

# Five Years of Chart Reading

Kaiser Fung  
NYU  
April 30, 2010

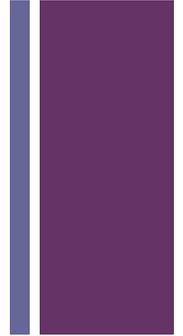
# + Junk Charts blog

junkcharts.typepad.com

- First post, July 2005
- Pioneering chart critique blog
- Charts from everyday life
- Reconstructed
- Artform

The screenshot shows the Junk Charts blog interface. At the top, the logo reads "JUNK CHARTS Recycling chart junk as junk art". Below the navigation menu, the main article is titled "Reader's indigestion". The article features a grid of 12 small charts, one for each country: Australia, Brazil, Canada, China, France, and Germany. Each chart displays data for three categories: "Talk to them", "Use physical punishment", and "Use alternative punishment". The charts are presented in a way that makes it difficult to compare data across countries due to varying scales and colors. The article includes a critique of this design choice, noting that the general profiles of responses are very similar across countries, and the differences are well hidden. A line chart at the bottom of the article shows the "Talk to them" category for all countries, highlighting that it is the preferred method in all but two countries. The right sidebar contains a "BOOK BLOG" section with a book cover for "NUMBERS RULE YOUR WORLD" and a "RECENT POSTS" section with links to other articles.

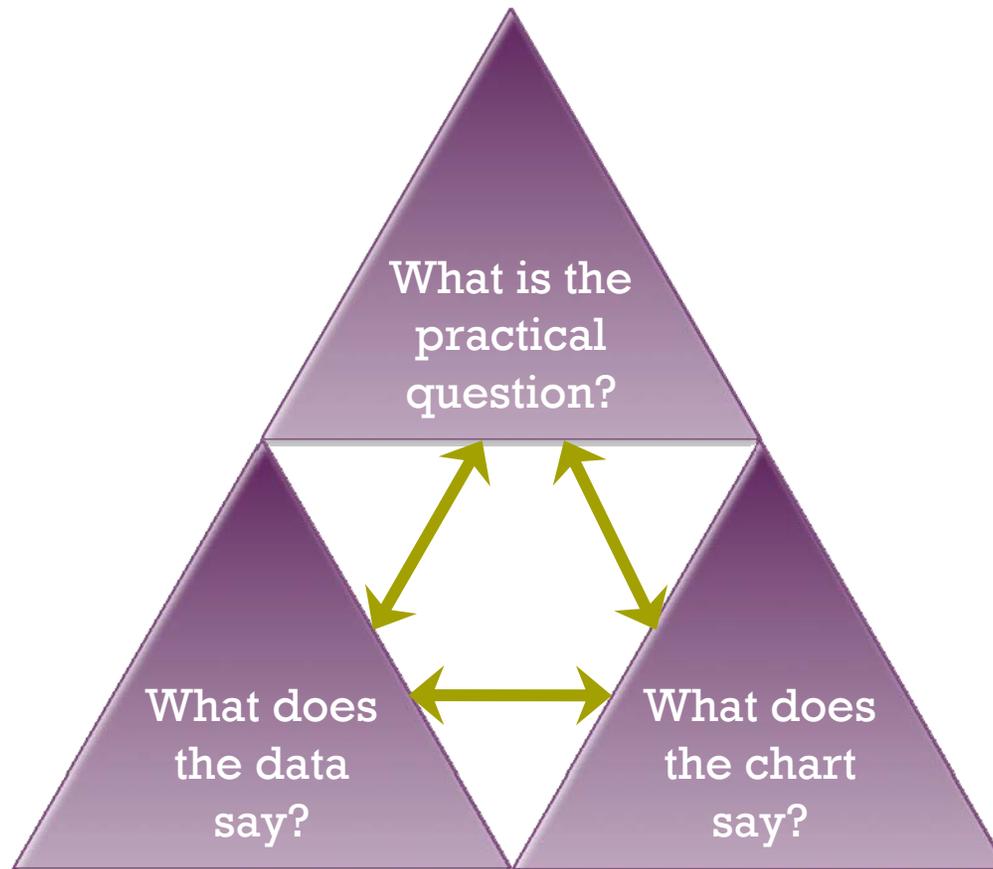
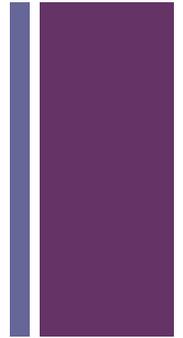
# + Impact



