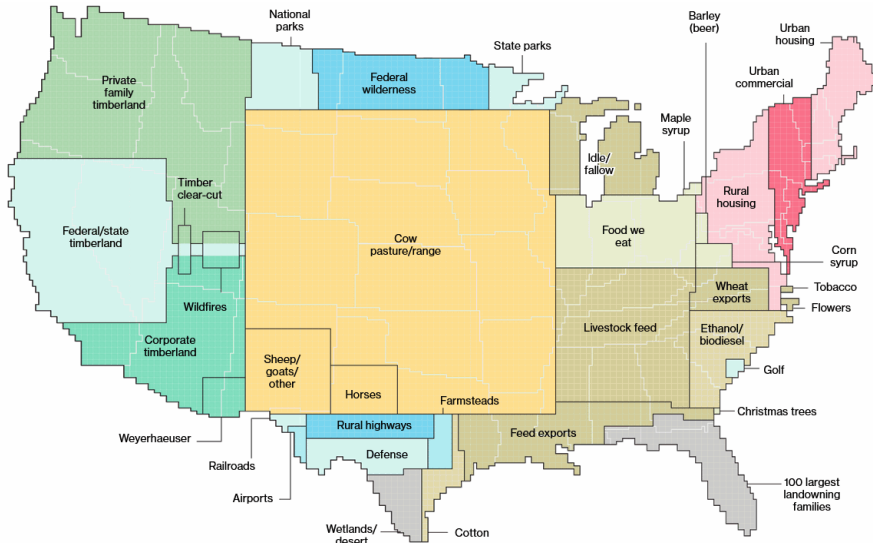




## Car Rental Companies Market Share



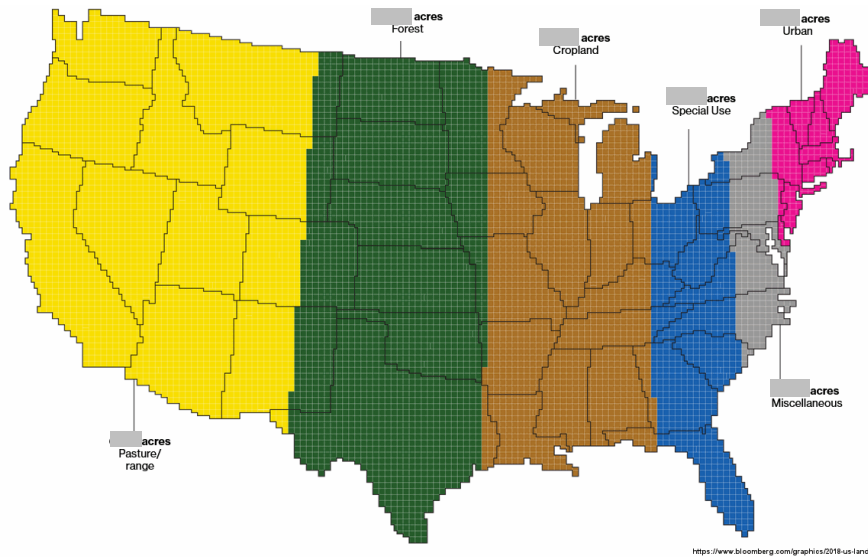
## Land Use in the U.S.



