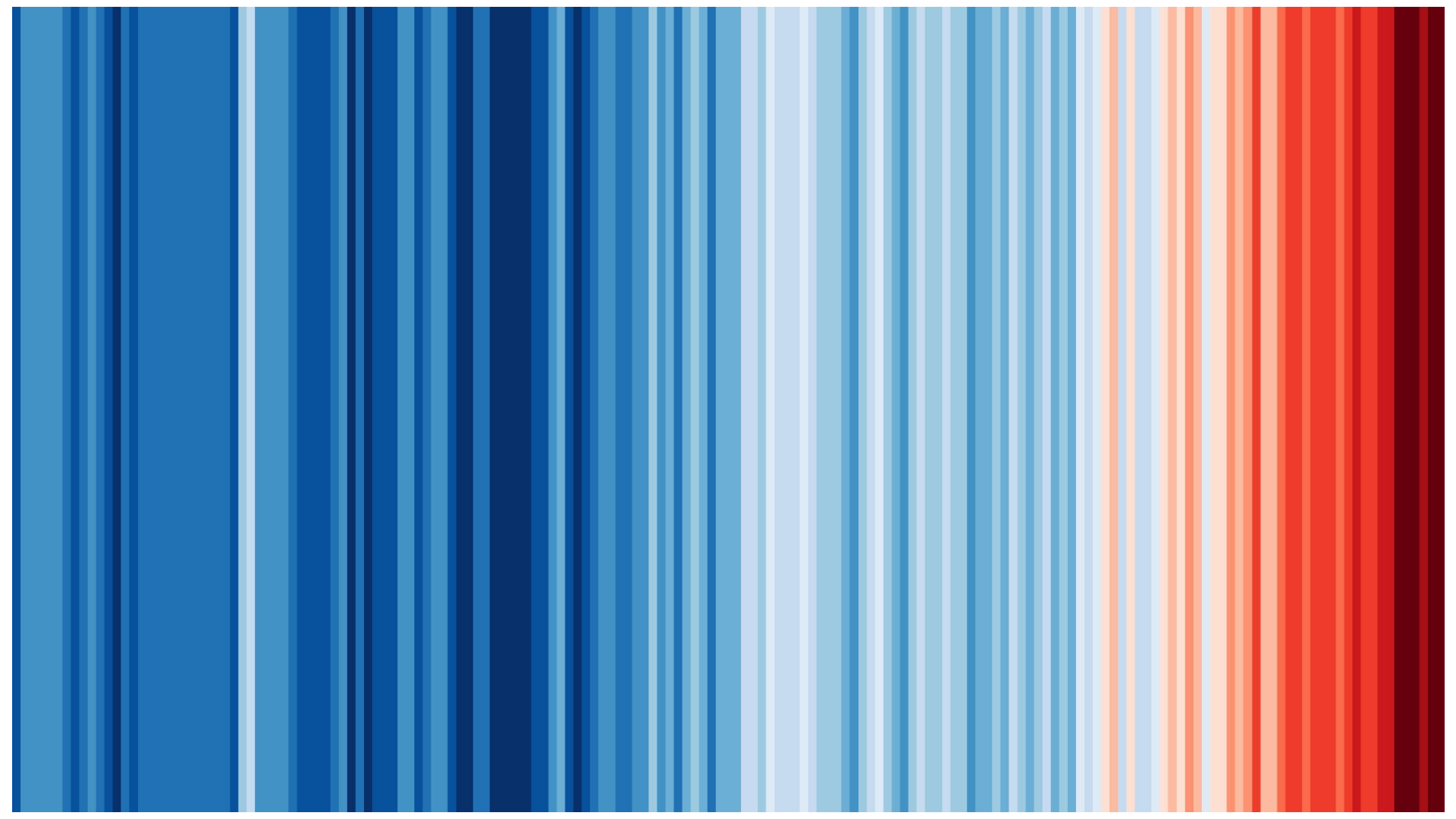




# Data storytelling for charities

**Alan Rutter**  
Fire Plus Algebra



“By visualizing information, we turn it into a landscape that you can explore with your eyes. A sort of information map. And when you’re lost in information, an information map is kind of useful.”

**David McCandless**  
Information is Beautiful

# Me

@alanrutter

@FireAlgebra

alan@fireplusalgebra.com

fireplusalgebra.com

CONDÉ NAST  
INTERNATIONAL



guardianmasterclasses  
What will you master?



# What's the biggest challenge?

1



IDENTIFYING THE  
KEY MESSAGE

2



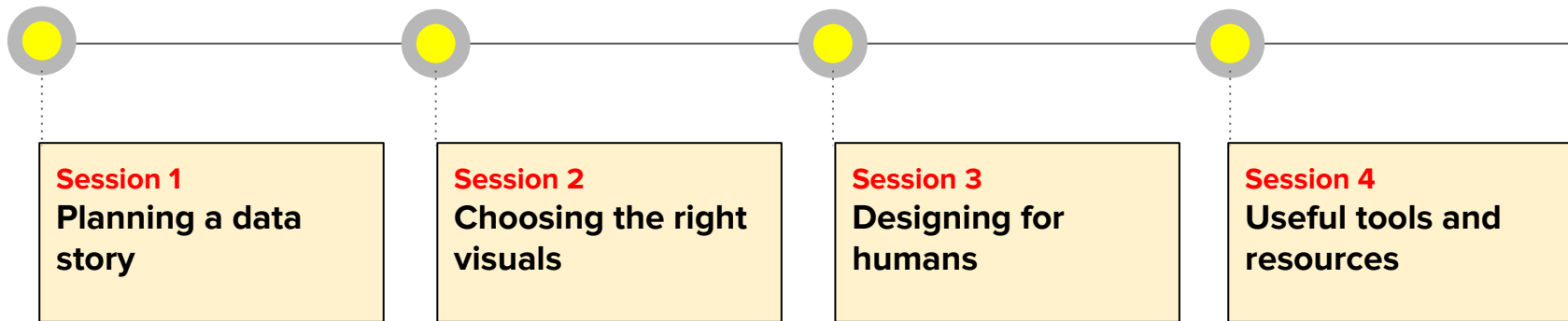
CHOOSING THE  
RIGHT VISUAL

3



MAKING GREAT  
DESIGN CHOICES

# Agenda

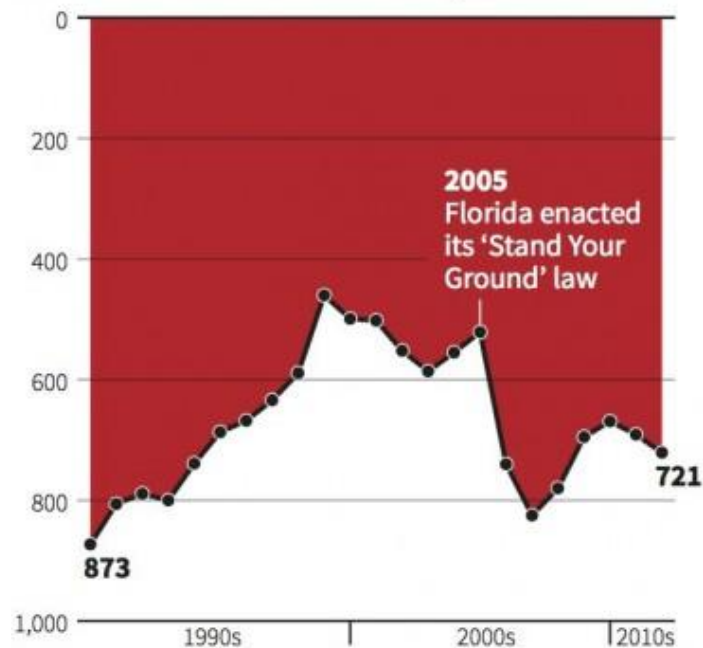


1

# Planning a data story

# Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

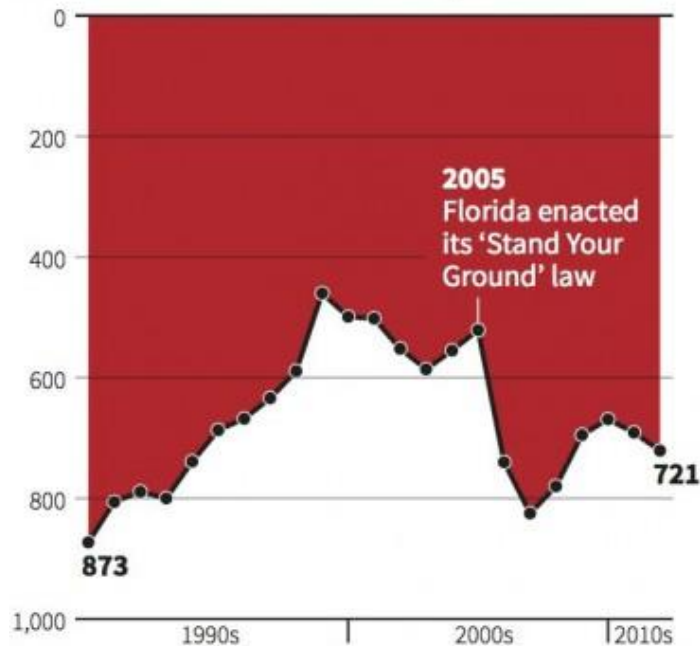
REUTERS

Published by Reuters



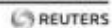
# Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