- *Junk chart* has become a popular concept (derived from Tufte's chartjunk); 19,000 results on Google search
- **Features:** Yahoo! Pick; *Science*; Kottke.org; Media Bistro; Pollster.com; Portfolio.com; Presentation Zen; Andrew Gelman; Unbossed; CACM; many more
- **Books:** *Handbook of Data Visualization*; *Excel 2007 Charts*; *The Secret Power of Blogging*; *Web Analytics 2.0*; *Discovering Statistics Using SAS (also SPSS)*
- Reader submissions

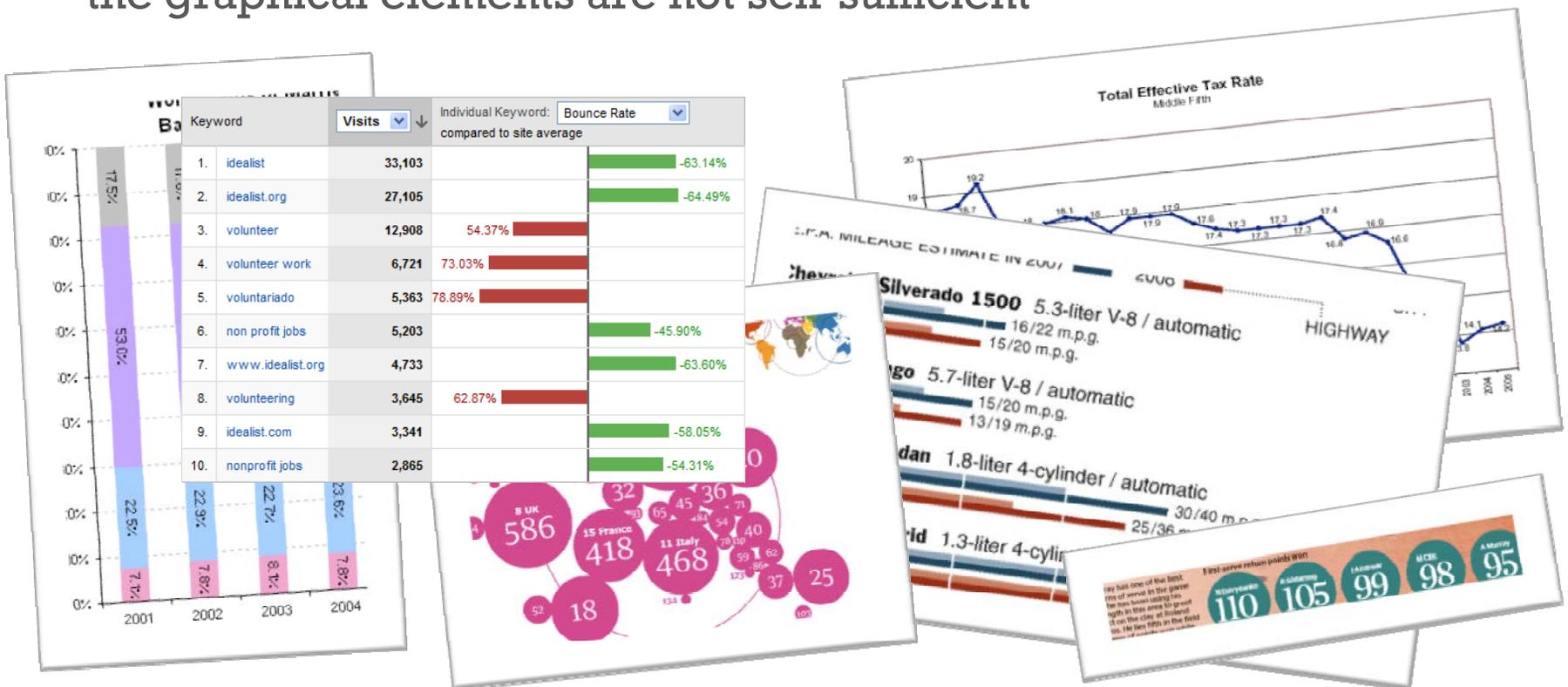


# Junk Charts Trifecta Checkup

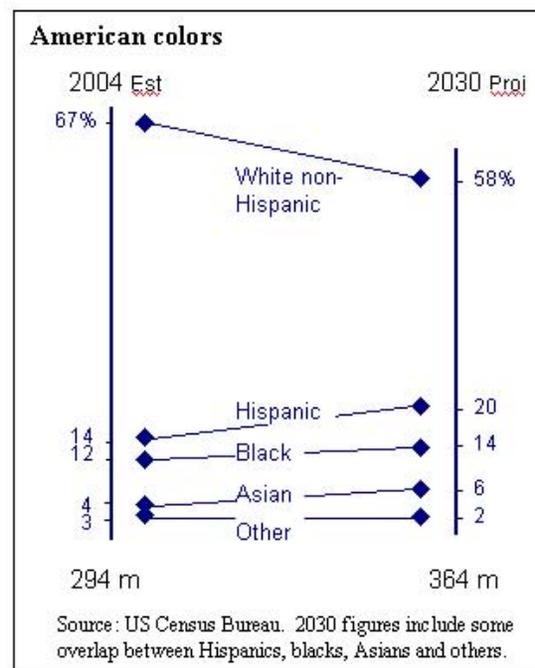
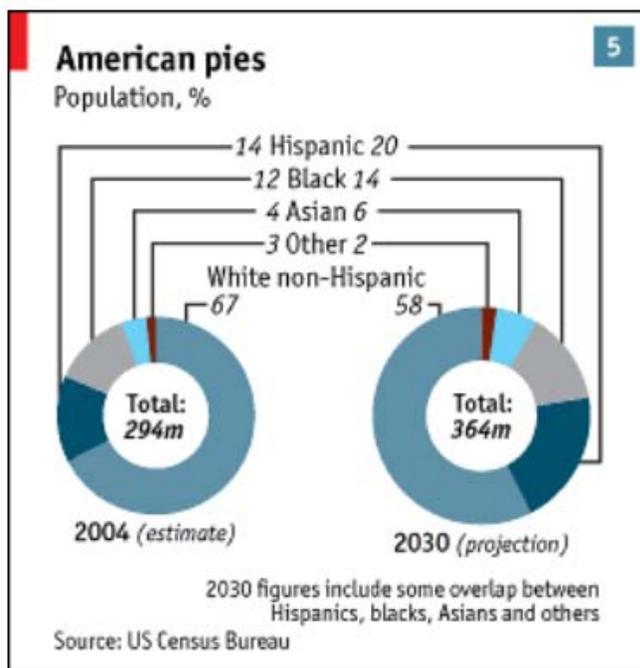
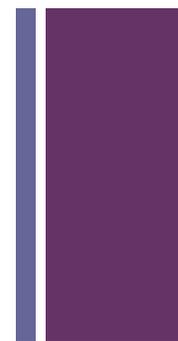


# + Self-sufficiency

- Graphical elements must add to the data
- **Corollary:** if the entire data set must be printed on the chart, the graphical elements are not self-sufficient