<https://www.bloomberg.com/graphs/2018-us-land-use/>

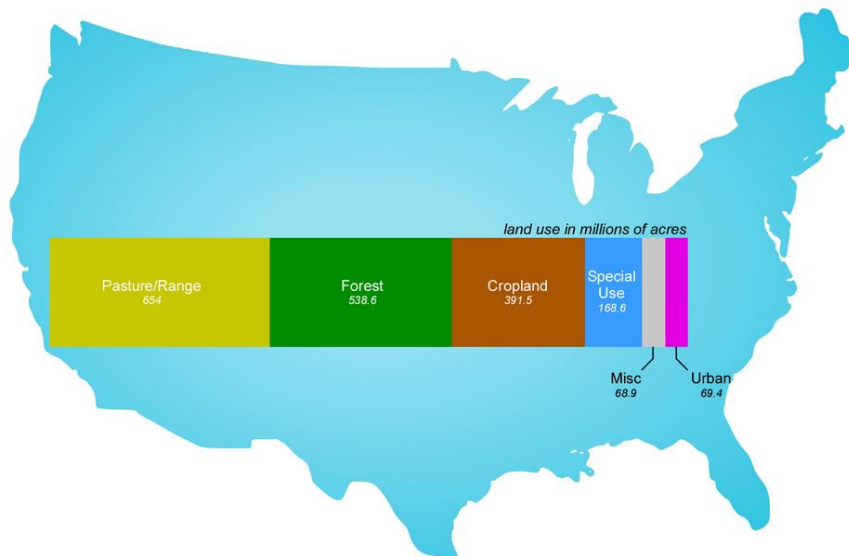


