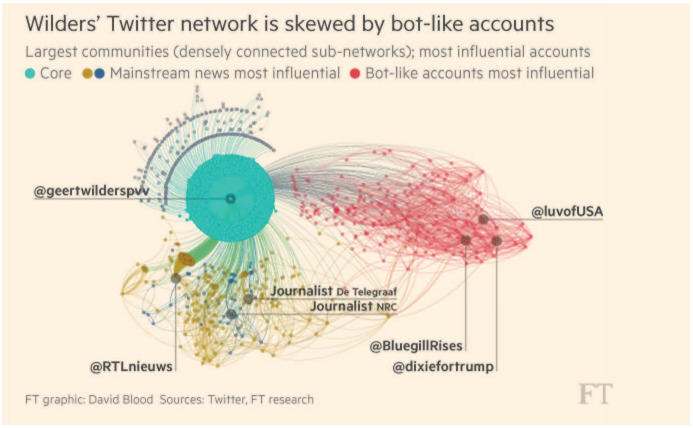
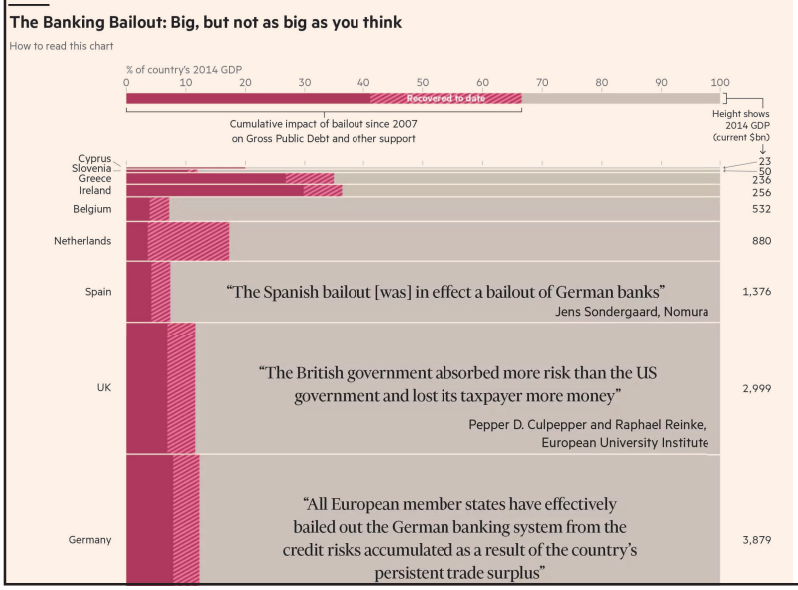


Relationship: **Flow**

Network

Used for showing the strength and inter-connectedness of relationships of varying types.

FT

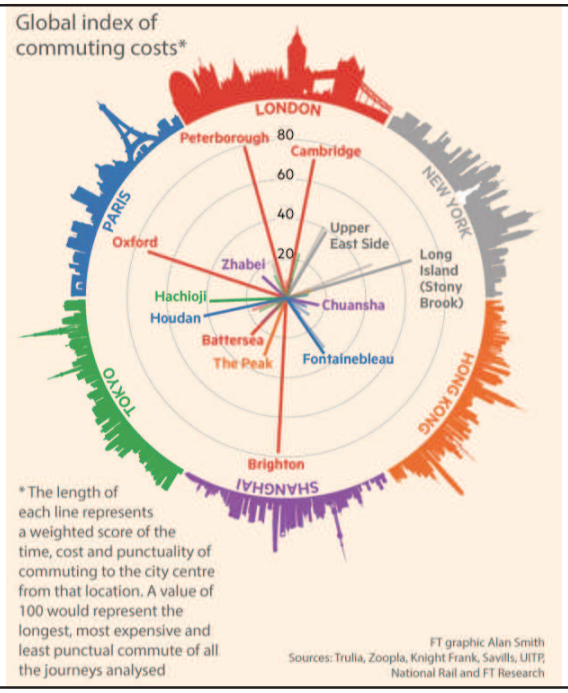


Relationships: **Part-to-whole & magnitude**

Marimekko

A good way of showing the size and proportion of data at the same time – as long as the data are not too complicated.

FT

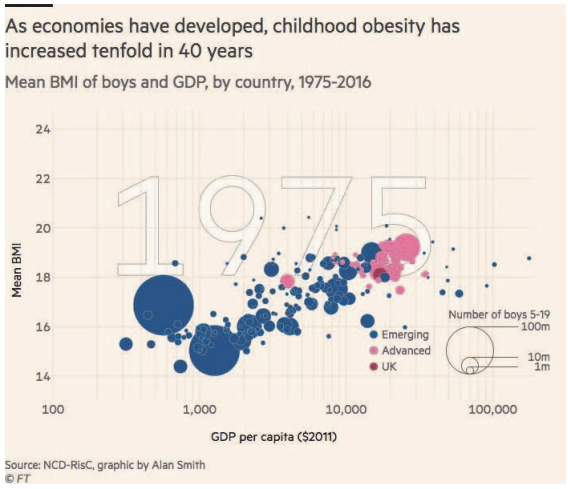


Relationship: **Magnitude**

Radar chart

A space-efficient way of showing value of multiple variables– but make sure they are organised in a way that makes sense to reader.