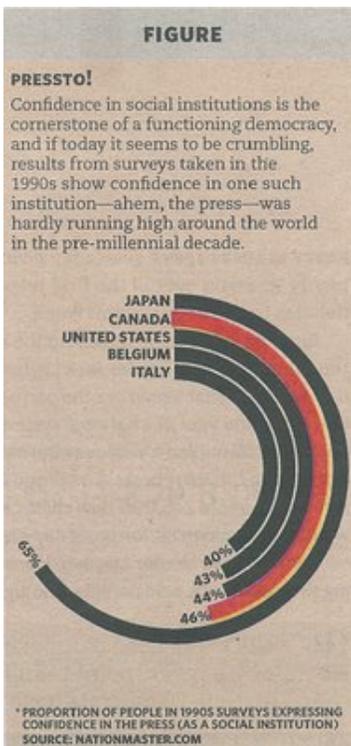
# + NO LOVE: Donut chart



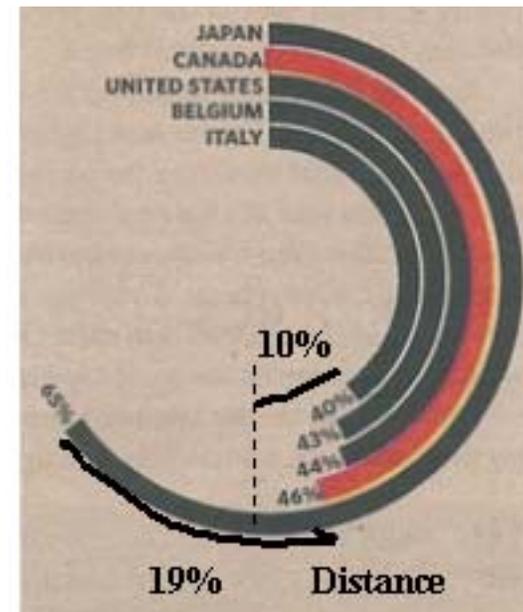
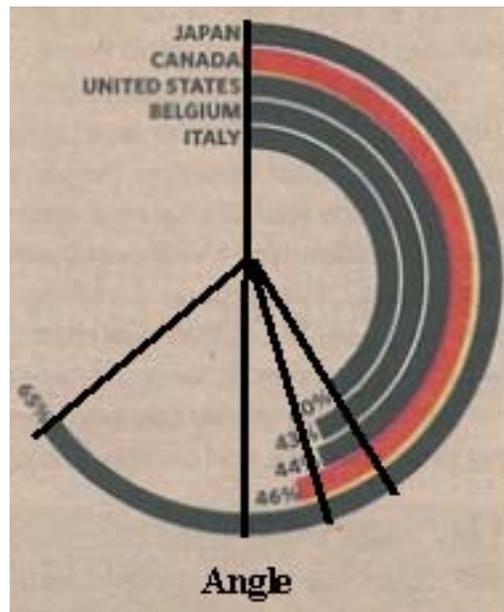
“ The donut chart is a pie chart with a hole punched in the middle. Alas, the missing middle contains the angles that help us size up the slices. The donut chart is a useless chart made worse. Never ever use a donut chart. ”

“The American Dream”,  
*Economist*, July 14, 2005

# + NO LOVE: Racetrack graph

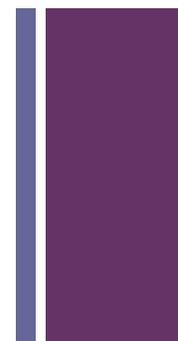


Reader submission  
from an Ottawa  
newsletter named  
“Dose”, Dec 2005



“ The way this chart is constructed is to have length of curve proportional to angle, not distance; however, our eyes are naturally drawn to the circumference! When we see Japan’s green line, we perceive the length of the line, not its angle. ”

# + NO LOVE: Donut, or Racetrack?



The New York Times

September 9, 2009

## From the Most Selective Colleges, More Graduates

Students are less likely to graduate from less selective public colleges than more selective ones, even after controlling for the qualifications of the students. Below are the graduation rates for different groups of students, at different types of colleges.

### GRADUATION RATES

6-year graduation rates, for students who entered college in 1999.

STUDENT GROUPINGS	MOST SELECTIVE	2ND MOST SELECTIVE	3RD MOST SELECTIVE	LEAST SELECTIVE
3.5 high school G.P.A. or higher, 1,200 SAT or higher	89%	82%	71%	59%
3.5 or higher and 1,000 to 1,190, or 3 to 3.5 and 1,200 or higher	83%	75%	63%	62%
3 to 3.5 and 1,000 to 1,190	75%	67%	56%	50%
Less than 3 or less than 1,000 or both	71%	60%	52%	48%

Note: Selectivity of colleges is based on average SAT scores of student body. Colleges in the most selective group have an average SAT score of more than 1,200; those in the least selective group have an average score of less than 1,000.