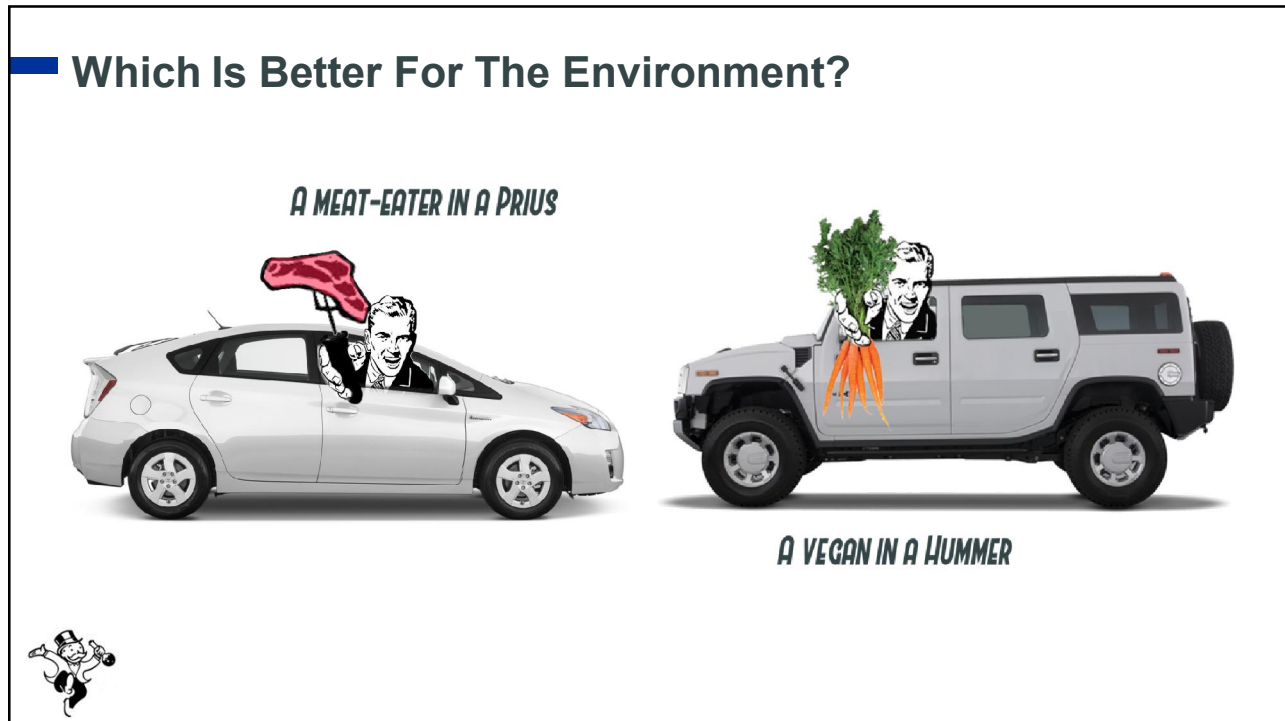
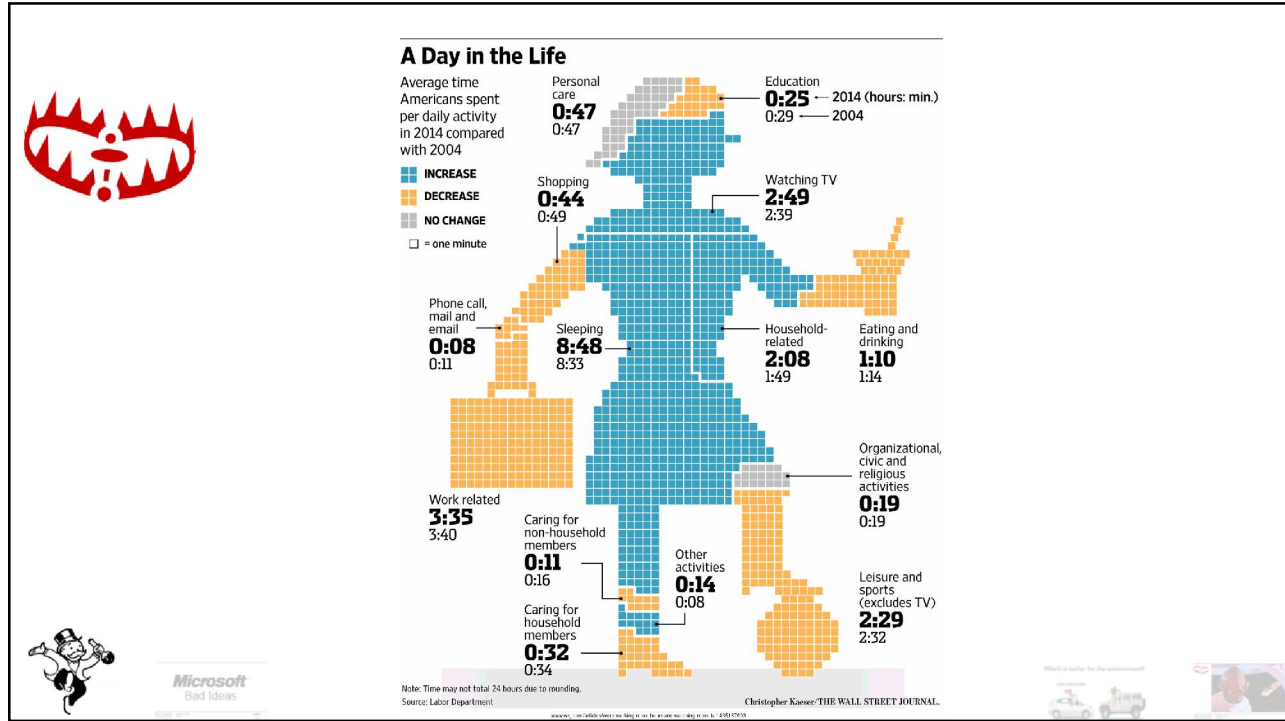
## Land Use in the U.S.