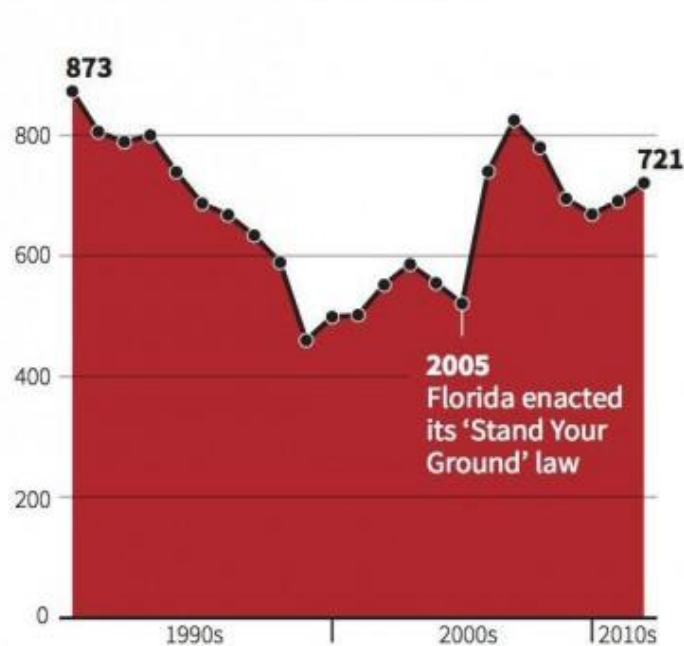
C. Chan 16/02/2014



Published by Reuters

# Gun deaths in Florida

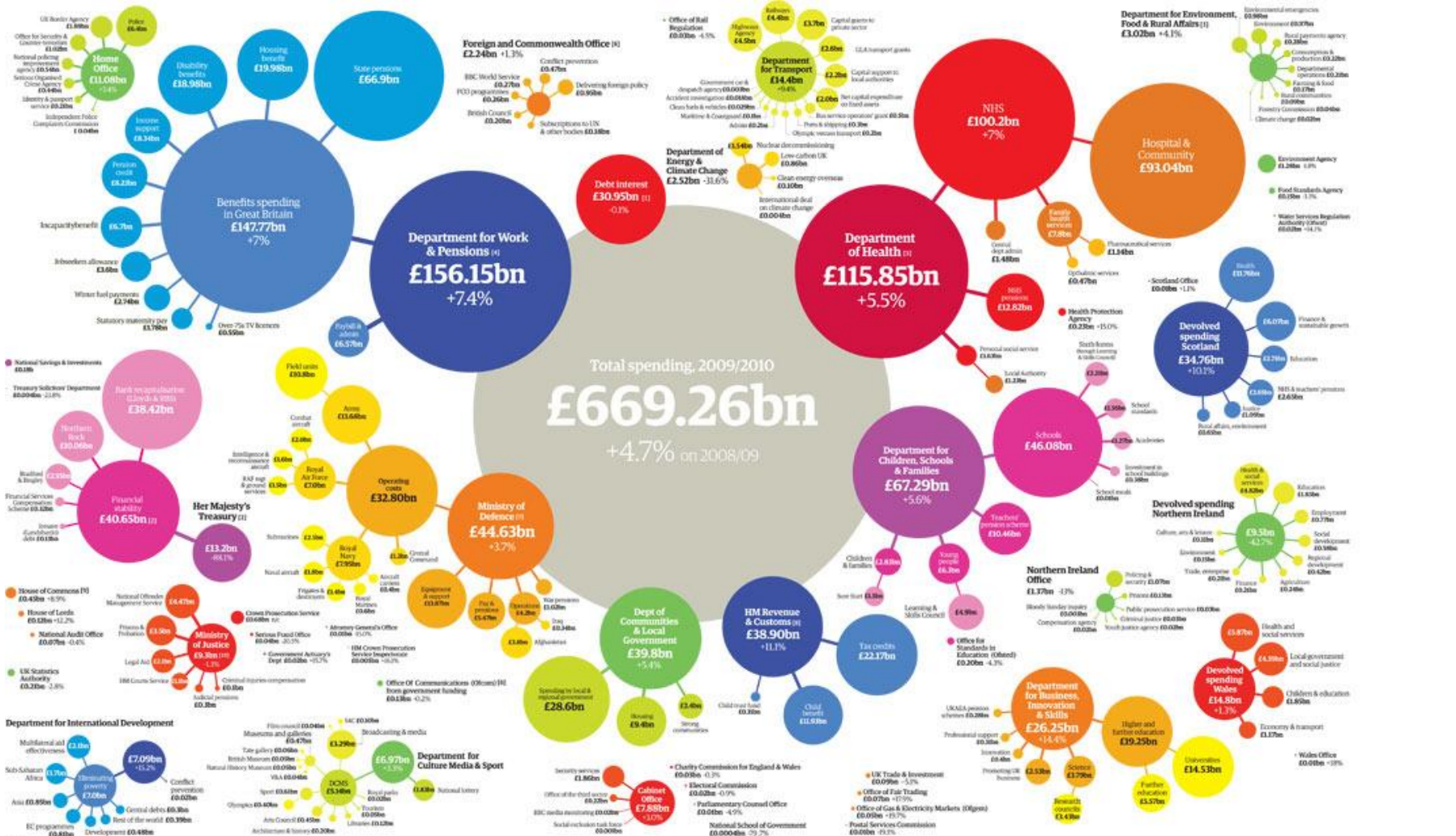
Number of murders committed using firearms



Source: Florida Department of Law Enforcement

Fixed by Business Insider

Total spending, 2009/10  
**£669.26bn**  
+4.7% on 2008/09



Notes: 1. The figures are estimates of the total spending of the government departments and are not intended to represent the total spending of the government. The figures are based on the accounts of the government departments and are subject to audit. 2. The figures are rounded to the nearest 0.1% and may not add due to rounding. 3. The figures are based on the accounts of the government departments and are subject to audit. 4. The figures are rounded to the nearest 0.1% and may not add due to rounding. 5. The figures are based on the accounts of the government departments and are subject to audit. 6. The figures are rounded to the nearest 0.1% and may not add due to rounding. 7. The figures are based on the accounts of the government departments and are subject to audit. 8. The figures are rounded to the nearest 0.1% and may not add due to rounding. 9. The figures are based on the accounts of the government departments and are subject to audit. 10. The figures are rounded to the nearest 0.1% and may not add due to rounding.

# If the Twitter community were 100 people

20 dead  
(empty accounts)

only 5  
with more than 100 followers

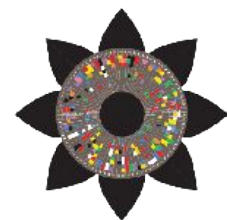


50 lazy  
not tweeted in the last week

5 loud mouths  
creating 75% of the tweets

55 45

32% bots



Information is Beautiful



# THE WORLD OF DATA

NUMBER OF EMAILS SENT EVERY SECOND

2.9

MILLION



DATA CONSUMED BY HOUSEHOLDS EACH DAY

375

MEGABYTES



VIDEO UPLOADED TO YOUTUBE EVERY MINUTE

20

HOURS



DATA PER DAY PROCESSED BY GOOGLE

24

PETABYTES



TWEETS PER DAY

50

MILLION



TOTAL MINUTES SPENT ON FACEBOOK EACH MONTH

700

BILLION



DATA SENT AND RECEIVED BY MOBILE INTERNET USERS

1.3

EXABYTES



PRODUCTS ORDERED ON AMAZON PER SECOND

72.9

ITEMS



IN THE 21ST CENTURY, we live a large part of our lives online. Almost everything we do is reduced to bits and sent through cables around the world at light speed. But just how much data are we generating? This is a look at just some of the massive amounts of information that human beings create every single day.

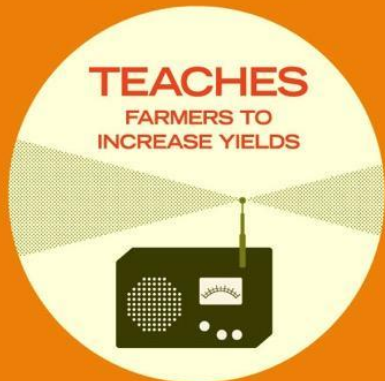
SOURCES: Cisco, comScore, MapR, Reducy, Radicati Group, Twitter, YouTube

# SIMPLE INNOVATIONS HELP AFRICAN FARMERS THRIVE

Approximately one billion people live in chronic hunger and more than one billion live in extreme poverty. Most are small farmers in the developing world. Helping these farming families to be more productive is one proven solution to reducing poverty and hunger. Simple solutions like the ones shown here are helping make a difference in the lives of smallholder farmers and their families.

## Better Information

**TEACHES**  
FARMERS TO  
INCREASE YIELDS



Working with radio stations in five African countries, a radio project has reached 39 million farmers with valuable information on a range of agricultural techniques to help farmers improve their productivity and access to markets.

## Better Seeds

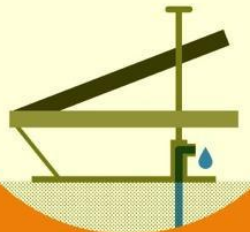
**30%**  
MORE YIELD IN  
DROUGHT-PRONE AREAS



New and improved maize (corn) varieties that can survive on less water are already helping more than 2 million smallholder farmers in Africa get higher yields and incomes.

## Better Tools

**50%**  
MORE AFFORDABLE  
THAN MOTORIZED PUMPS



Instead of buying motorized pumps that are costly and difficult to maintain, farmers are using "foot power" to operate treadle pumps that can lift water from 20 feet below the surface.

## Better Storage

**PROTECTS**  
CROPS FROM INSECTS

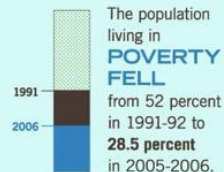
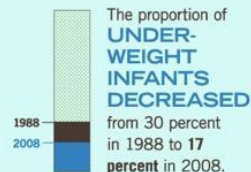
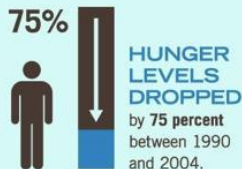


Special storage bags cost only \$2 and protect cowpea crops from destructive insects. Since 2007, more than one million bags have been sold, saving harvests for thousands of farmers.



## GROWING SUCCESS IN GHANA

Facing severe food shortages in the mid-1980s, the Ghanaian government increased investments to help rebuild the nation's agricultural system. Through this effort, farmers received technical advice, seeds, fertilizer, ways to manage insects and disease, and gained access to new markets.



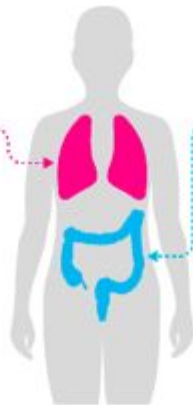
# TOBACCO vs MEAT WHAT'S THE RISK?

The **EVIDENCE** that processed meat causes cancer is as strong as the evidence for tobacco, but the **RISK** from tobacco is much higher...

CANCERS CAUSED BY TOBACCO



OF ALL CANCERS



CANCERS CAUSED BY PROCESSED AND RED MEAT



OF BOWEL CANCERS



OF ALL CANCERS

THE NUMBER OF CANCERS PER YEAR IN THE UK THAT COULD BE PREVENTED IF...

NO-ONE SMOKED 



64,500 FEWER CASES

NO-ONE ATE ANY PROCESSED OR RED MEAT



8,800 FEWER CASES

 = 1,000 PEOPLE

Source: [cruk.org/cancerstats](http://cruk.org/cancerstats)



CANCER RESEARCH UK

# The essential ingredients

**Audience**



**Story**



**Action**



# A data visualisation framework

## AUDIENCE

- Who exactly are you presenting the data to?
- How much do they know about the subject?

## STORY

- How data-literate are they?
- Are they likely to be hostile, or receptive?

## ACTION

- What format are they receiving the information in?
- How long will they spend with it?



# A data visualisation framework

## AUDIENCE

- What is the key message, or the bottom line?
- Can you sum it up in a single sentence?

## STORY

- Are there multiple stories to tell?
- What do you need to include to tell the story?

## ACTION

- What can you leave out entirely?
- What is the best visual approach?

# A data visualisation framework

AUDIENCE

- What do you want them to do next?
- Take a specific action?

STORY

- Carry out a piece of work based on the information?
- Change their behaviour?

**ACTION**

- Is the action achievable by them?
- Is the action measurable by you?

Exercise:

## Audience, Story, Action

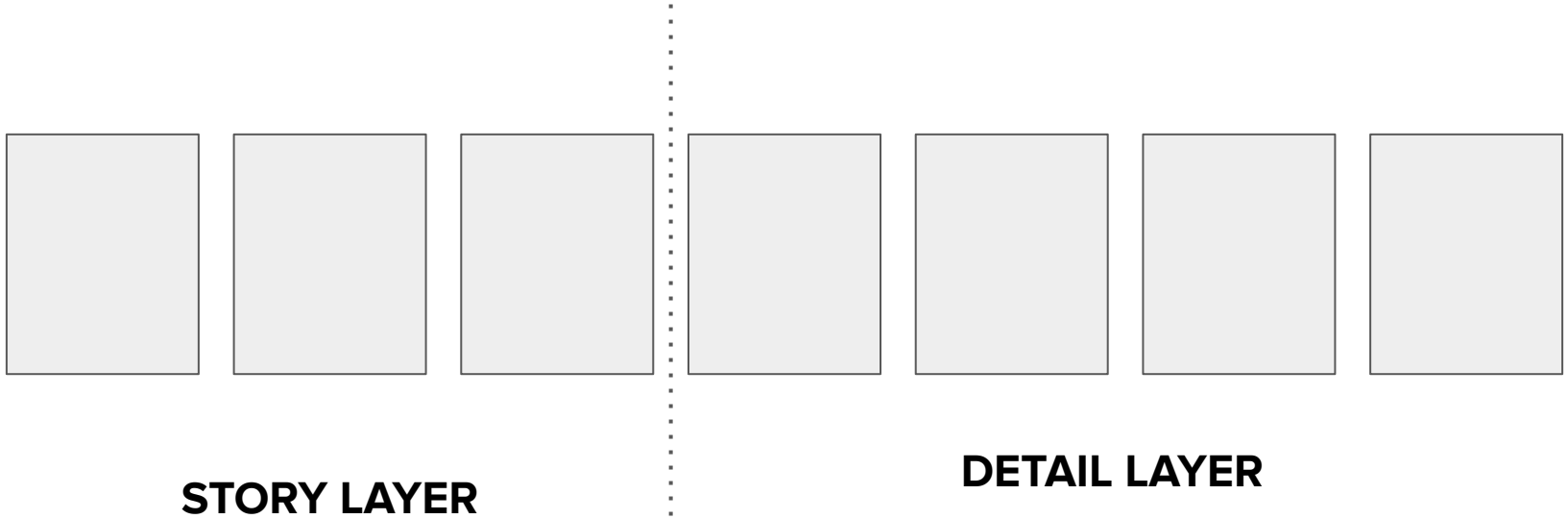
In groups, agree on a real-world example of data that needs to be communicated to somebody.

Discuss and agree:

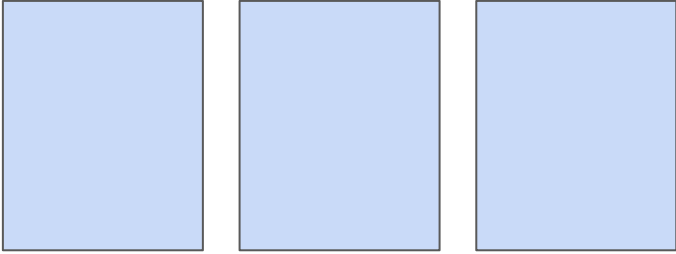
- **Audience** Who are you communicating with?
- **Story** What specific message do you need to communicate?
- **Action** What do they need to do next?

Try to sketch out what the visualisation would look like using **Padlet**.