FT



Relationship: **Correlation**

Bubble

Like a scatterplot, but adds additional detail by sizing the circles according to a third variable.

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ft.com/visual-journalism

Using charts to build narratives

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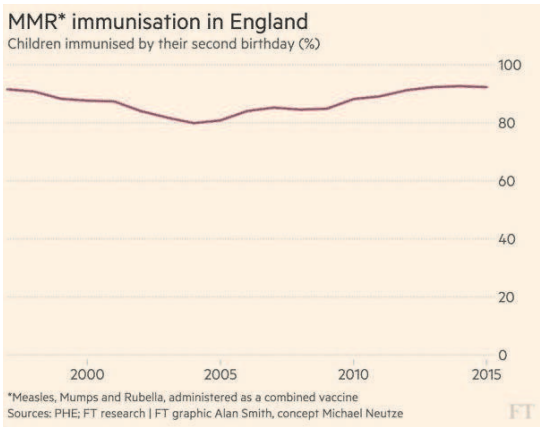
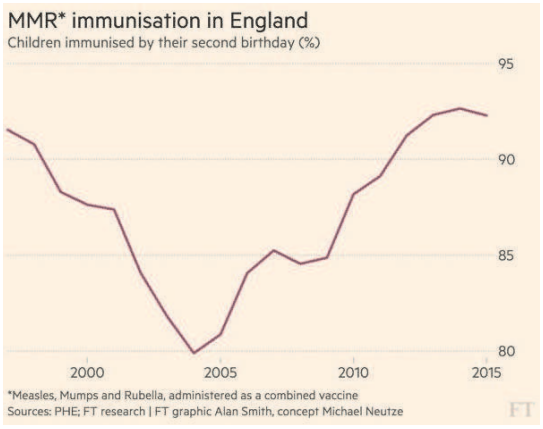

MMR* immunisation in England
Children immunised by their second birthday (%)
100
80
60
40
20
0
2000
2005
2010
2015
*Measles, Mumps and Rubella, administered as a combined vaccine
Sources: PHE; FT research | FT graphic Alan Smith, concept Michael Neutze
FT