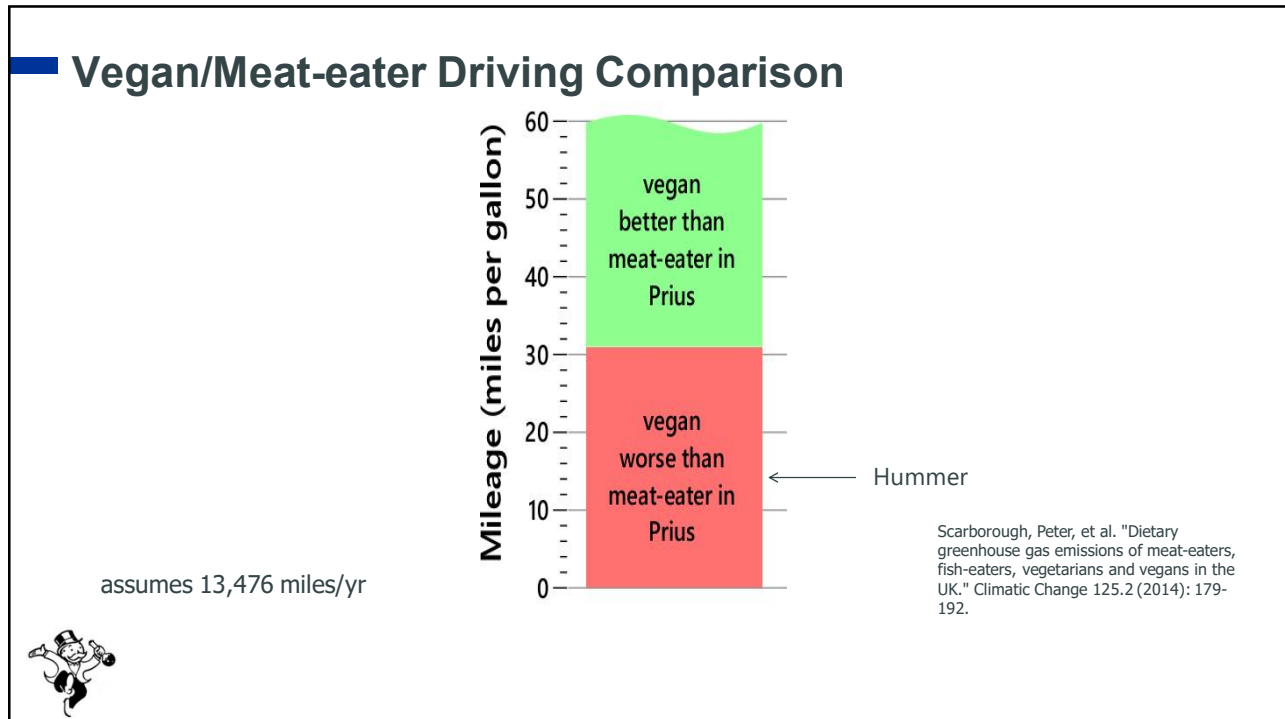
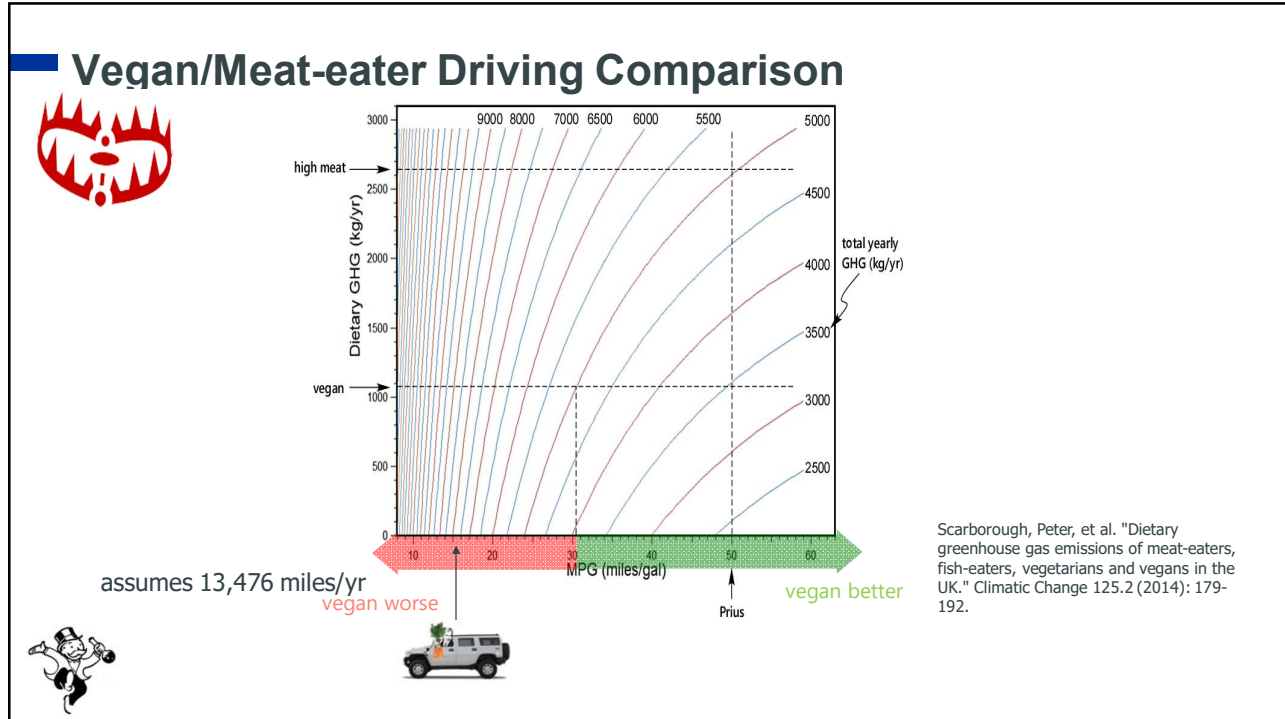


