

Asking Data Questions

First, a review of homework.



Housekeeping:
if you email, email both of us.

HTML/CSS

Excel

Illustrator



“He who would learn to fly one day must first learn to stand and walk and run and climb and dance; one cannot fly into flying.”

— Nietzsche



The next 8 slides come from:
“Making Data Meaningful,”
A UN guide.

www.unece.org/stats/documents/writing/MDM_Part1_English.pdf

You can still talk like a human

Poor: “The largest contributor to the monthly increase in the CPI was a 0.5% rise in the transportation index.”

Better: “Higher auto insurance premiums and air fares helped push up consumer prices this month.”

You can still talk like a human II

Poor: “Working seniors were also somewhat more likely than younger people to report unpaid family work in 2004 (12% versus 4%).”

Better: “About 12% of working seniors reported unpaid family work in 2004, compared with 4% for younger people.”

Watch percentage changes vs. proportions

Wrong: “The proportion of seniors who were in the labour force rose 5% from 15% in 2003 to 20% in 2004.”

Right: “The proportion of seniors who were in the labour force rose five percentage points from 15% in 2003 to 20% in 2004.”

Reduce big numbers to understandable levels

Cumbersome: “Of the \$246.8 billion in retail spending last year consumers spent \$86.4 billion on cars and parts, and \$59.3 billion on food and beverages.”

Easy to grasp: “Of every \$100 spent in retail stores last year, consumers spent \$31 on cars and parts, compared with only \$23 on food and beverages.”

Don't change denominators

Confusing: “Two out of every five Canadians reported that they provided care for a senior in 2001, compared with one in seven in 1996, according to the census.”

Clearer: “About 40% of Canadians reported that they provided care for a senior in 2001, up from 14% in 1996, according to the census.”

Numbers in the back

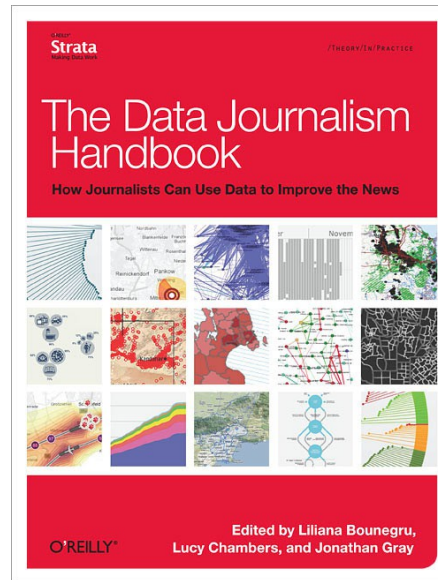
Example: Norway's population had a higher growth last year than the year before. The increase amounted to 33,000 people, or a growth rate of 0.7%

Precision

Instead of 3,657,218, write “about 3.7 million.”

You can also make data simpler and more comprehensible by using rates, such as per capita or per square mile.