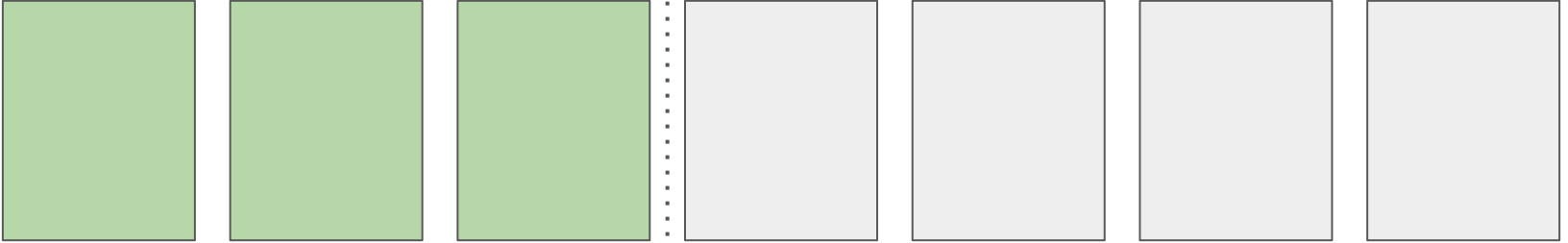
# Structuring longer reports



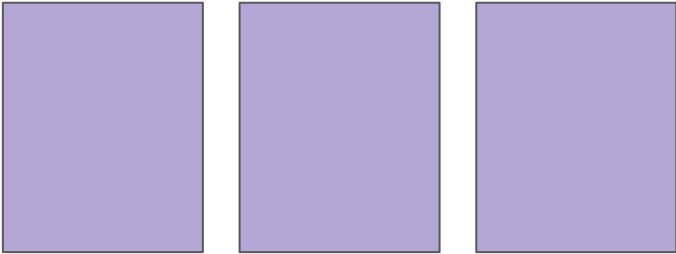
**1**



**2**



**3**



# Weather data

☰ Tokyo +

21°   
Cloudy  
RealFeel® 20°

 53% |  24° 21° |  2m/s

 Thursday 23° 22°  
 Friday 24° 17°  
 Saturday 21° 15°

Expect rainy weather late on Friday night until late on Sunday night




EXTENDED FORECAST



AccuWeather.com

◀ ◻ ◻

☰ Malmö +

-2°   
Snow  
RealFeel® -5°

 97% |  0° -5° |  14m/s

 Thursday -2° -4°  
 Friday -3° -5°  
 Saturday -5° -8°

Expect more snow later this evening

EXTENDED FORECAST

AccuWeather.com

◀ ◻ ◻

☰ London +

6°   
Rain  
RealFeel® 5°

 54% |  8° 3° |  12m/s

 Thursday 9° 7°  
 Friday 12° 10°  
 Saturday 5° 6°

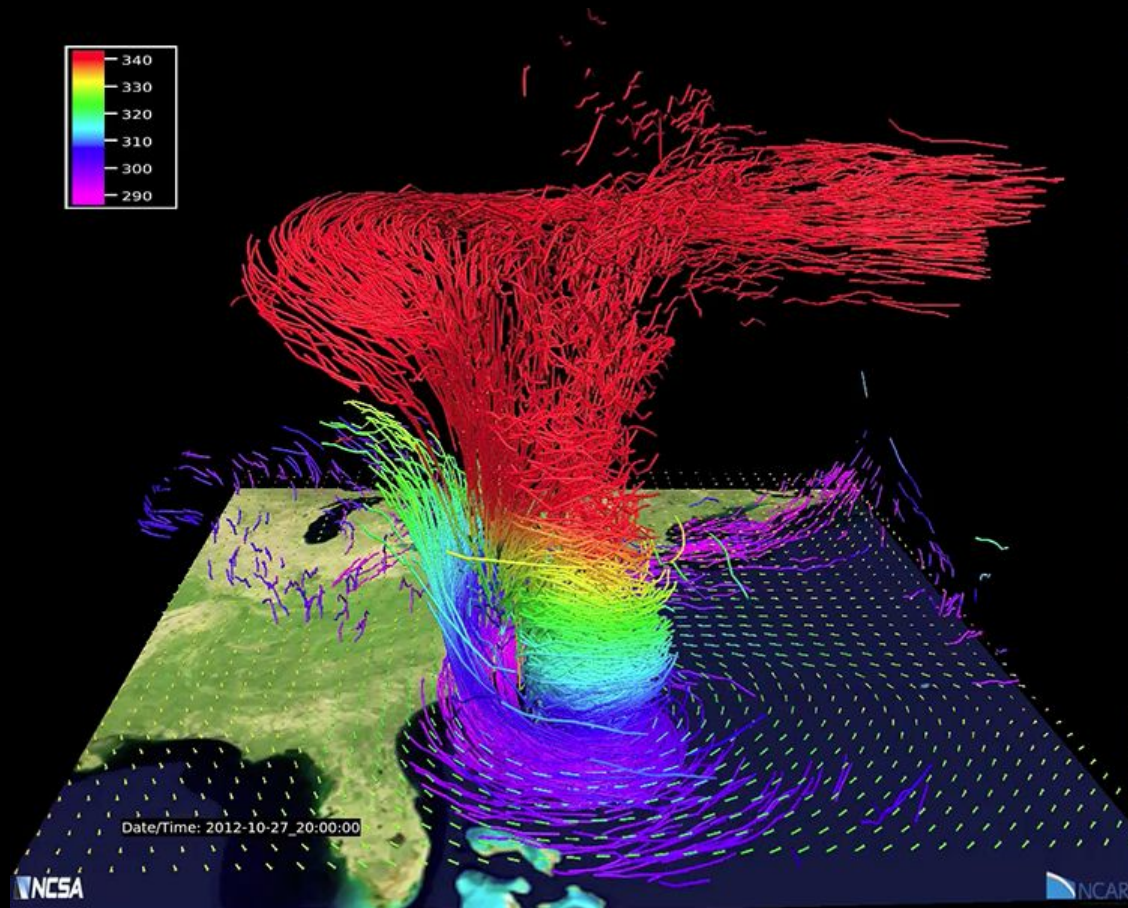
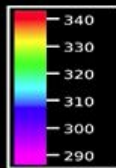
Expect showers Thursday evening

EXTENDED FORECAST

AccuWeather.com

◀ ◻ ◻

# Weather data

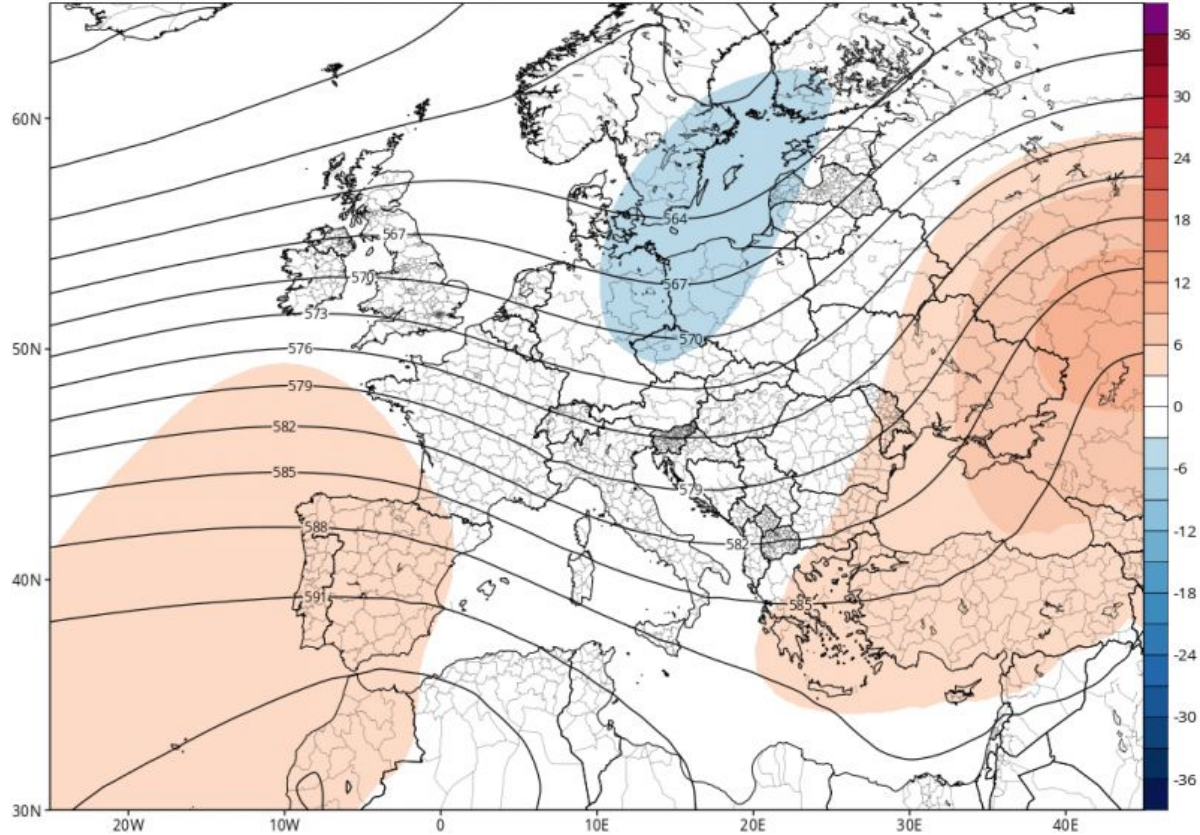


# Weather data

GEFS Mean 500mb GPH & Anomaly (dam) from 06z13Jul2016 to 06z18Jul2016 (Days 6-10)

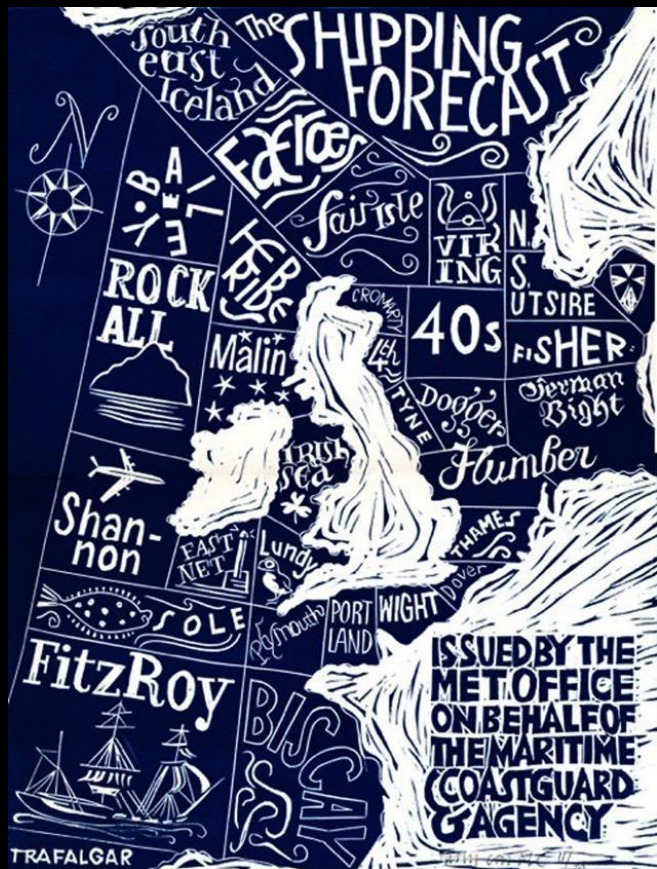
Init: 06z Jul 08 2016 Forecast Hour: [240] valid at 06z Mon, Jul 18 2016

TROPICALTIDBITS.COM





# Weather data



## THE SHIPPING FORECAST



## The Beaufort Scale

- 0 Calm
- 1 Light Air
- 2 Light Breeze
- 3 Gentle Breeze
- 4 Moderate Breeze
- 5 Fresh Breeze
- 6 Strong Breeze
- 7 High Wind
- 8 Gale
- 9 Strong/Severe Gale
- 10 Storm
- 11 Violent Storm
- 12 Hurricane Force

# Let's take a short break



(No need to leave the meeting!)