Sources: William G. Bowen, Matthew M. Chingos, Michael S. McPherson

THE NEW YORK TIMES

“Colleges are lagging in graduation rates”,  
*New York Times*, Sept 9, 2009

# + LOVE: Bumps chart

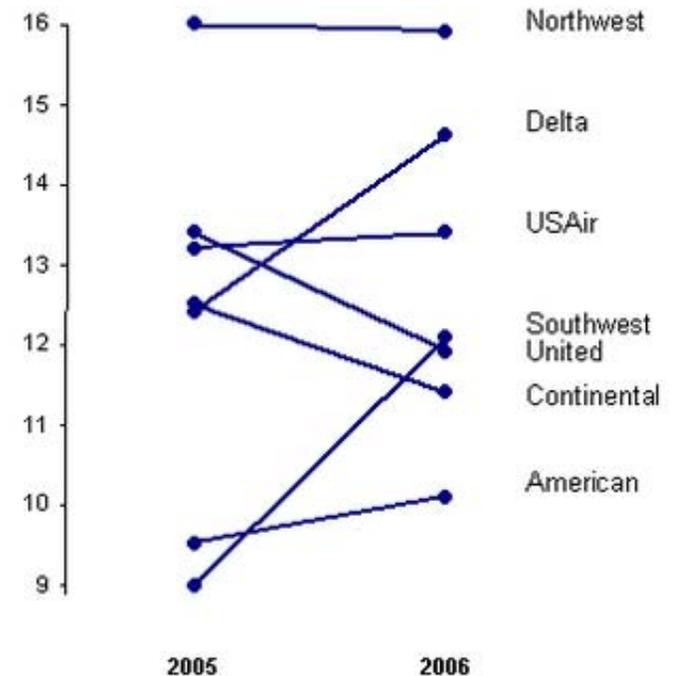
Number of passengers per 10,000 bumped (voluntarily and involuntarily)

	2006		2005	
Northwest Airlines	15.9		16.0	
Delta Air Lines	14.6		12.4	
US Airways	13.4		13.2	
Southwest Airlines	12.1		9.0	
United Airlines	11.9		13.4	
Continental Airlines	11.4		12.5	
American Airlines	10.1		9.5	

“ One would be interested in answering questions such as:

- Which airlines have the best (or worst) bump rate?
- Are some airlines consistently better (or worse) at controlling the bump rate?
- Which airlines have improved (or worsened) from year to year?
- Are the differences of practical significance? ”

Number of Bumps Per 10,000 Passengers



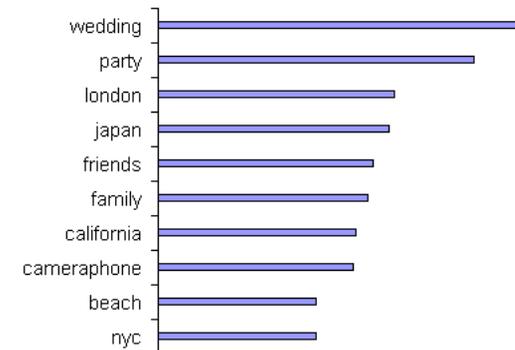
“Bumped Fliers and No Plan B”,  
*New York Times*, May 30, 2007

# + LOVE: Word cloud

## All time most popular tags

amsterdam animal animals april architecture art australia baby barcelona  
beach berlin bird birthday black blackandwhite blue boston bridge building bw  
california cameraphone camping canada car cat cats chicago  
china christmas church city clouds color colorado concert day dc dog dogs england  
europe family festival fireworks florida flower flowers food france  
friends fun garden geotagged germany girl graduation graffiti green hawaii  
holiday home honeymoon house india ireland italy japan july june kids lake  
landscape light london losangeles macro march may me mexico moblog  
mountains museum music nature new newyork newyorkcity newzealand night  
nyc ocean orange oregon paris park party people phone photo pink portrait  
red reflection river roadtrip rock rome sanfrancisco school scotland sea seattle sign  
sky snow spain spring street summer sun sunset taiwan texas thailand  
tokyo toronto travel tree trees trip uk unfound urban usa vacation  
vancouver washington water wedding white winter yellow zoo