Types of data stories

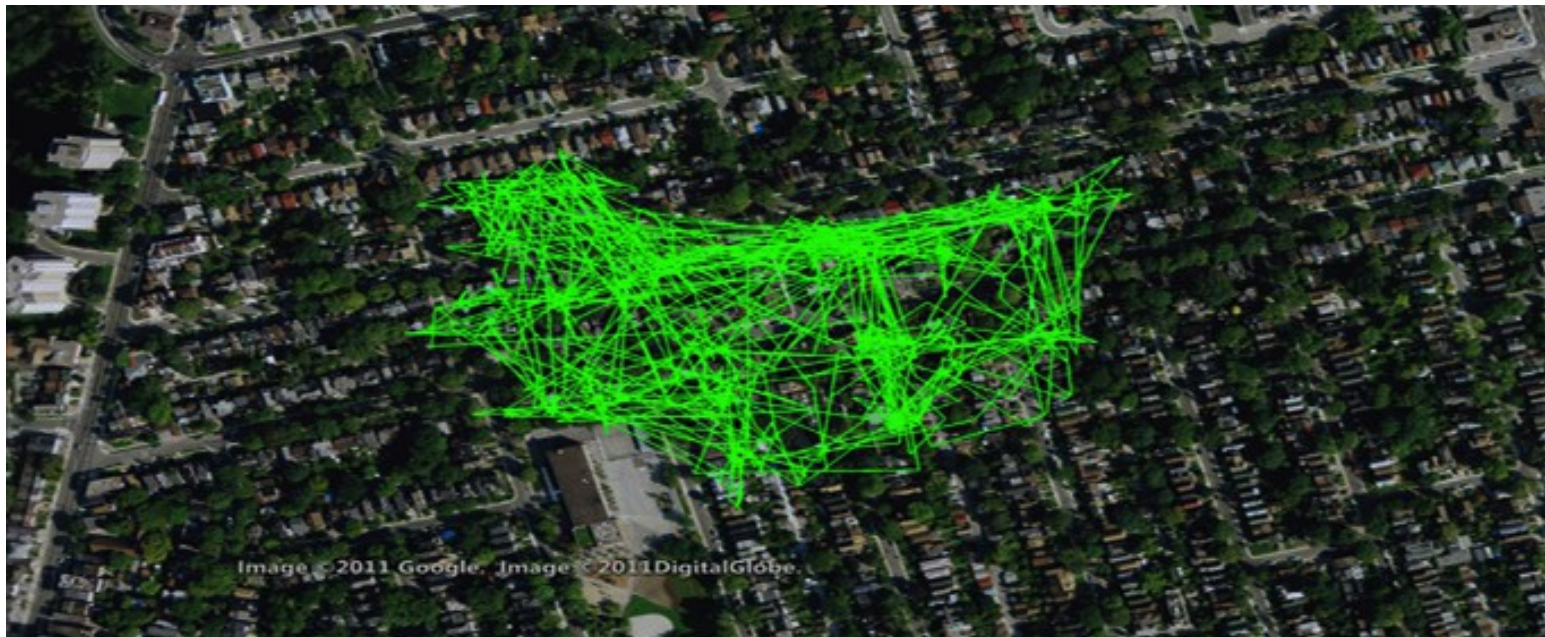


The list and the paper clip examples that follow from Martin Rosenbaum, a journalist at the BBC.

1. Measurement

The simplest story — counting or totaling something.

‘Local councils across the country spent a total of £x billion on paper clips last year’



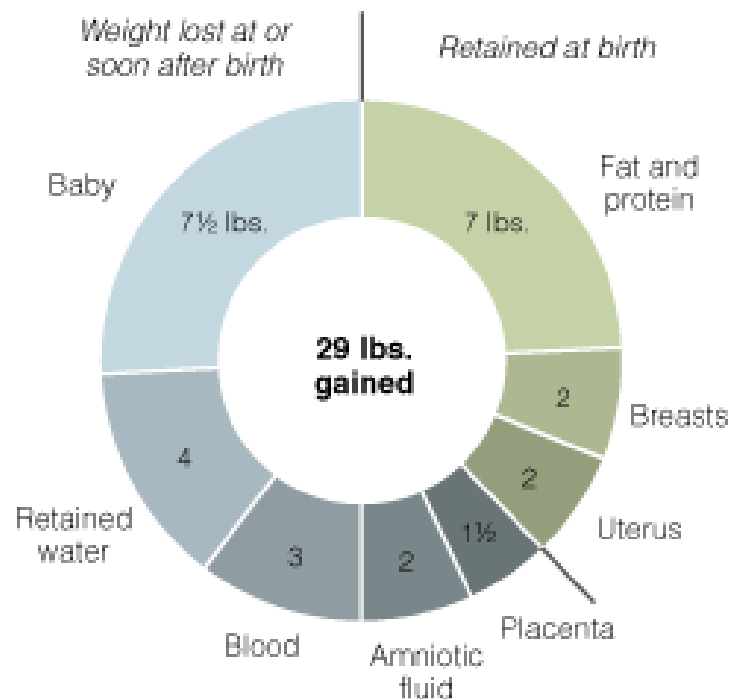
<http://www.cbc.ca/documentaries/natureofthings/2011/raccoonnation/>

2. Proportion

‘Last year local councils spent two-thirds of their stationery budget on paper clips’

Weight Gain During Pregnancy

The March of Dimes suggests that normal-weight women should gain between 25 and 35 pounds during pregnancy. Below, how a normal weight gain of 29 pounds would be distributed.