FT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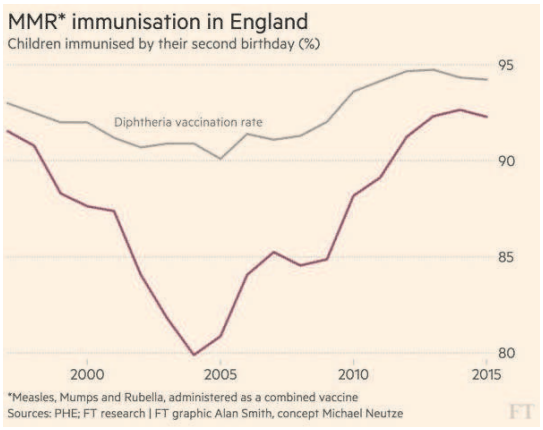
MMR* immunisation in England
Children immunised by their second birthday (%)
Diphtheria vaccination rate
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90
85
80
2000
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2010
2015
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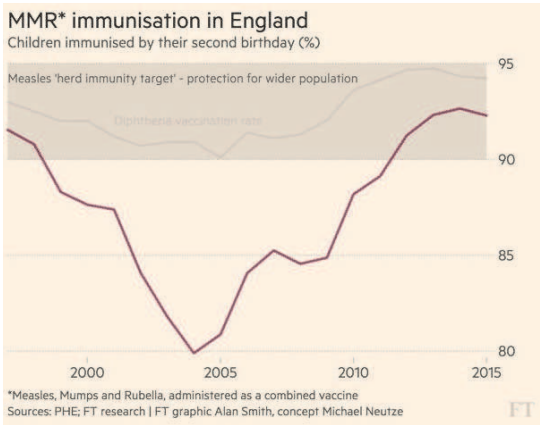
MMR* immunisation in England
Children immunised by their second birthday (%)
Measles 'herd immunity target' - protection for wider population
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90
85
80
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2015
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Sources: PHE; FT research | FT graphic Alan Smith, concept Michael Neutze
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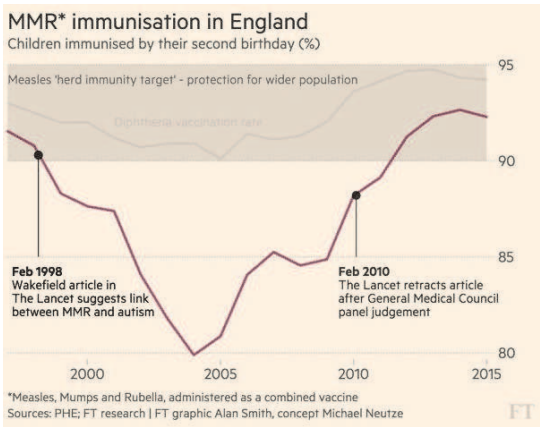
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Wakefield article in
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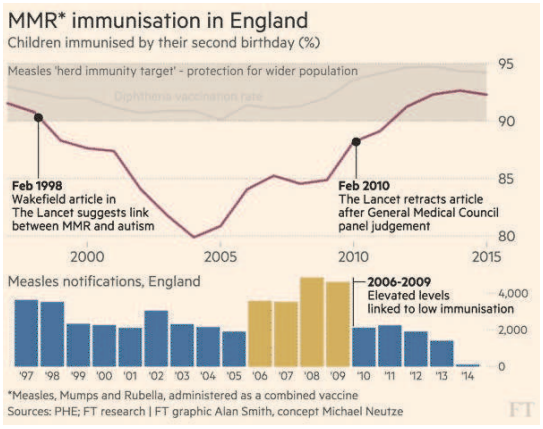
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2015
Measles notifications, England
2006-2009
Elevated levels
linked to low immunisation
4,000
2,000
0
'97 '98 '99 '00 '01 '02 '03 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14
*Measles, Mumps and Rubella, administered as a combined vaccine
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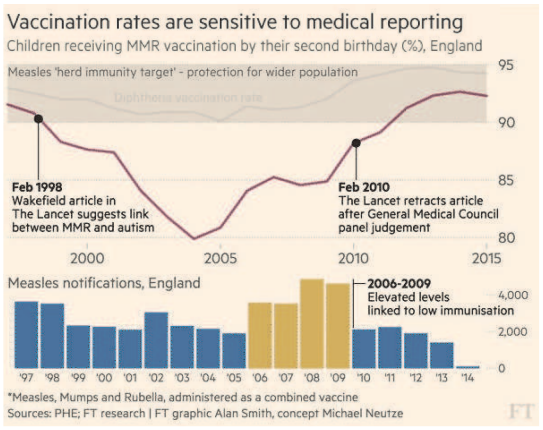
Vaccination rates are sensitive to medical reporting
Children receiving MMR vaccination by their second birthday (%), England
Measles 'herd immunity target' - protection for wider population
Diphtheria vaccination rate
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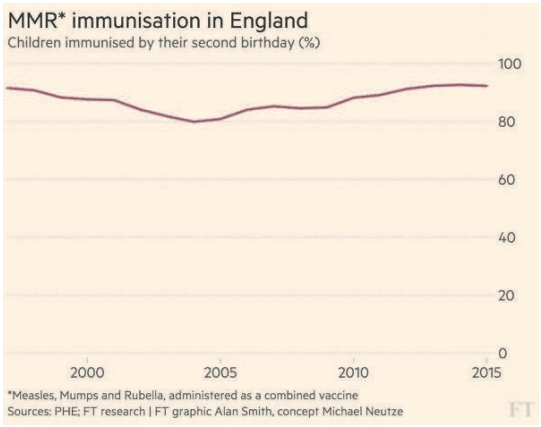
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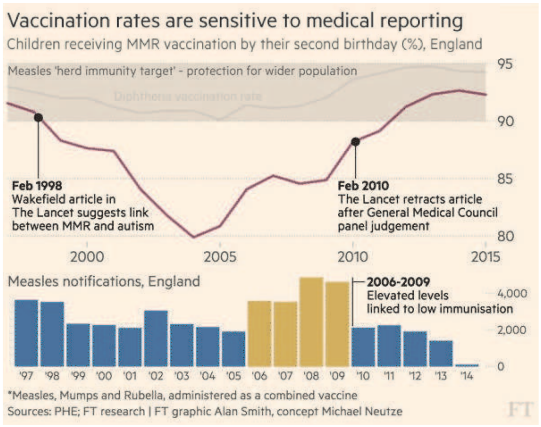
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*Measles, Mumps and Rubella, administered as a combined vaccine
Sources: PHE; FT research | FT graphic Alan Smith, concept Michael Neutze
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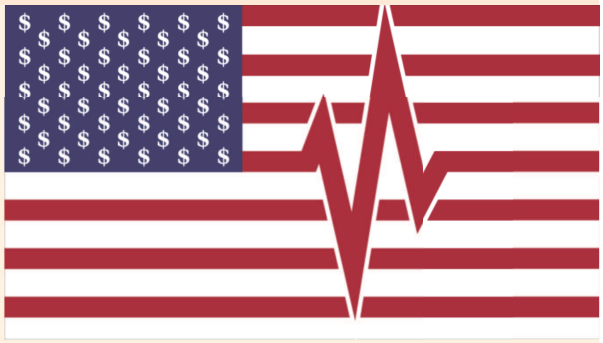
The huge disparities in US life expectancy in five charts



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JANUARY 27, 2017 by: Alan Smith and Federica Cocco

The life expectancy of Americans has failed to keep pace with the increases seen in many other developed countries, despite rapid increases in spending on healthcare.