2

## Choosing the right visuals

# Aesthetics v function

**ART**

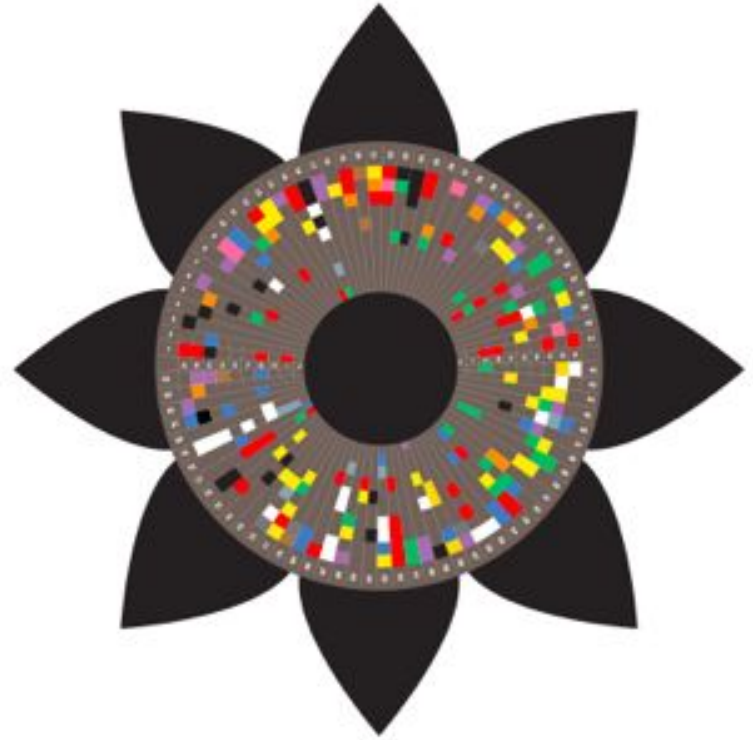
**ACADEMIA**



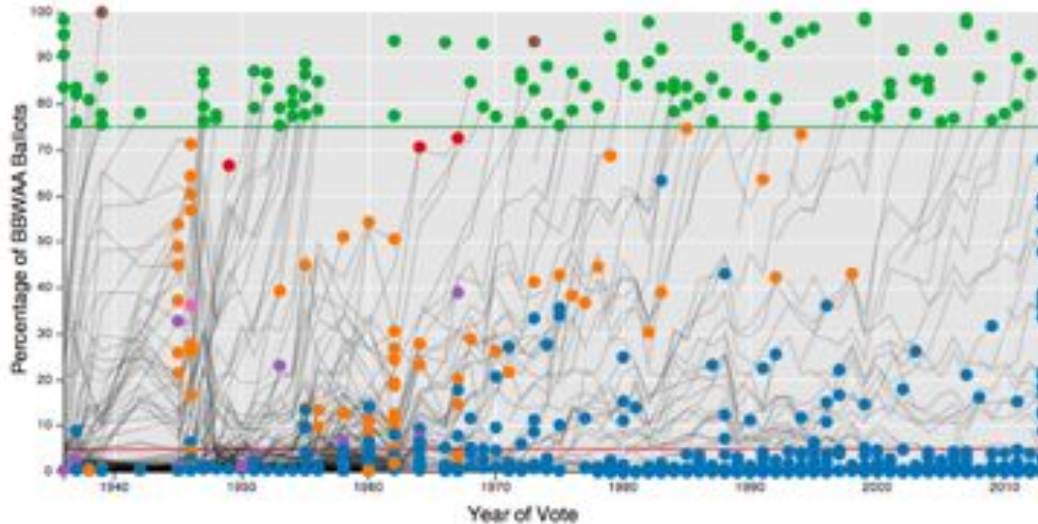
# Aesthetics v function

## ART

- Beautiful and imaginative.
- Heavy design aesthetic.
- Seen on posters and magazines.
- Demands time to consume.
- Low on actionable insights.



# Aesthetics v function



## ACADEMIA

- Rigorous and accurate.
- Aimed at expert audiences.
- Confusing to a lay person.
- Seen in academic literature.
- Low on actionable insights.

# Infographics vs data viz

## 4 STEPS TO CREATING AN INFOGRAPHIC OUTLINE FROM EXISTING CONTENT

Infographic outlines help you streamline the design process and create sweet infographics (like this one!). Follow these steps to create an infographic outline from an existing blog post, report, ebook and more.

### 1. DETERMINE YOUR CONTENT'S KEY TAKEAWAYS

What are the most important points that you want your audience to know? You can summarize your entire piece of content, or focus in on one key section.



### 2. ORGANIZE WITH SECTIONS AND HEADERS

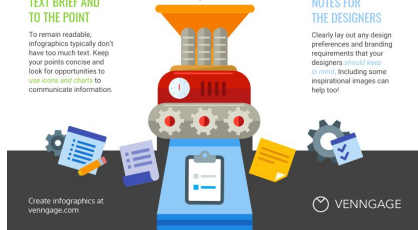
Your title and subheaders should be short and descriptive. Each section of your infographic should only be a few points or a couple sentences.

### 3. KEEP YOUR TEXT BRIEF AND TO THE POINT

To remain readable, infographics typically don't have too much text. Keep your points concise and look for opportunities to link icons and charts to communicate information.

### 4. INCLUDE NOTES FOR THE DESIGNERS

Clearly lay out any design preferences and branding requirements that your designers need to know. Including some inspirational images can help too!



INFOGRAPHIC

DATA VISUALISATION

INFORMATION DESIGN

## Volume by payment solution

■ Braintree US ■ Stripe ■ Ayden EU ■ Braintree EU ■ Ayden US

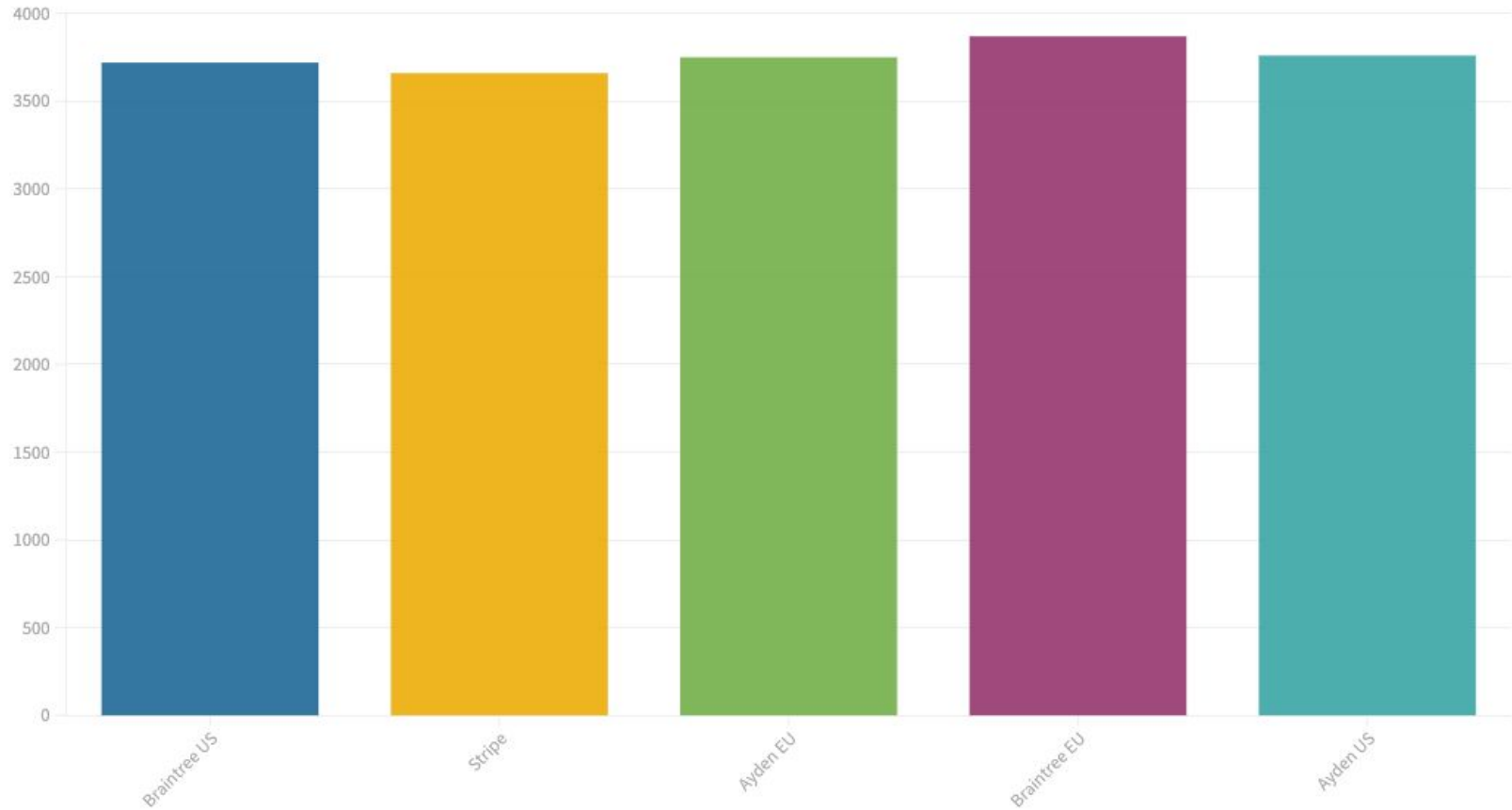


**Which is biggest?**

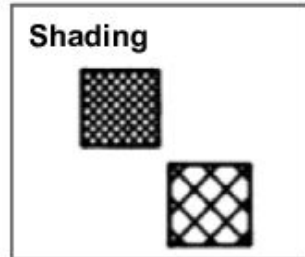
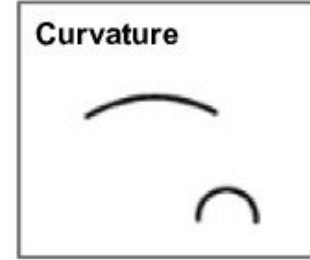
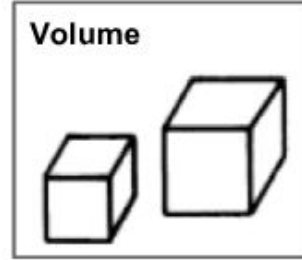
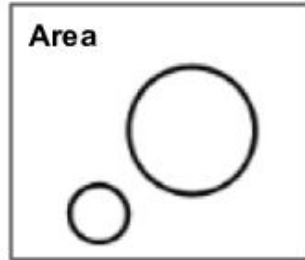
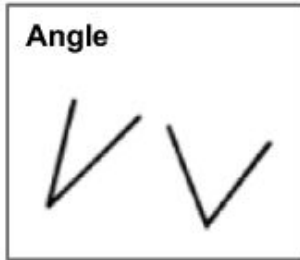
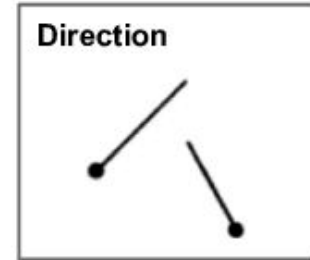
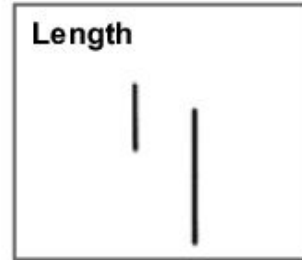
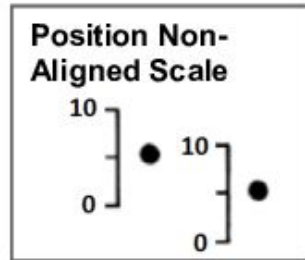
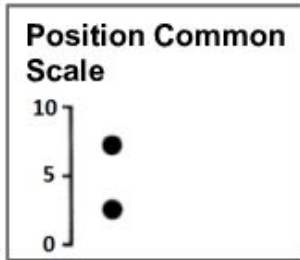