Tag cloud from Flickr,  
circa Oct 2005

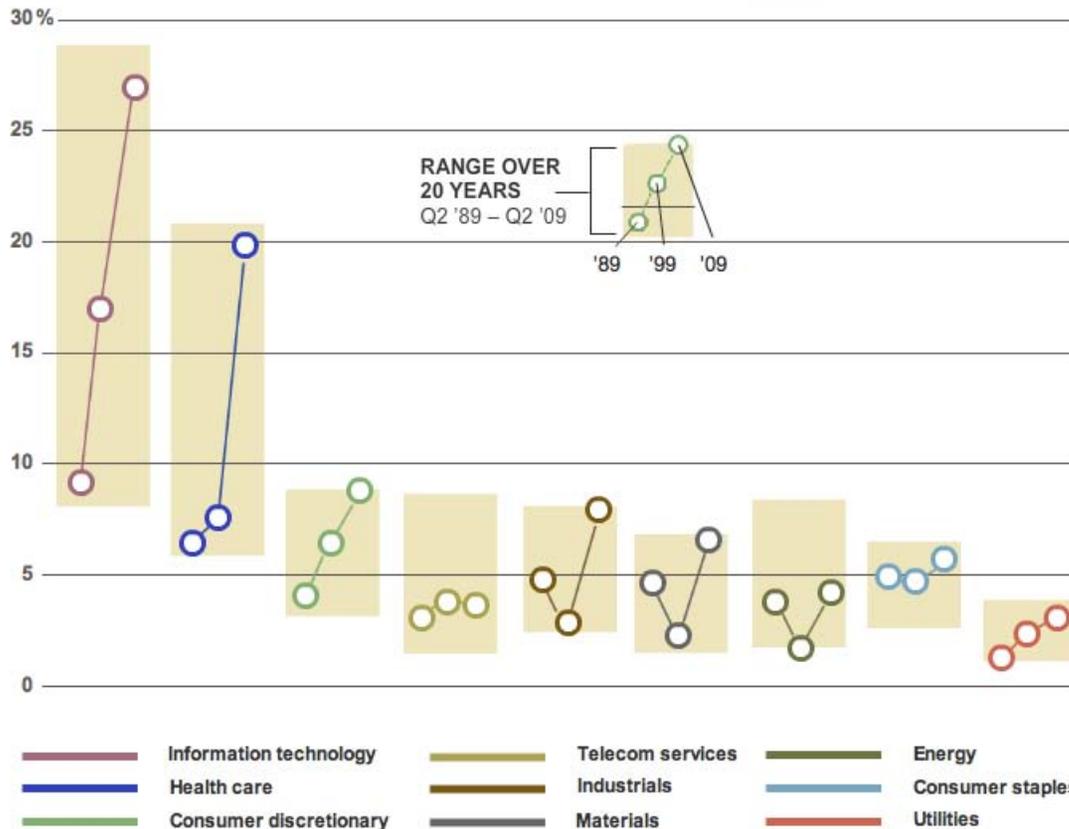


“ The data itself is nothing more than a frequency table (*wedding* 132,356; *party* 120,222; etc.) but this [tag cloud] presentation is visually appealing and aptly functional. ”

# + LOVE: Small multiples

## Stockpiling Cash

Companies have been holding more cash in recent years, but the increases have not been consistent across all sectors. The below graphs show the ratios of cash to assets for different industries between 1989 and 2009.



Alex Lowe and Sarah Siobin / The Wall Street Journal

Sources: WSJ analysis of data from Capital IQ; Kathleen Kahle, University of Georgia

“ Most impressive is the highly successful attempt to simplify the data, or equivalently, to elevate the trend: each trajectory is represented by three points, with straight lines drawn between those points. ”

“Jittery companies stash cash”,  
*Wall Street Journal*, Nov 3 2009

# + The book

- Wider scope than the blog: how to think about data in everyday life?
- Stories / concepts
- Contemporary
- Relevant
- Reality of statistical practice

Book Blog: [junkcharts.typepad.com/  
NumbersRuleYourWorld](http://junkcharts.typepad.com/NumbersRuleYourWorld)

Twitter: junkcharts

Email: [junkcharts@gmail.com](mailto:junkcharts@gmail.com)