The effect is so striking that versions of this chart have gained a lot of traction on the

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Designing charts for platform

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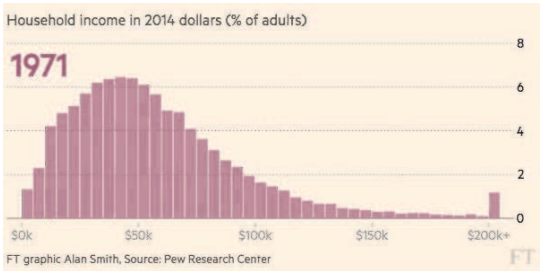
"I want to show how income *distribution* has *changed over time*"



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December 9, 2015 9:00 pm

America's Middle-class Meltdown: Core shrinks to half of US homes

Sam Fleming and Shawn Donnan

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Society splinters as bedrock of postwar economy is 'hollowed out'

America's middle class has shrunk to just half the population for the first time in at least four decades as the forces of technological change and globalisation drive a wedge between the winners and losers in a splintering US society.

The ranks of the middle class are now narrowly outnumbered by those in lower and upper income strata combined for the first time since at least the early 1970s, according to the definitions by the Pew Research Center, a non-partisan think-tank in research shared with the Financial Times.

The findings come amid an intensifying debate leading up to next year's presidential election over how to revive the fortunes of the US middle class.

Household income in 2014 dollars (% of adults)

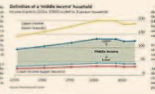
FT graphic Alan Smith, Source: Pew Research Center

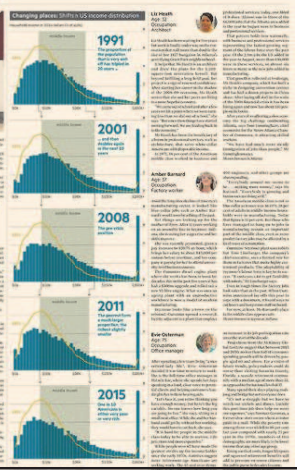
The prevailing view that the middle class is being crushed is helping to feed some of the popular anger that has boosted the populist politics personified by Donald Trump's candidacy for the Republican presidential nomination. "The middle class is disappearing," says Alison Fuller, a 25-year-old university graduate working for a medical start-up in Smyrna, Georgia, who sees herself voting for Mr Trump.

FT BIG READ. AMERICA'S MIDDLE-CLASS MELTDOWN

Middle income earners in the US are hurting amid rising job insecurity and stalled wages. In the first part of a series, *Sam Fleming* and *Shawn Donnan* speak to Americans about their work, aspirations and anxieties and ask whether society is fracturing.

Changing fortunes





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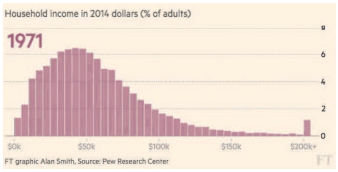
Michael Hiltzik
Columnist

Los Angeles Times
BUSINESS / Michael Hiltzik

Column America's explosion of income inequality, in one amazing animated chart

Presidential candidate Bernie Sanders has made the problems of the working class a centerpiece of his campaign pitch. But so has Donald Trump. (Rick Loomis/Los Angeles Times)



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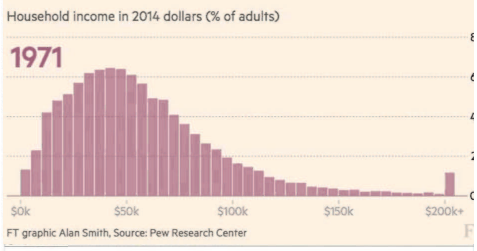
U.S. Senator Bernie Sanders
11 April at 17:49 ·

The reality is that for the last 40 years there's been an enormous transfer of wealth from the middle class and poor to the wealthiest people in this country.



America's explosion of income inequality, in one amazing animated chart

Defenders of the economic status quo in America continue to assert that economic inequality (1) doesn't exist, (2) isn't as bad as you think, or (3) is actually good for…