## Volume by payment solution

■ Braintree US ■ Stripe ■ Ayden EU ■ Braintree EU ■ Ayden US

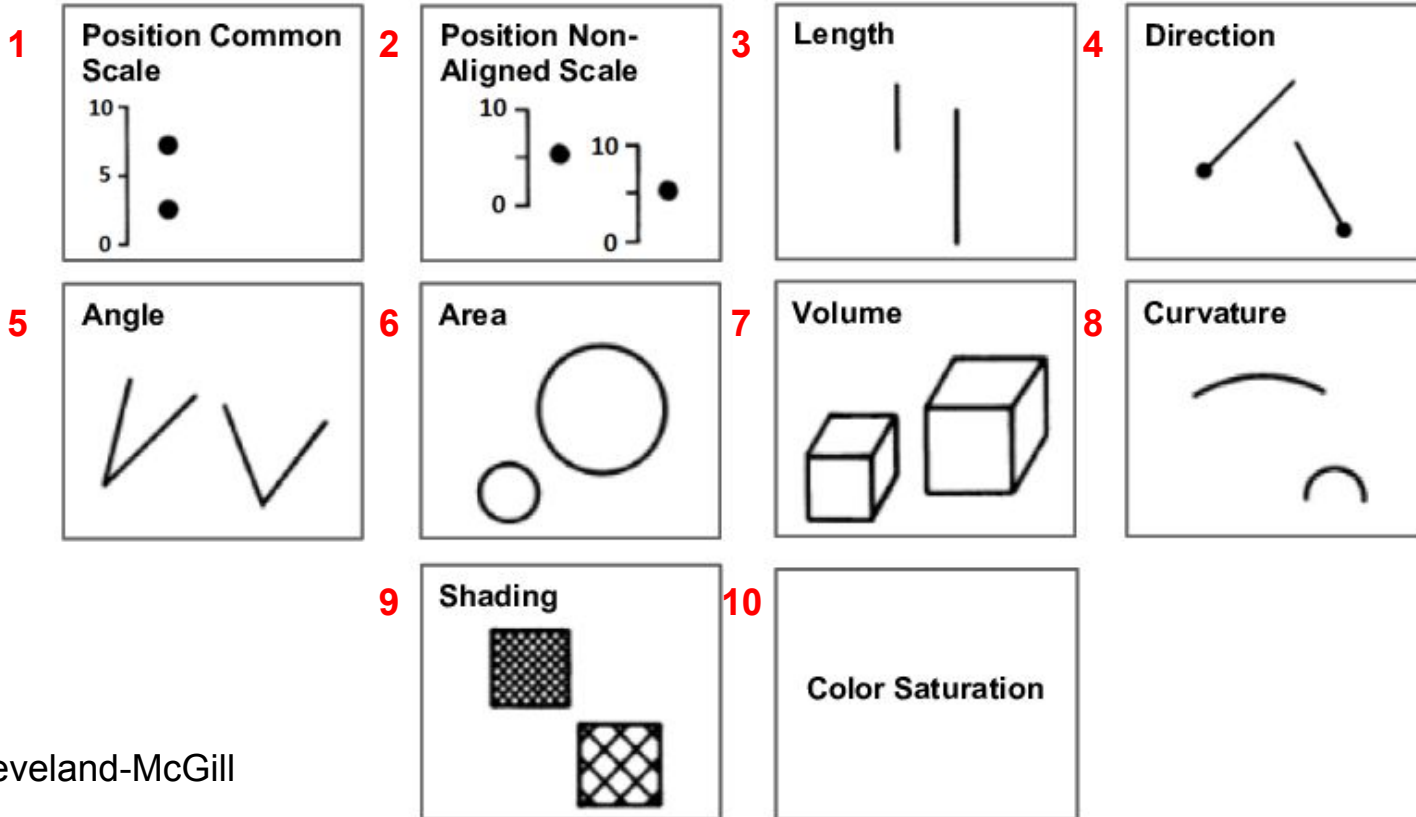


# Graphical perception



Source: Cleveland-McGill

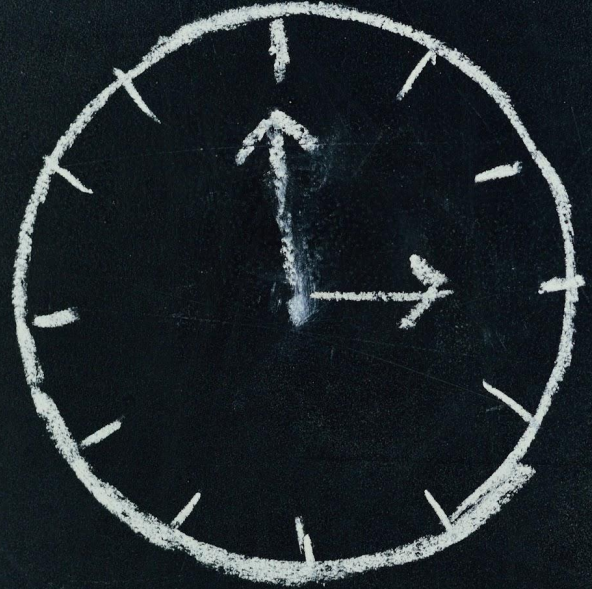
# Graphical perception



Source: Cleveland-McGill

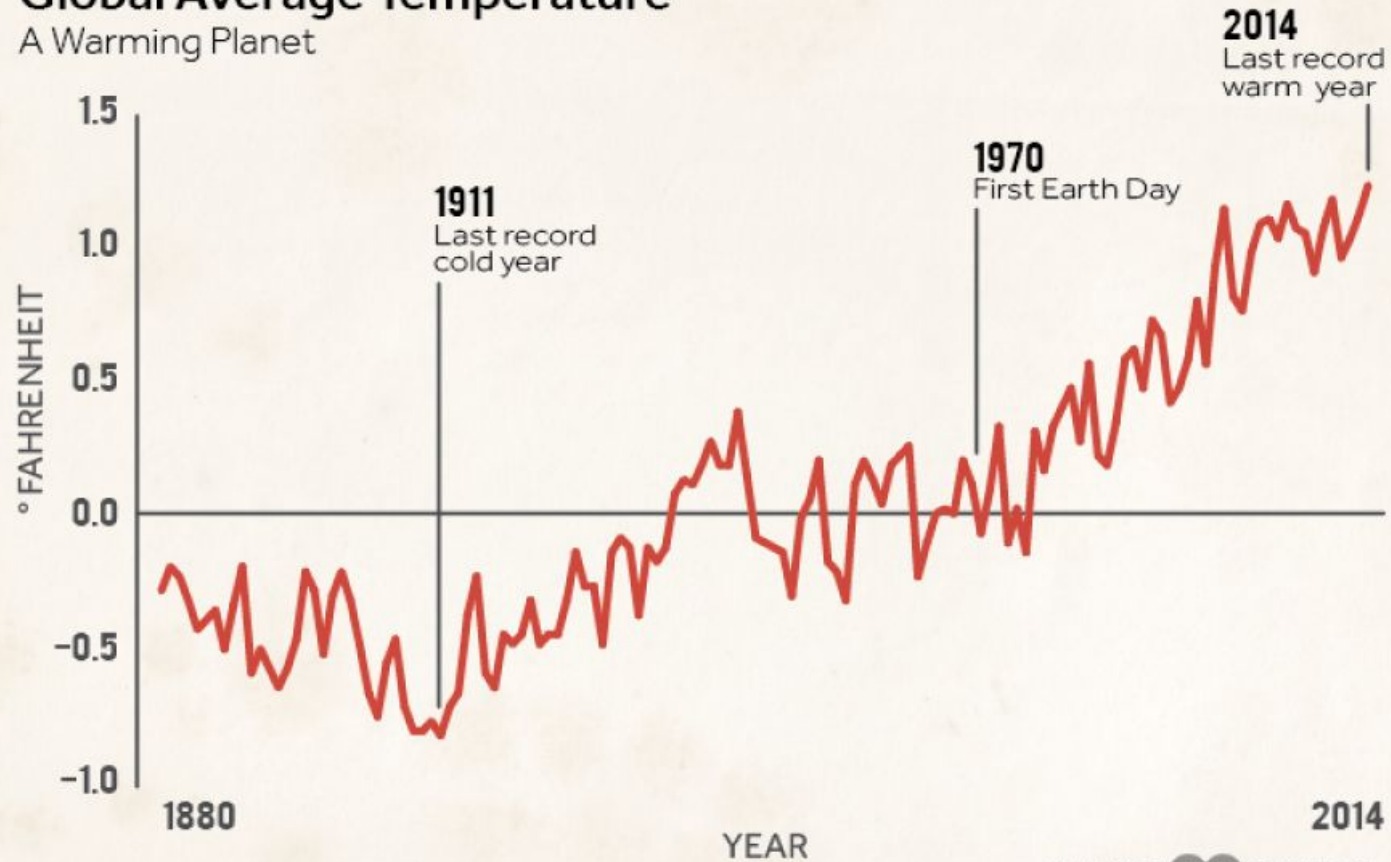
# Data through time

Which graph or chart type would we use?



# Global Average Temperature

A Warming Planet



Data: NOAA National Climatic Data Center

CLIMATE CENTRAL

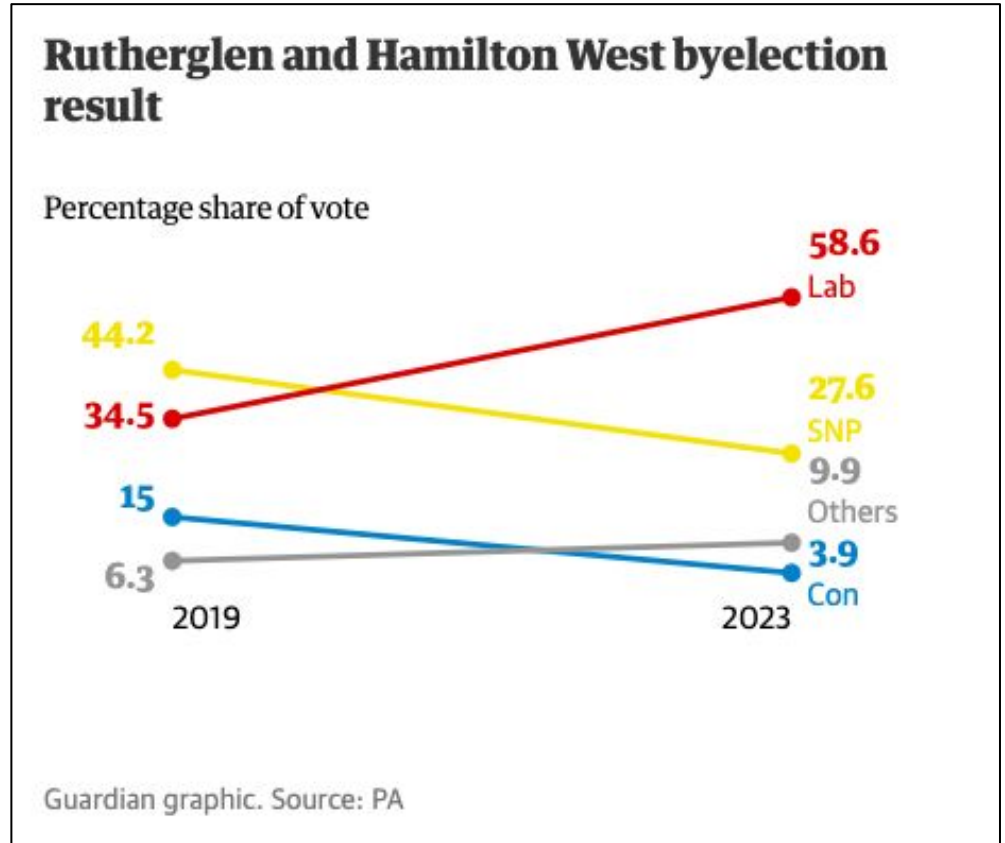
**Line charts:** Trends

**Column charts:**  
Values and  
comparisons  
through time



# Data through time

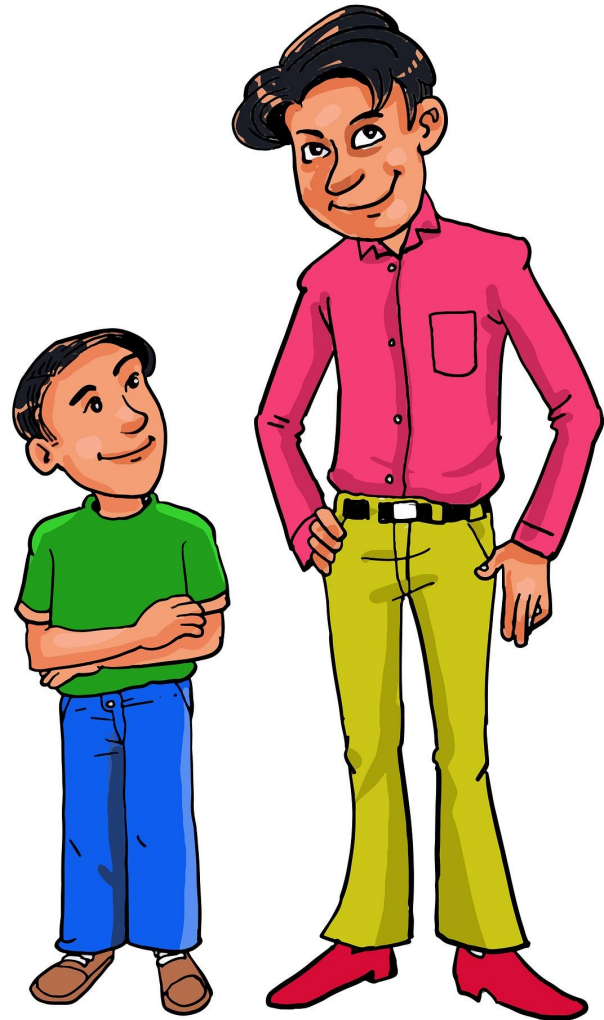
This is particularly useful for sources of data which don't provide continuous data points (eg. surveys).