<https://www.bloomberg.com/graphics/2018-us-land-use/>

## Land Use in the U.S.








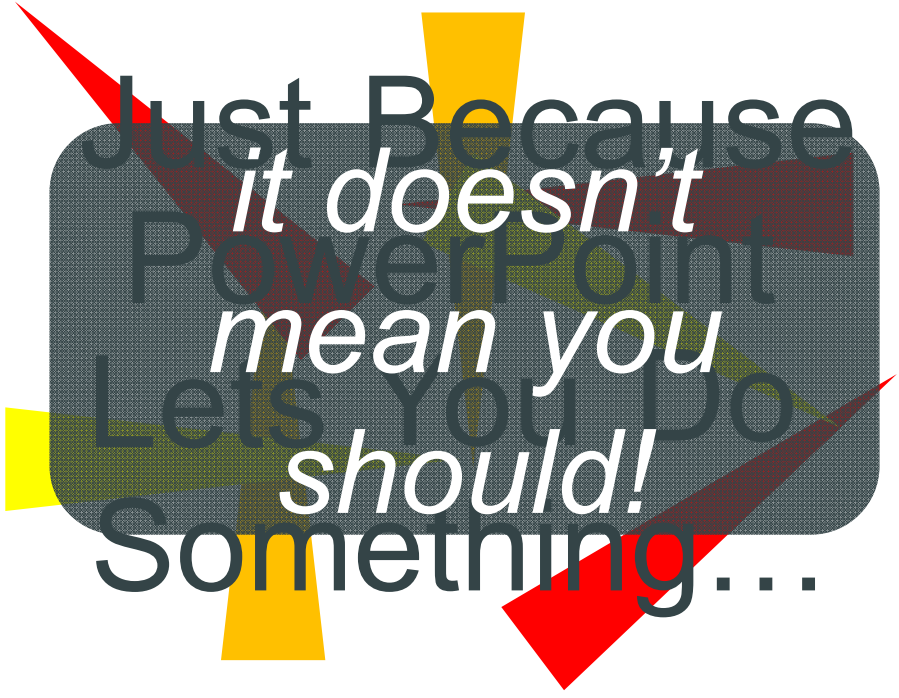


graphs used to gain understanding are unlikely to be good for presentation






Just Because  
*it doesn't*  
PowerPoint  
*mean you*  
Lets You Do  
*should!*  
Something...