SANDERS.SENATE.GOV

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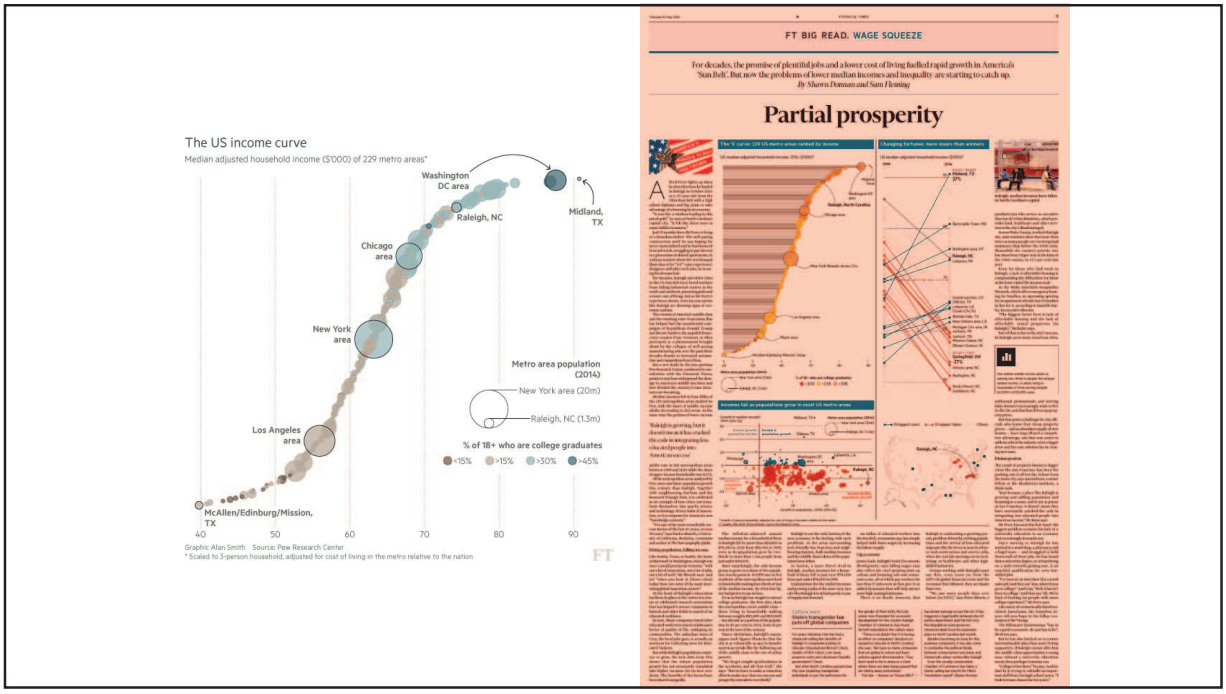
The US income curve
Median adjusted household income ($'000) of 229 metro areas*
Washington DC area
Midland, TX
Raleigh, NC
Chicago area
New York area
Los Angeles area
McAllen/Edinburg/Mission, TX
Metro area population (2014)
New York area (20m)
Raleigh, NC (1.3m)
% of 18+ who are college graduates
<15%
>15%
>30%
>45%
40
50
60
70
80
90
Graphic Alan Smith Source: Pew Research Center
* Scaled to 3-person household, adjusted for cost of living in the metro relative to the nation
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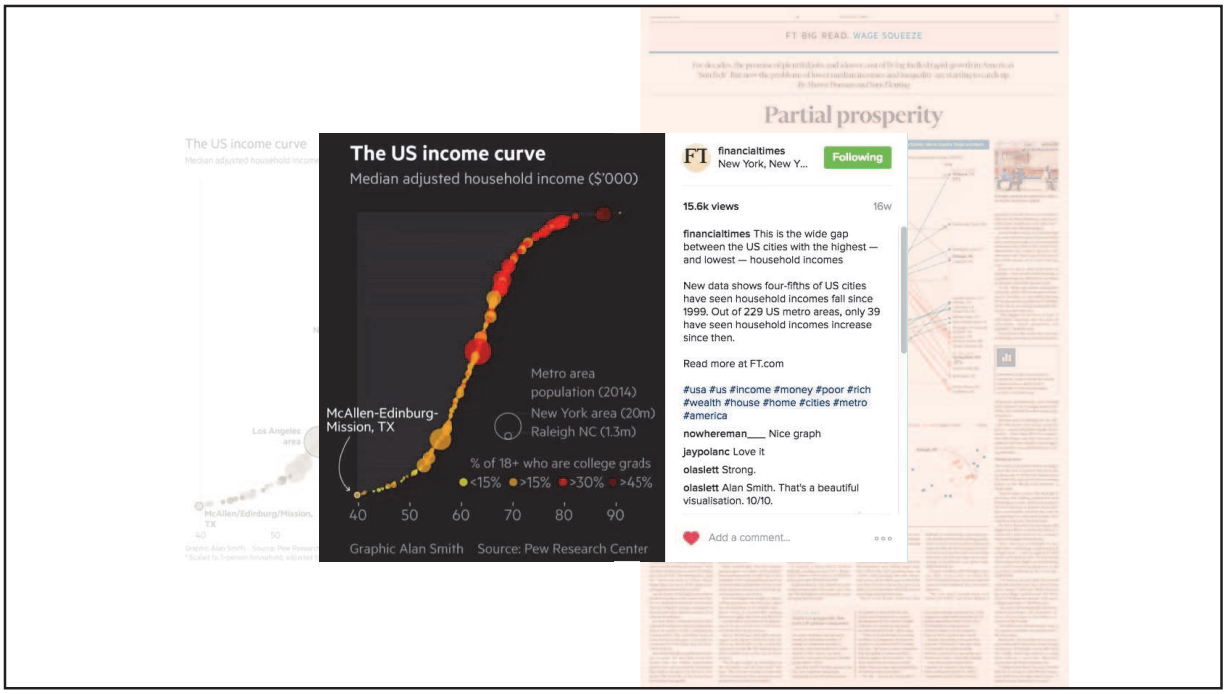
FT BIG READ. WAGE SQUEEZE
Partial prosperity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70
80
90
Graphic Alan Smith Source: Pew Research Center
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financialtimes
New York, New Y...
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financialtimes This is the wide gap between the US cities with the highest — and lowest — household incomes
New data shows four-fifths of US cities have seen household incomes fall since 1999. Out of 229 US metro areas, only 39 have seen household incomes increase since then.
Read more at FT.com
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nowhereman___ Nice graph
jaypolanc Love it
olaslett Strong.
olaslett Alan Smith. That's a beautiful visualisation. 10/10.
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Partial prosperity