Slope charts

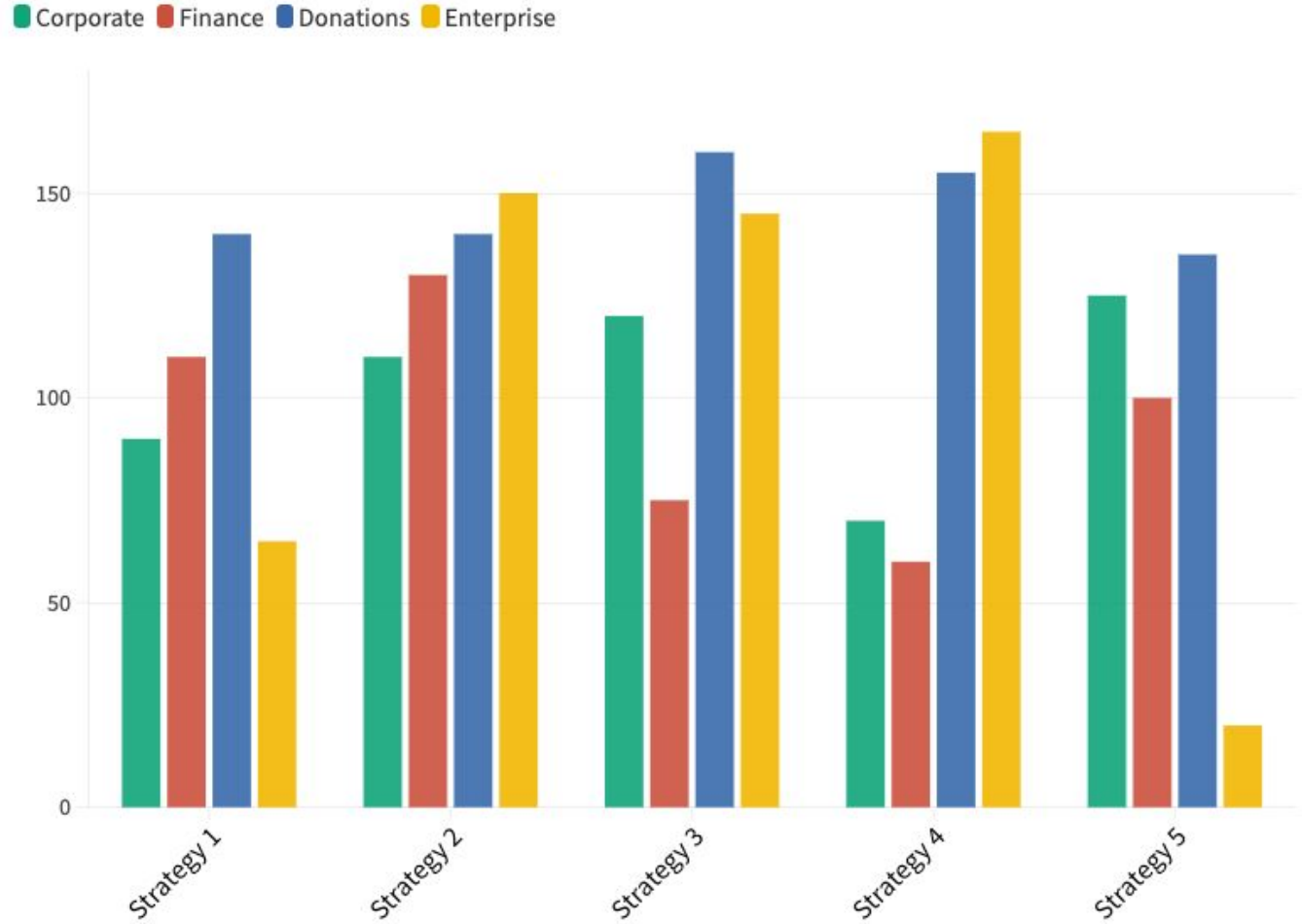
# Comparisons

Which graph or chart type would we use?



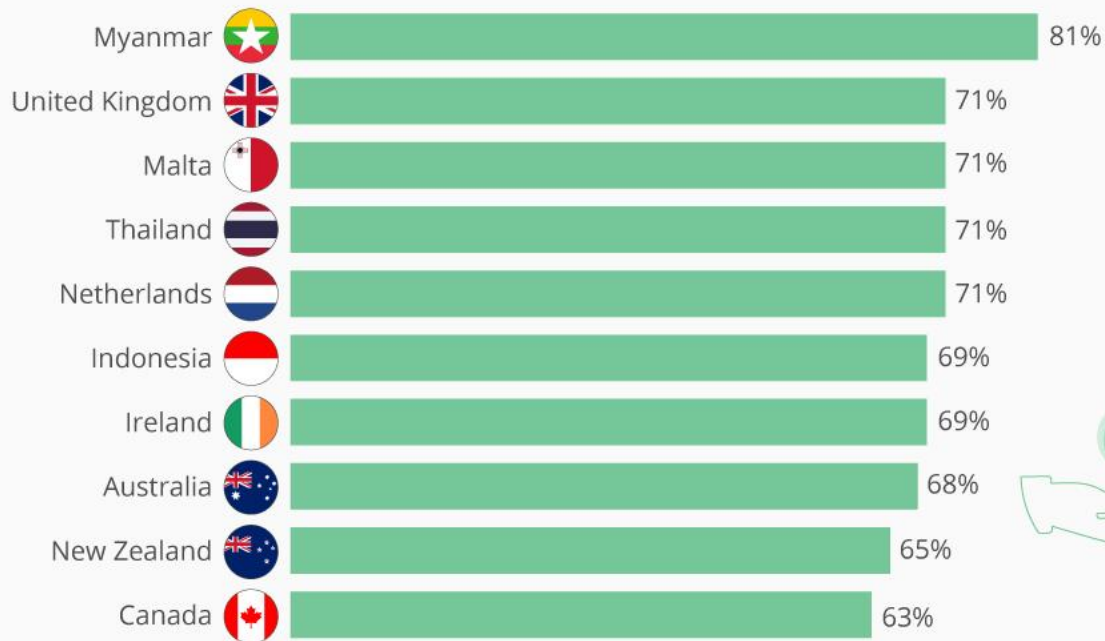


**Column charts:**  
side-by-side  
comparisons



## Where The Most People Donate To Charity

Share of the adult population that donated money to charity in the previous month (2018)



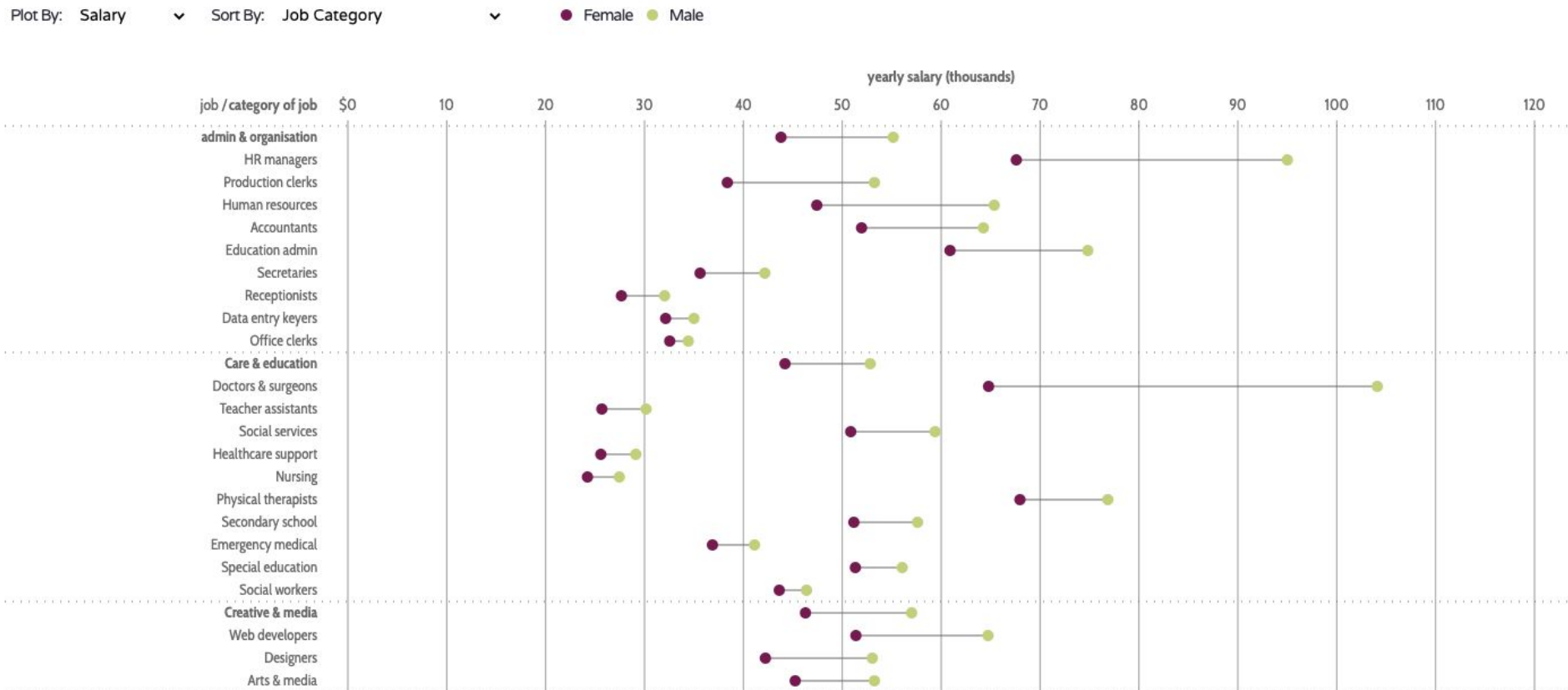
### Bar charts

Ranking data points



@StatistaCharts Source: Charities Aid Foundation

# Dumbbell charts: differences

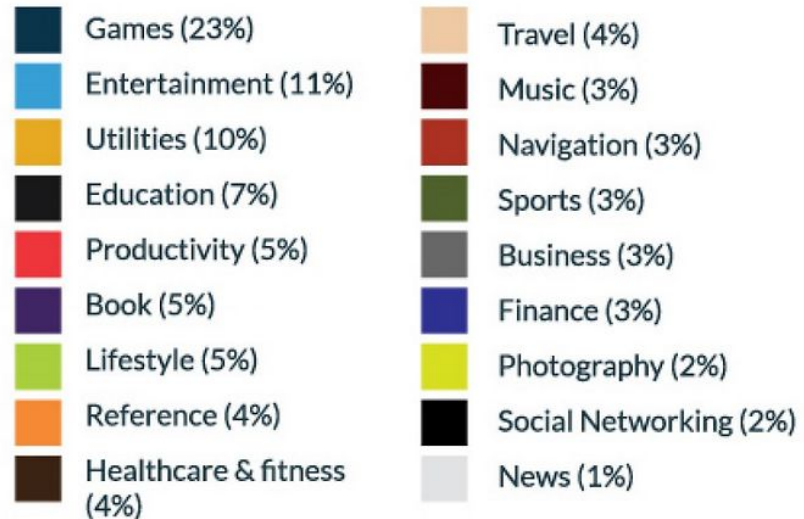


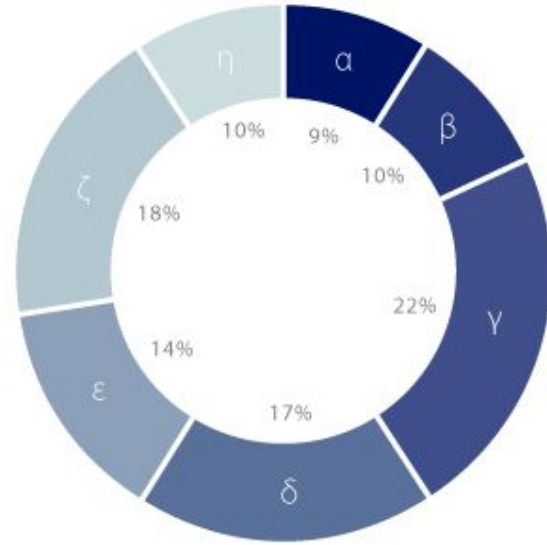
# Composition

Which graph or chart type would we use?