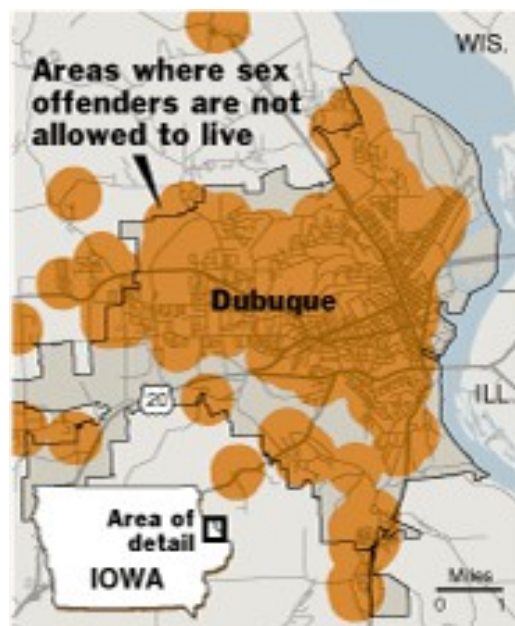


Source: March of Dimes

The New York Times

3. Internal comparison

‘Local councils spend more on paper clips than on providing meals-on-wheels for the elderly’



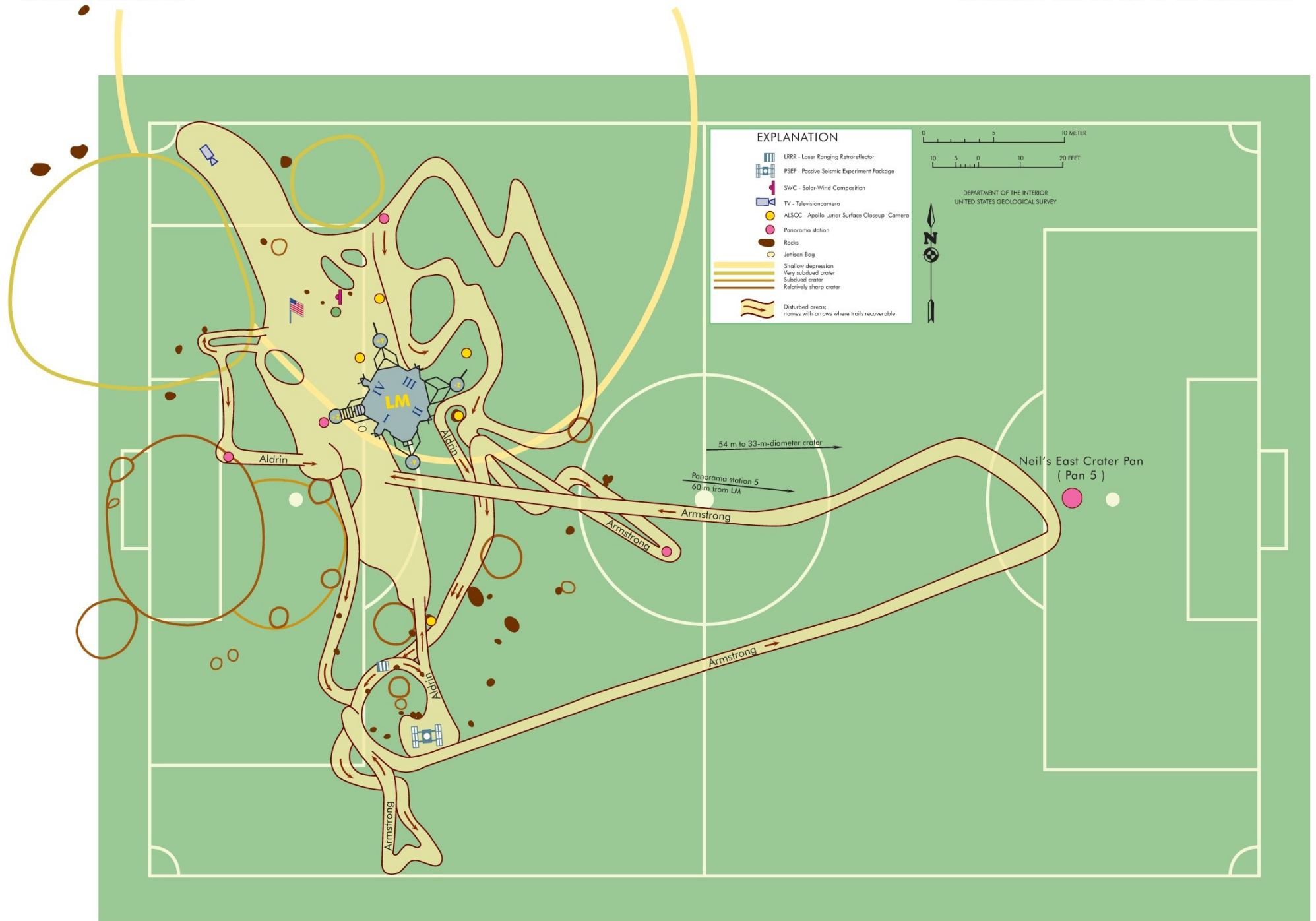
The New York Times

4. External comparison

‘Council spending on paper clips last year was twice the nation’s overseas aid budget’



<http://keanoross.tumblr.com/post/7542790252>



6. 'League tables'

These are often geographical or by institution, and you must make sure the basis for comparison is fair, e.g. taking into account the size of the local population.

'Borsetshire Council spends more on paper clips for each member of staff than any other local authority, at a rate four times the national average'

ESPN OUTSIDE THE LINES

WHAT'S LURKING IN YOUR STADIUM FOOD?

Health department inspection reports from all 107 stadiums used by the MLB, NBA, NHL and NFL show vast differences in how food is prepared and served. It's often not exactly appetizing. Use the interactive map and read the article to find out what Outside the Lines uncovered at each stadium and arena.

by Paula Lavigne / ESPN



7. Analysis by categories

‘Councils run by the Purple Party spend 50% more on paper clips than those controlled by the Yellow Party’

Share: **More >**

Explore Applicants

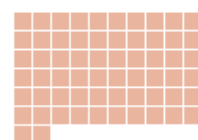
Years since sentencing

Bankruptcy

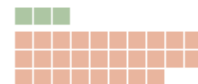
Letter from congressman

Unknown

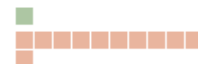
0 approved



62 denied



28 denied



11 denied



20 denied

5. Change over time

‘Council spending on paper clips has trebled in the past four years’