Skills

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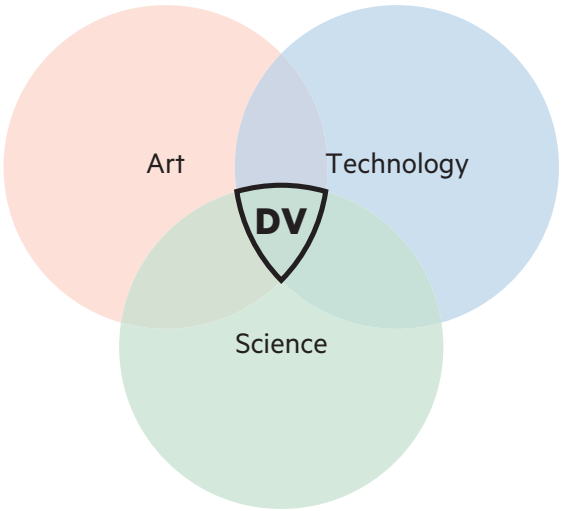

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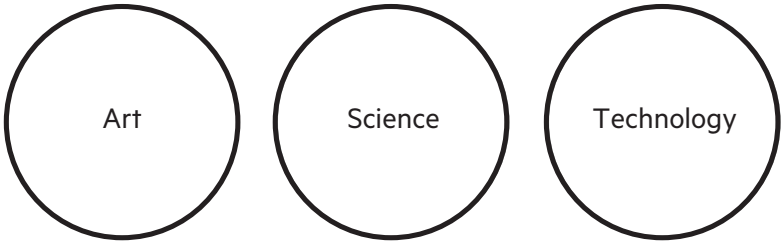

"Everything that we don't need to do"

Brian Eno

"Things that don't work properly yet"

Danny Hillis

"People are fed up of experts"

Michael Gove

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Tools

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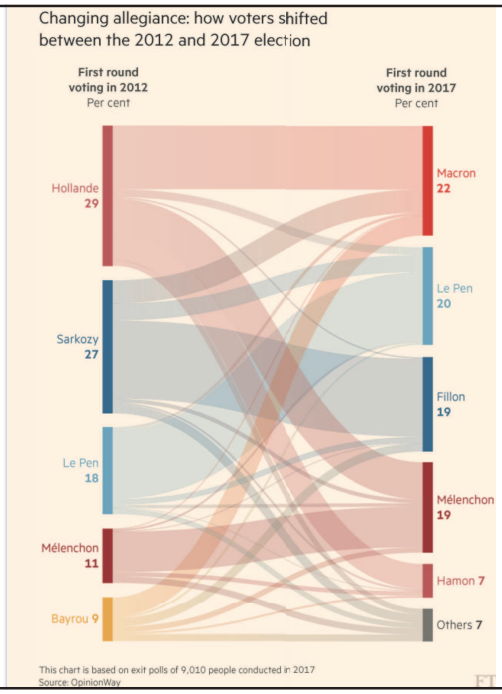
Changing allegiance: how voters shifted between the 2012 and 2017 election
First round voting in 2012
Per cent
First round voting in 2017
Per cent
Hollande 29
Sarkozy 27
Le Pen 18
Mélenchon 11
Bayrou 9
Macron 22
Le Pen 20
Fillon 19
Mélenchon 19
Hamon 7
Others 7
This chart is based on exit polls of 9,010 people conducted in 2017
Source: OpinionWay
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"We focus way too much on technological innovation and ...way too little on thinking"

–Alberto Cairo, Knight Chair of Visual Journalism at the University of Miami, author of "The Functional Art", "The Truthful Art"