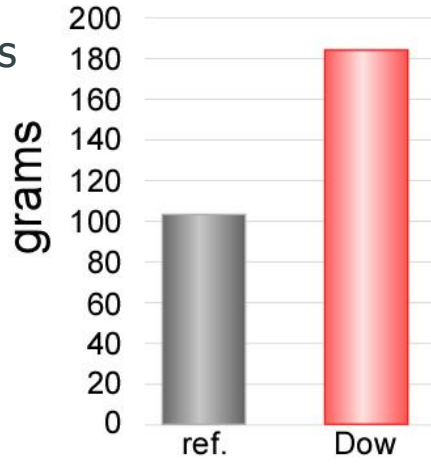


Video ≠ Animation



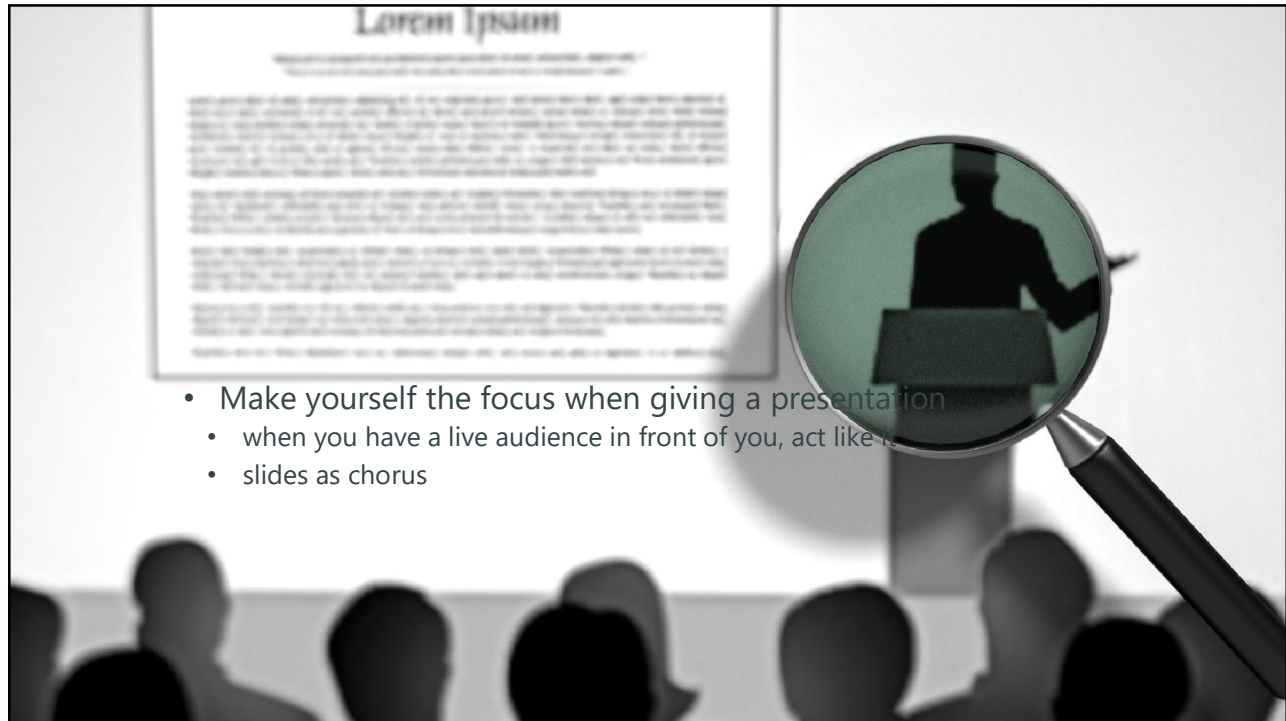
## Film Performance

Dart Impact Results



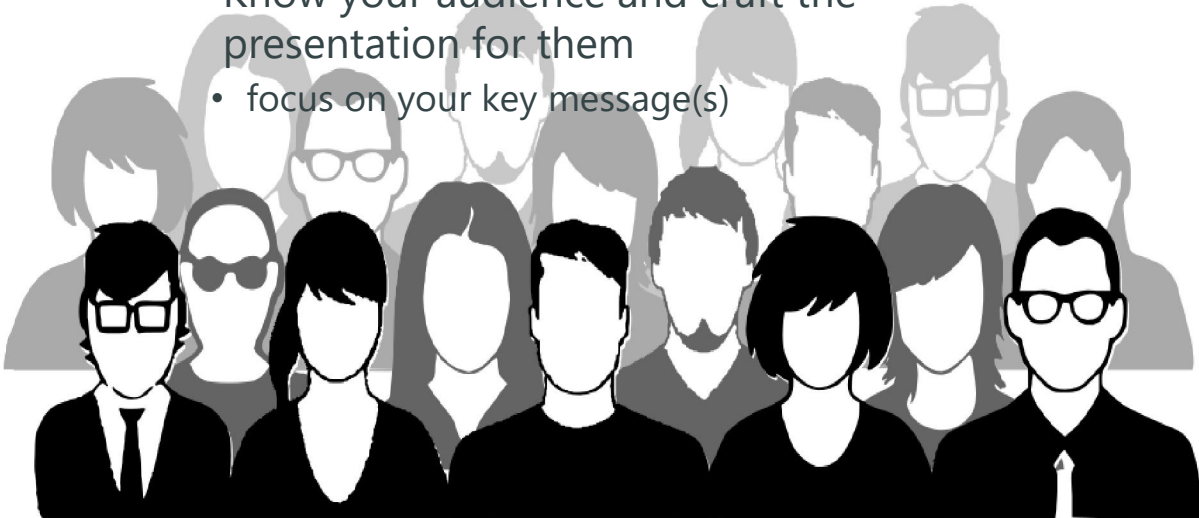
## Film Performance





## The Presentation Is For Your Audience

- Know your audience and craft the presentation for them
- focus on your key message(s)