# APP CATEGORY MARKET SHARE FOR ALL DEVICES

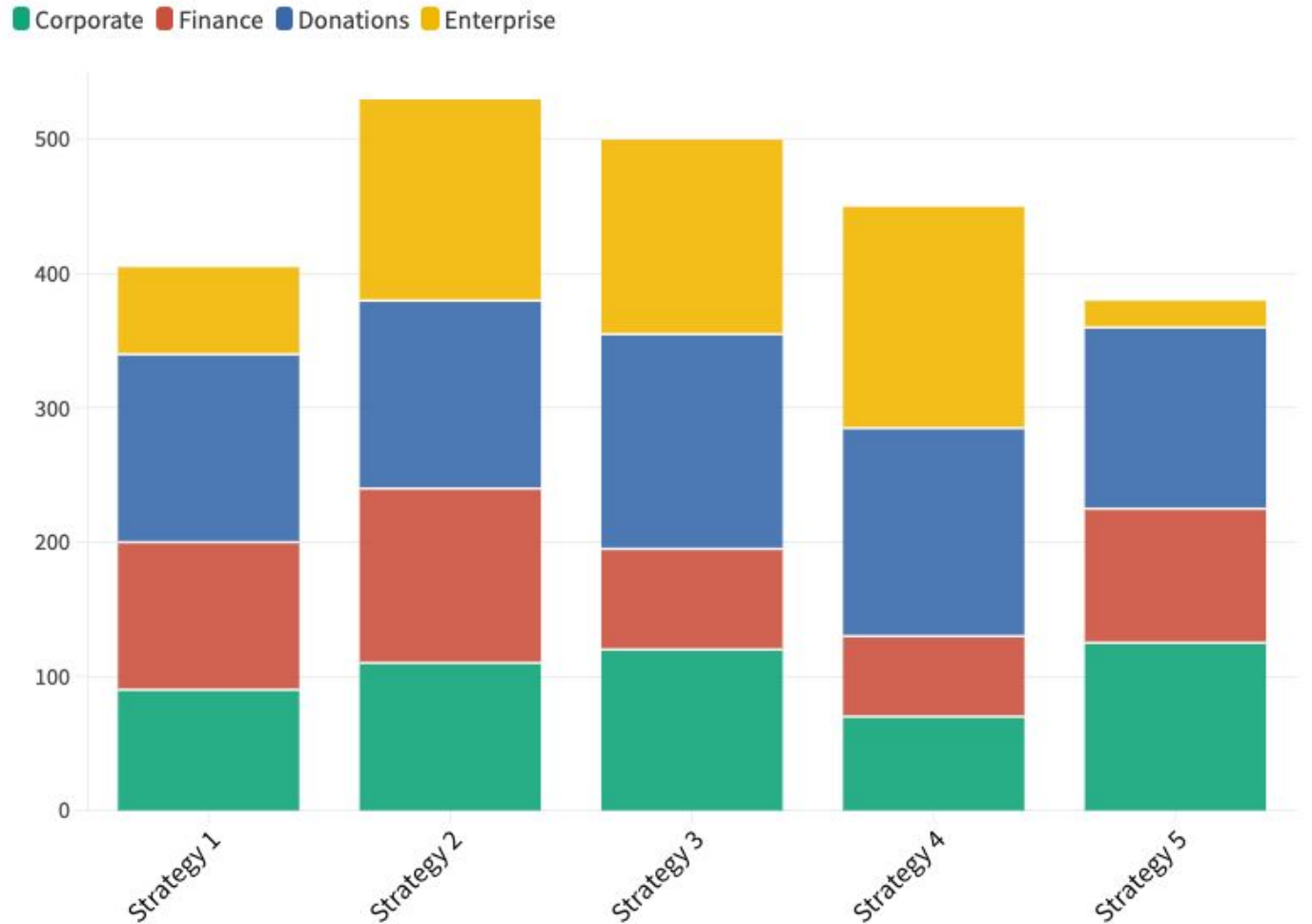




### **Pie charts and donut charts:**

Snapshot in time, less than five categories, one larger data point

**Stacked columns:**  
Composition and  
total values



**Treemaps:**  
Relative sizes,  
hierarchy



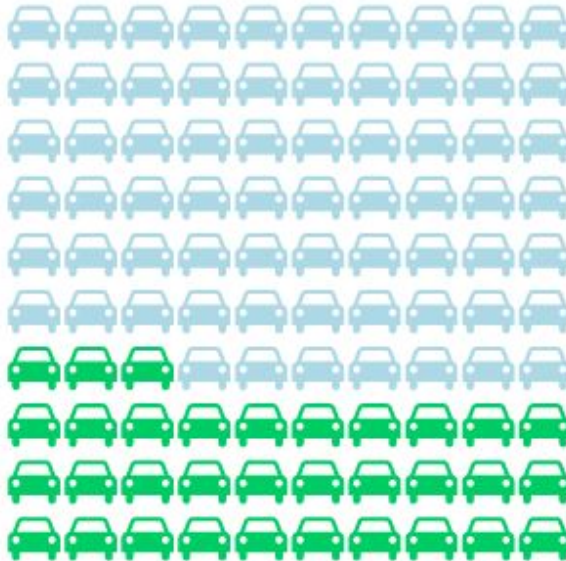


# Waffle charts: Percentages or proportion of total



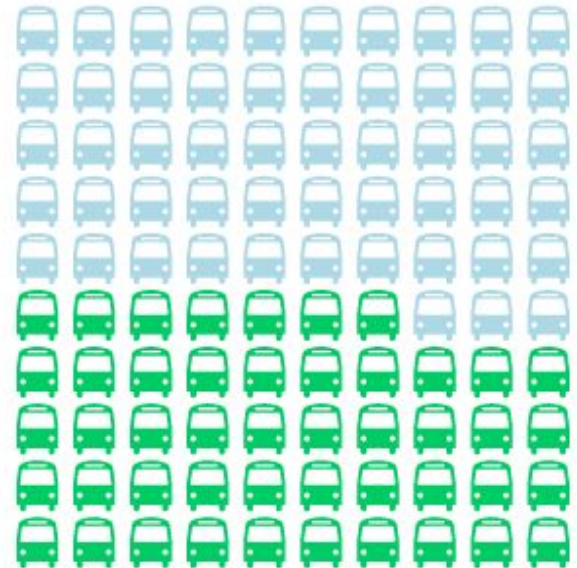
**20%**

Bicycle



**33%**

Car



**47%**

Transit

# NEW NATION TORN APART

Conflict in the world's youngest country has spread across the nation, creating a severe humanitarian crisis.



As of August 2014. Source: UN OCHA <http://www.unocha.org/south-sudan>

Maps:  
Geographic  
data

# Icons with numbers

Always make sure these  
have context included (eg.  
comparisons, percentages).



## Chickens

8.9 billion factory-farmed (99.97%)

3.6 million not factory-farmed



## Farmed fish

520 million factory-farmed (100%)

0 not factory-farmed



## Egg-laying hens

362 million factory-farmed (98%)

7 million not factory-farmed



## Turkeys

285 million factory-farmed (99.9%)

430,000 not factory-farmed

Exercise:

## Choosing graphs and charts

Open the data sets in the Exercise 2 tab of the Google Sheet.

Think about which type of graph or chart will display the data best.

In **Flourish**, create a chart, and copy and paste the data across.

When you're happy with the result, you can download the chart as an image, and then upload it to **Padlet**.

# Let's take a break

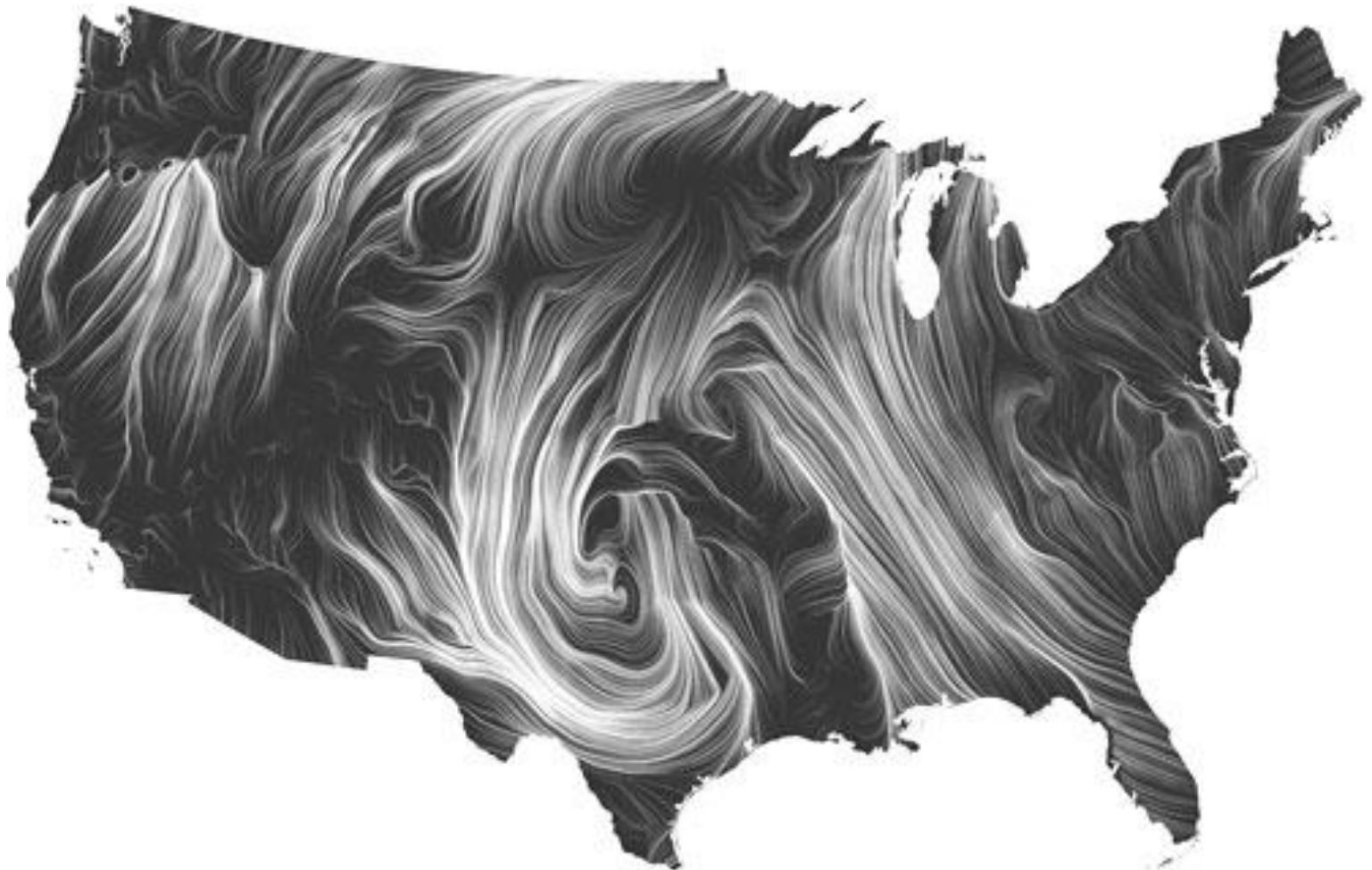


(No need to leave the meeting!)