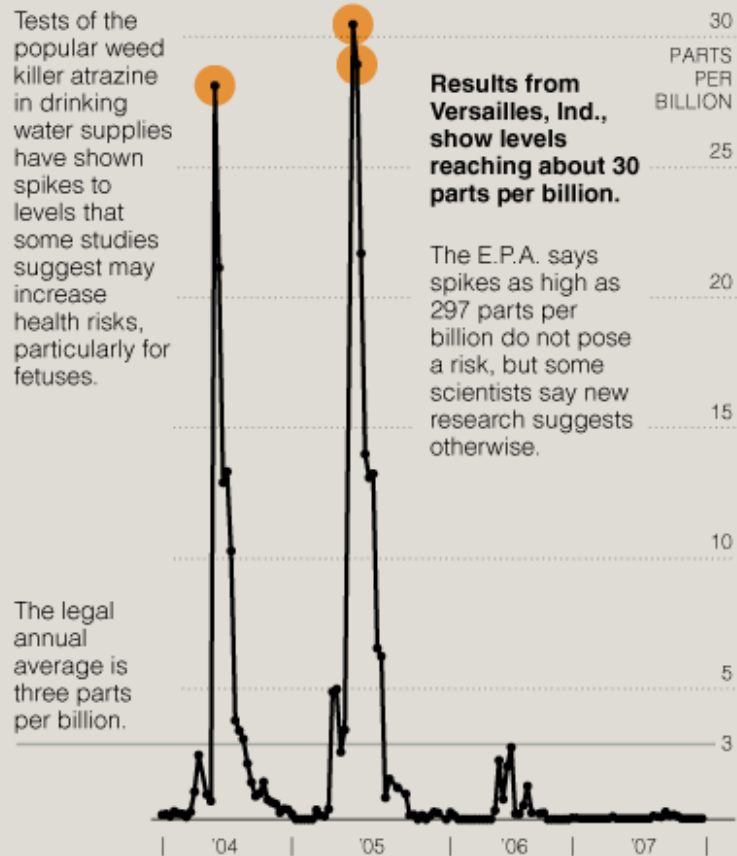
Summertime Spikes

Tests of the popular weed killer atrazine in drinking water supplies have shown spikes to levels that some studies suggest may increase health risks, particularly for fetuses.

Results from Versailles, Ind., show levels reaching about 30 parts per billion.

The E.P.A. says spikes as high as 297 parts per billion do not pose a risk, but some scientists say new research suggests otherwise.

The legal annual average is three parts per billion.



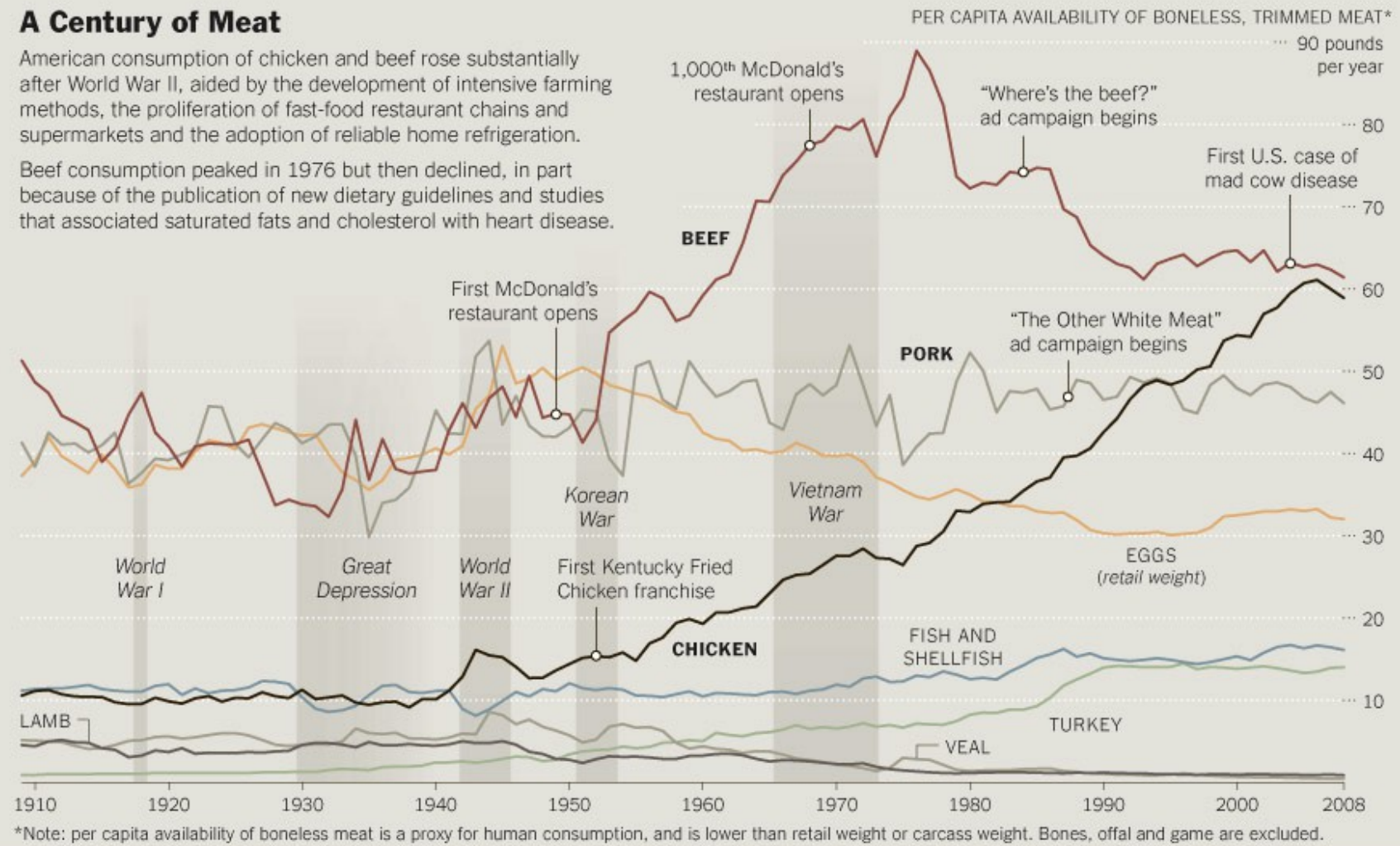
Sources: E.P.A. and state environmental agencies