- memorable is better than forgettable (pics memorable)
- make graphics *mind ready*
- info density right for material and audience



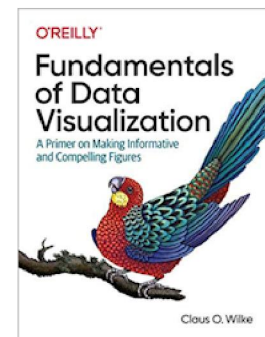
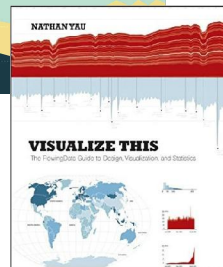
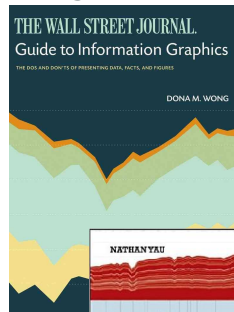
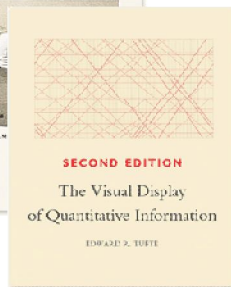
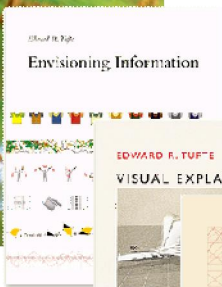
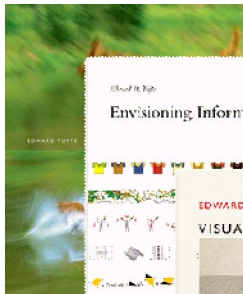
- *don't let tools get in the way*



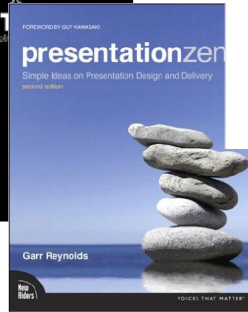
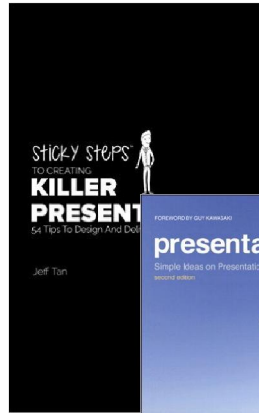
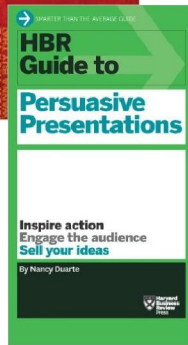
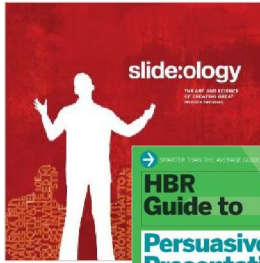
- be prepared
- *practice*
- *script at least the first 3 minutes- most valuable real estate*



## Favorite References – Display of Information



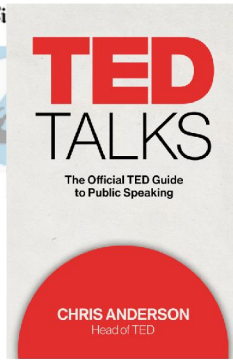
## Favorite References - Presentations



How to Speak in Public

By ADAM BRYANT

The New York Times  
November 2018



## Duarte's Golden Rule

“

*Never give a presentation you wouldn't want to sit through.*

Nancy Duarte in HBR Guide

”