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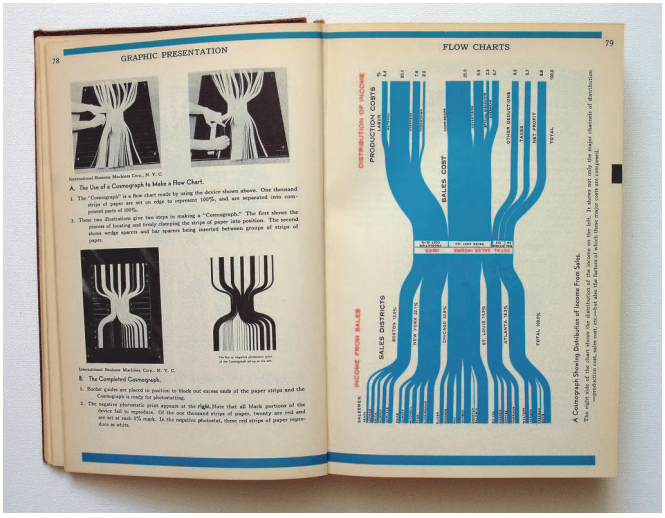

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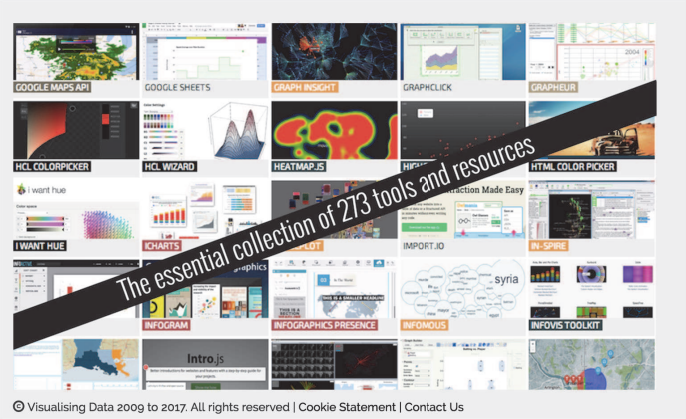
http://www.visualisingdata.com/resources/



Andy Kirk

FT

Pros

- Free, powerful, open source
- Programming means any chart/map type is possible
- Robust, modular statistical computing engine
- Enthusiastic community

Cons

- Not as easy to get going as with 'drag and drop' software - requires programming and statistical knowledge
- Achieving "publication-quality" outputs takes some effort

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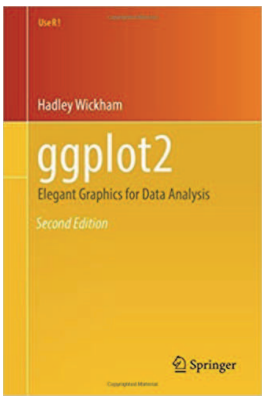
Recommended read
"ggplot2 Elegant graphics for data analytics" by Hadley Wickham



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Pros

- Free, open source
- Amazingly powerful web visualisations, including animation and interactivity

Cons

- Requires (complex) programming knowledge
- Not designed for quick turnaround charts

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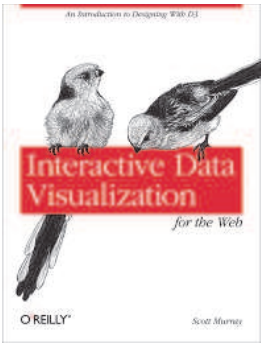
Recommended read
"Interactive data visualisation for the web" by Scott Murray



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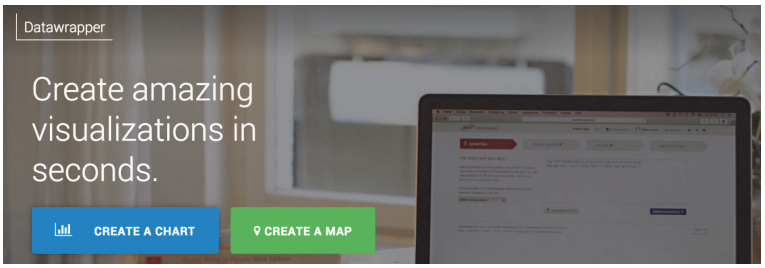

Datawrapper.de

- Quick charts and maps using a browser-based tool (uses d3) - no programming needed
- Basic chart and map types

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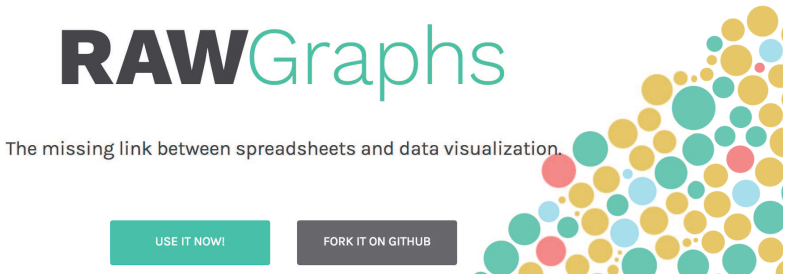

rawgraphs.io

- Quick charts and maps using a browser-based tool (uses d3) - no programming needed
- Sophisticated chart types, many as featured on the Visual Vocabulary

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Adobe Illustrator

- Desktop publishing software, essential for publication-quality static outputs
- Vector editing package capable of raster and vector outputs
- Has its own charting tool – best avoided!