THE NEW YORK TIMES

A Century of Meat

American consumption of chicken and beef rose substantially after World War II, aided by the development of intensive farming methods, the proliferation of fast-food restaurant chains and supermarkets and the adoption of reliable home refrigeration.

Beef consumption peaked in 1976 but then declined, in part because of the publication of new dietary guidelines and studies that associated saturated fats and cholesterol with heart disease.



Sources: U.S. Department of Agriculture (data); news and company reports; "Putting Meat on the American Table," by Roger Horowitz

JONATHAN CORUM/THE NEW YORK TIMES

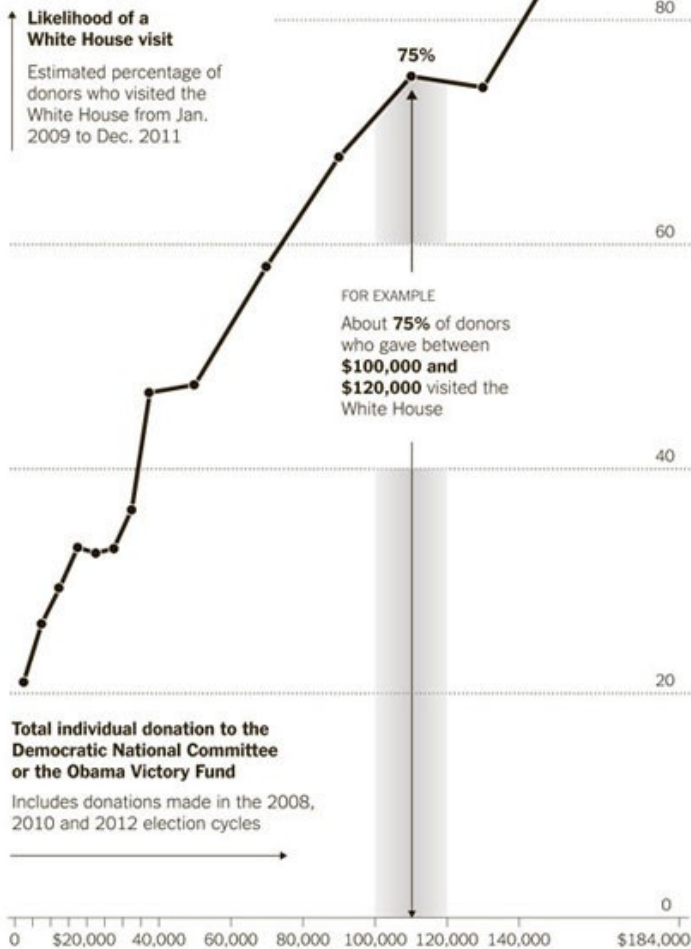
8. Association

‘Councils run by politicians who have received donations from stationery companies spend more on paper clips, with spending increasing on average by £100 for each pound donated’

But, of course, always remember that correlation and causation are not the same thing.

Major Givers Are More Likely To Get White House Access

An analysis based on matching names of White House visitors with names of Democratic donors indicates that those who gave more were more likely to visit or have meetings at the White House.

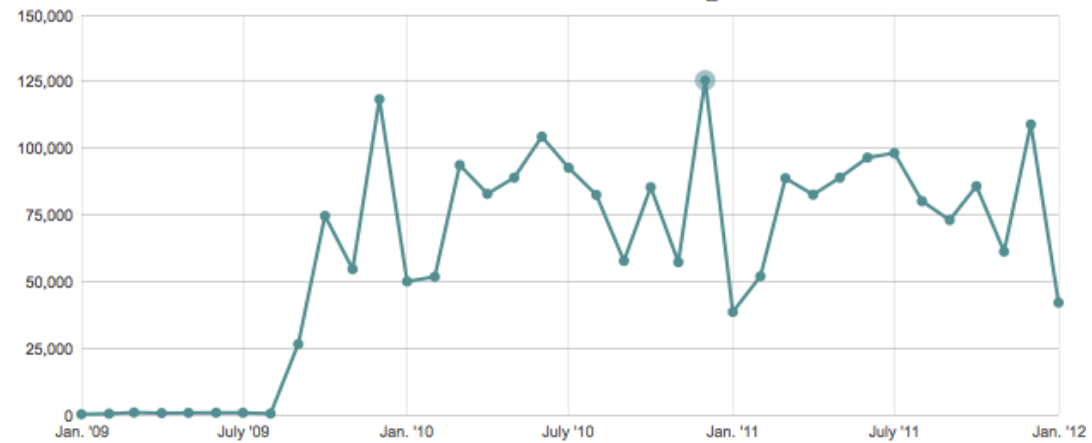


Note: This analysis is based on matching the names of donors and White House visitor logs, using middle initials where they were available. Large group tours and open houses were not included. Because names are the only identifying information released in the visitor logs, it is possible that some matched names could represent different people. These kinds of mismatches would not appreciably change the trend shown here.

Sources: Federal Election Commission, White House visitor logs (via data.gov) KEVIN QUEALY/THE NEW YORK TIMES



Number of White House visitors per month



Most Visited

STAFFER	VISITS
Barack Obama	11405
Michele Obama	817
Brian K. Bond	383
Sarah B. Fenn	375
Vivek Kundra	296
Benjamin E. Milakofsky	292

President Visits by Date

DATE	VISITS
12/07/2010	1640
12/10/2010	1638
12/06/2010	1310
12/16/2010	1276
12/14/2010	1203
12/15/2010	1062

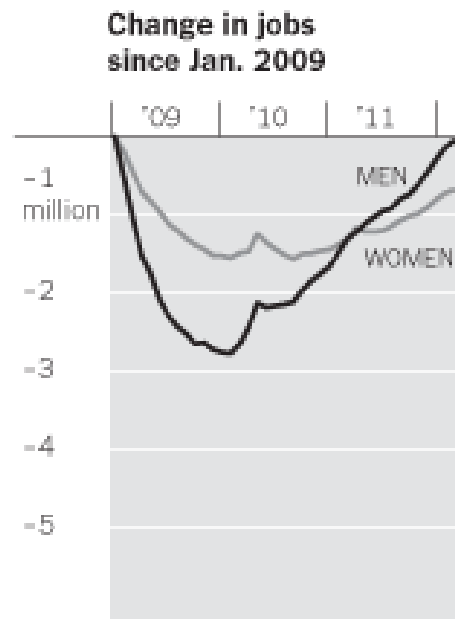
Most Visits by Event

EVENT	VISITS
HOLIDAY OPEN HOUSE	5818
HOLIDAY OPEN HOUSE/	5616
OPEN HOUSE	4783
OPEN HOUSE/	4455
Holiday Reception	1808
HOLIDAY OPEN HOUSE	1732