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Inkscape

- A free alternative to Illustrator for editing vector files
- Not as polished as Illustrator — but it's free!

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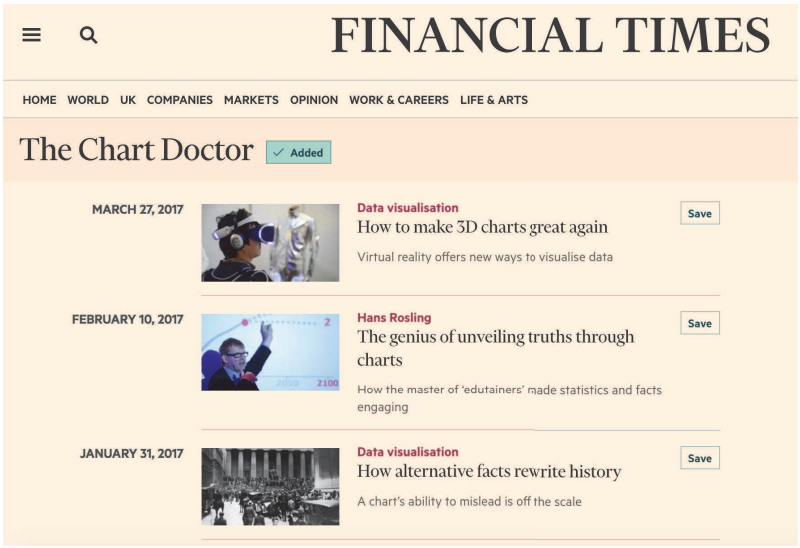
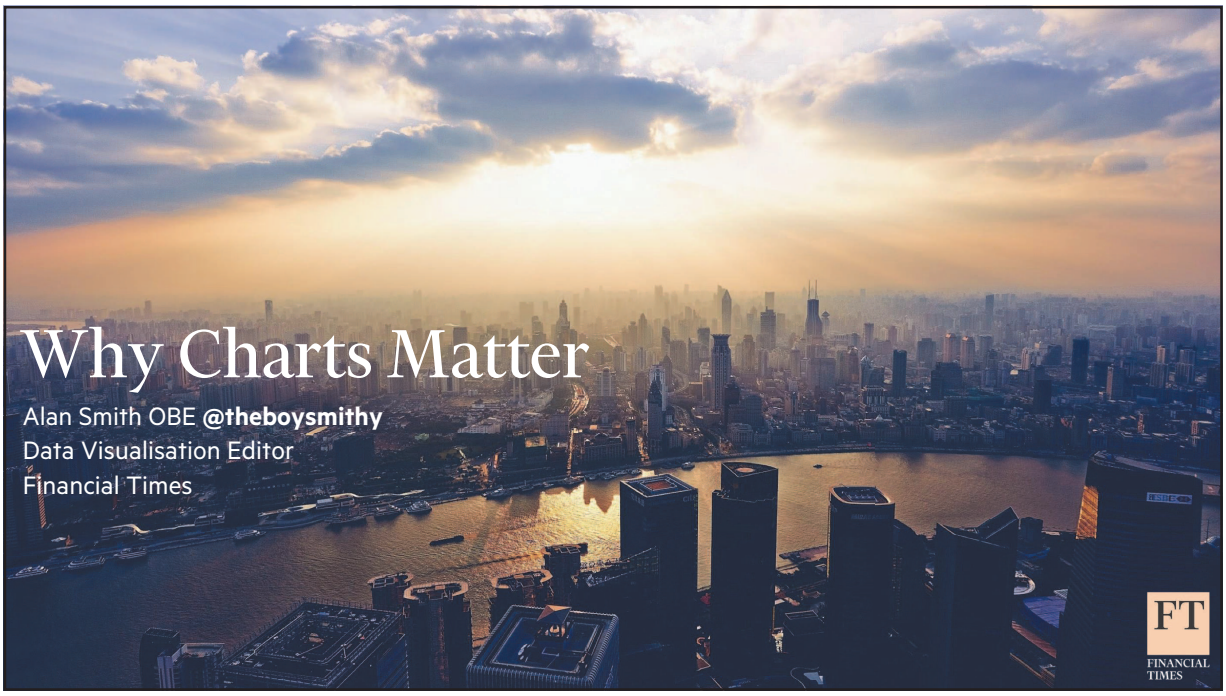
ft.com/chart-doctor




Why Charts Matter
Alan Smith OBE @theboysmithy
Data Visualisation Editor
Financial Times
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