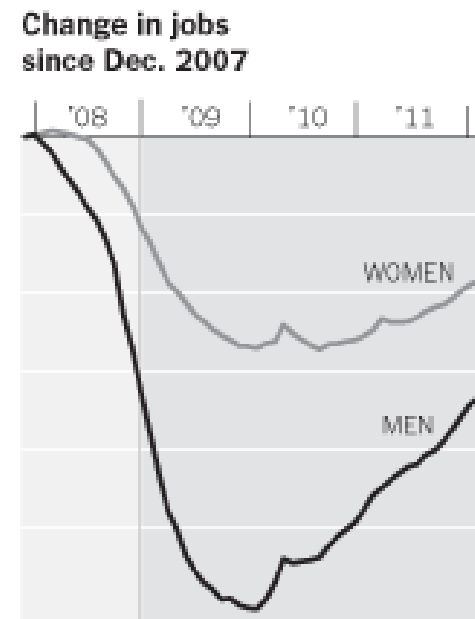
<http://apps.washingtonpost.com/svc/politics/white-house-visitors-log/?hpid=z1>

Comparing Job Losses

The number of jobs held by women is 683,000 lower than it was in January 2009, while there are only 57,000 fewer jobs held by men. But that comparison is somewhat misleading, because men lost far more jobs at the beginning of the recession.

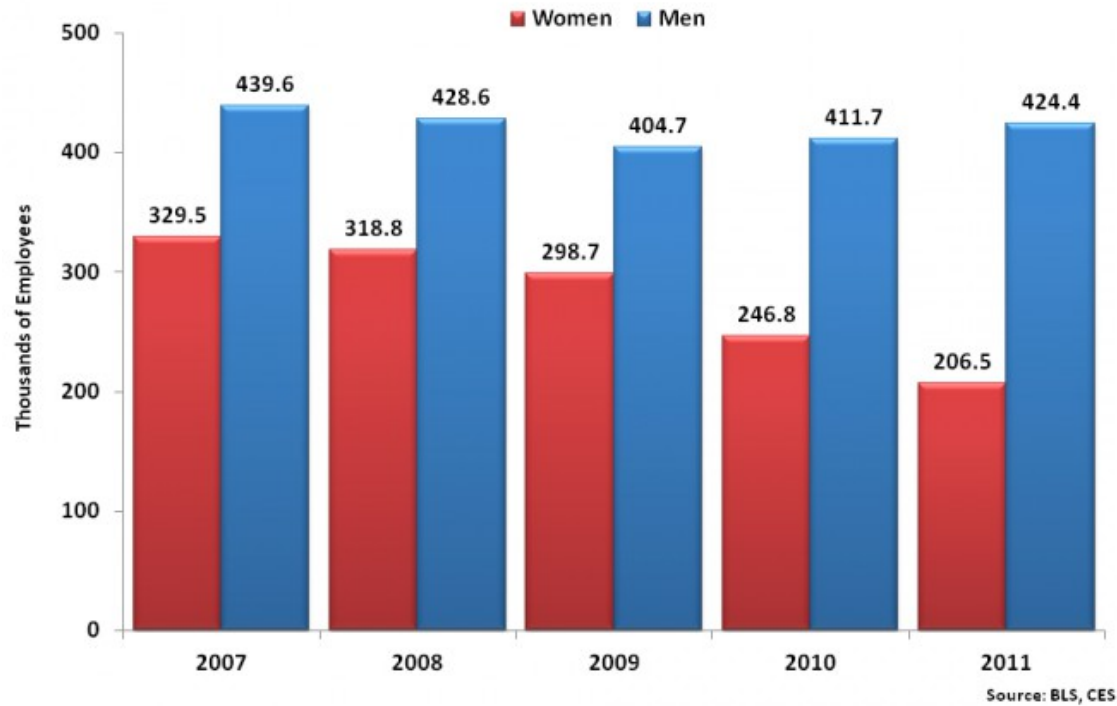


Source: Bureau of Labor Statistics



THE NEW YORK TIMES

Employment of Men and Women at the United States Postal Service 2007-2011



<http://sbronars.wordpress.com/2012/04/24/women-job-losses-and-the-postal-service/>

Keep your head on.