# **Designing for humans**

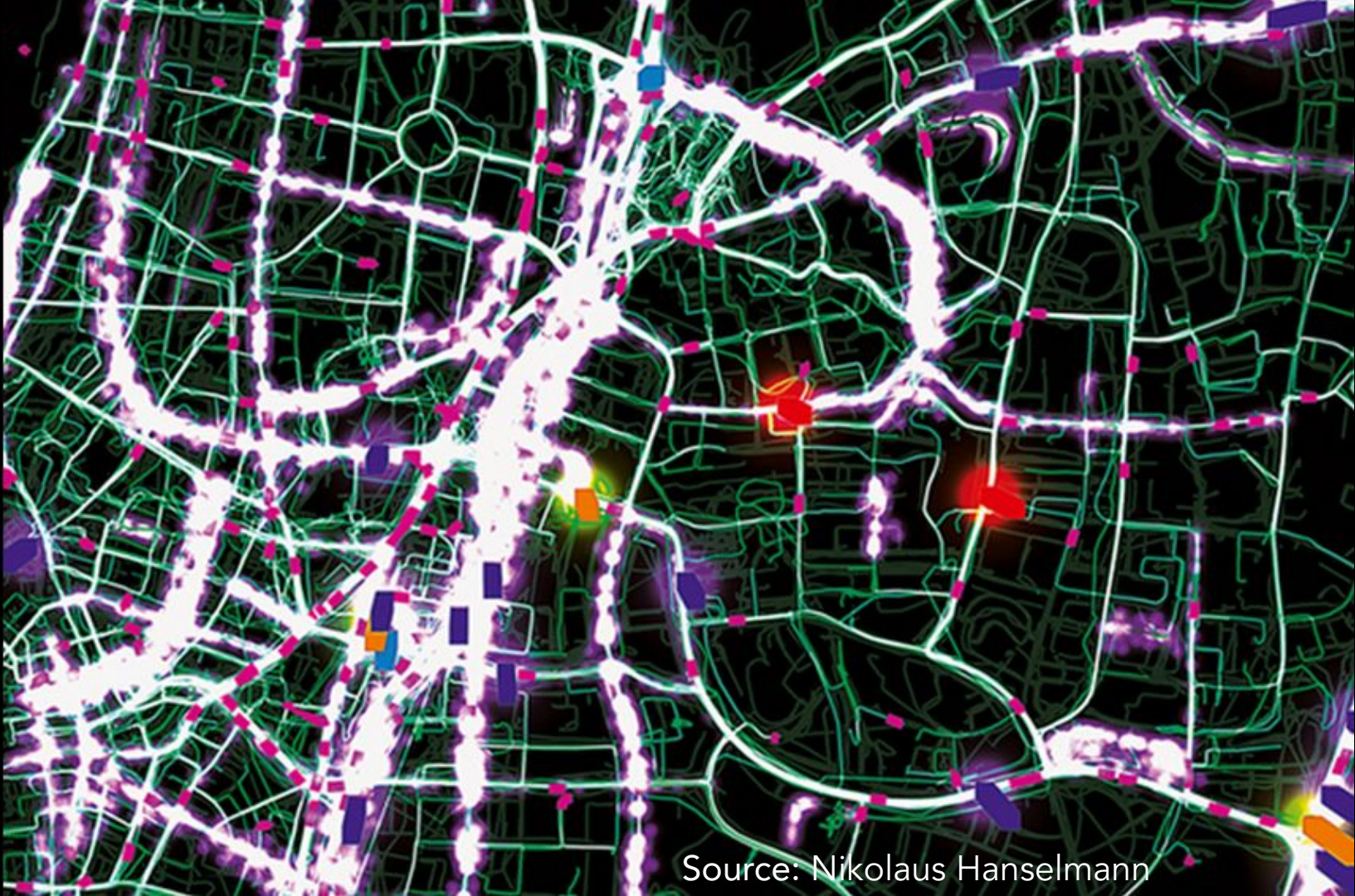
*“Simplify, then exaggerate”*

**Geoffrey Crowther, editor, The Economist**



Source: Fernanda Viégas and Martin Wattenberg





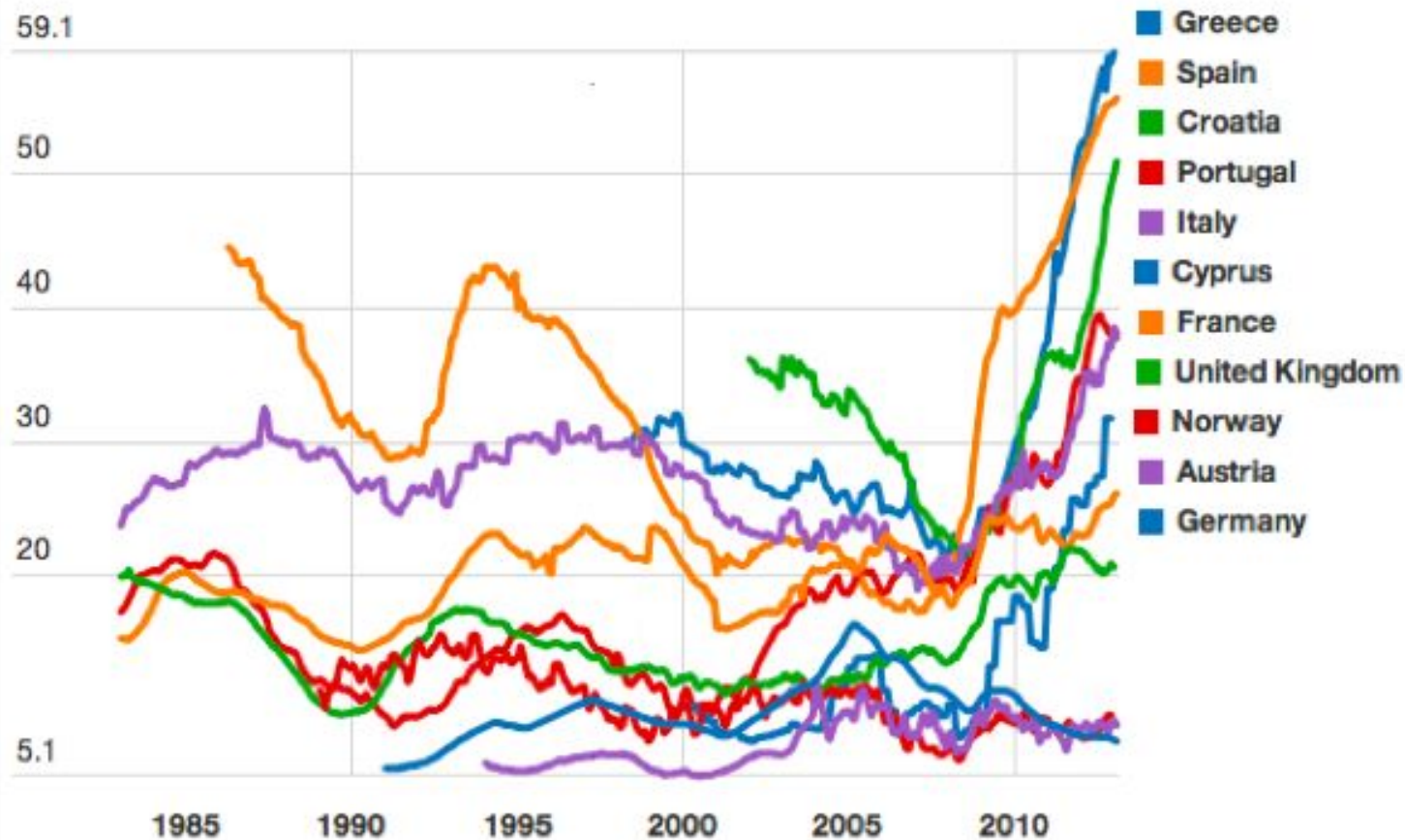
Source: Nikolaus Hanselmann

6 2 5 3 9 8 8 2 7 0 5 0 3 6 7 5 9 6 2 3  
8 9 1 4 7 4 1 5 6 6 6 2 0 0 3 4 5 8 0 0  
9 5 3 4 1 2 2 3 2 4 6 0 5 4 4 6 8 1 2 4  
1 7 9 3 6 5 4 8 8 7 4 3 4 2 8 9 7 9 2 2  
0 4 0 8 8 8 3 9 4 1 1 2 7 9 0 0 4 4 2 7

**How many threes?**

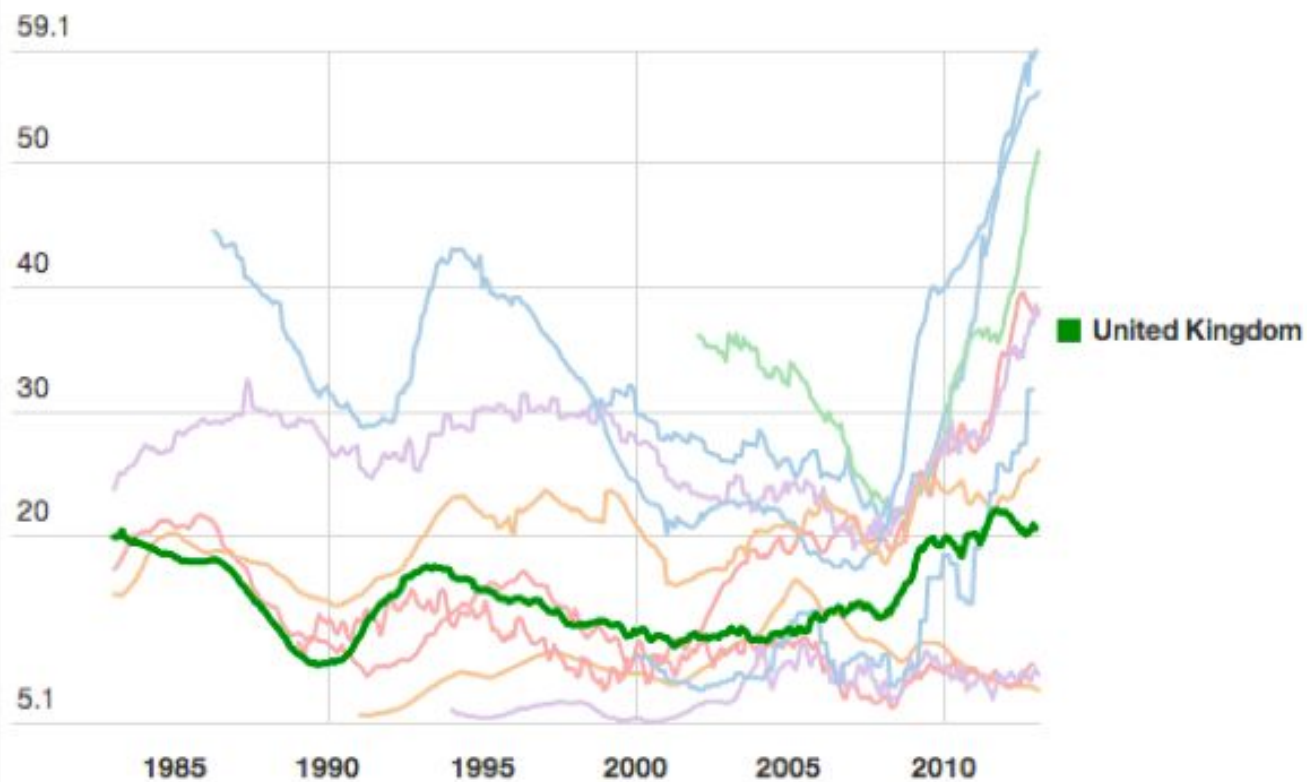
6 2 5 3 9 8 8 2 7 0 5 0 3 6 7 5 9 6 2 3  
8 9 1 4 7 4 1 5 6 6 6 2 0 0 3 4 5 8 0 0  
9 5 3 4 1 2 2 3 2 4 6 0 5 4 4 6 8 1 2 4  
1 7 9 3 6 5 4 8 8 7 4 3 4 2 8 9 7 9 2 2  
0 4 0 8 8 8 3 9 4 1 1 2 7 9 0 0 4 4 2 7

**Now how many threes?**





# Unemployment in Europe



# Use storytelling text

## UK has the highest excess death rate among countries producing comparable data

Measures of excess mortality\* by country, during Covid outbreaks

Total excess deaths per million people



Total excess deaths



Total excess deaths relative to historical average for same dates



\*Number of deaths observed in excess of historical average for same time of year. Numbers may not reflect latest situation due to lags in registration. Source: FT analysis of mortality data. Data updated May 27. Data is shown for all countries where all-cause mortality figures have been published

# Use of colours

RED	PINK	PURPLE	NAVY	GREEN	BLUE	ORANGE
<p>MEANS:</p> <p>passionate <b>active</b> EXCITING bold energy youthful <b>physical</b> PIONEERING leader willpower confidence ambition <b>POWER</b></p> <p>BRANDS:</p> <p><i>Kellogg's</i> <i>Virgin</i> <b>LEGO</b> <i>Coca-Cola</i> <b>Nintendo</b> Red Bull </p>	<p>MEANS:</p> <p>love <b>calm</b> <b>respect</b> <b>WARMTH</b> longterm <b>feminine</b> intuitive <b>care</b> assertive <b>sensitive</b> NURTURE <b>possibilities</b> UNCONDITIONAL</p> <p>BRANDS:</p> <p><b>BBC</b> <i>three</i> <i>Barbie</i> <b>COSMOPOLITAN</b> VICTORIA'S SECRET</p>	<p>MEANS:</p> <p><b>DEEP</b> creativity unconventional original <b>stimulation</b> individual WEALTHmodesty <b>compassion</b> DISTINGUISHED respectable <b>fantasy</b></p> <p>BRANDS:</p> <p><i>Cadbury</i> <b>YAHOO!</b> <i>hallmark</i> <i>Milka</i> <b>Zoopla.co.uk</b> your advantage is property</p>	<p>MEANS:</p> <p>trust order <b>LOYALTY</b> <b>sincere</b> authority communication confidence <b>PEACE</b> energy control responsible <b>success</b> CALM masculine</p> <p>BRANDS:</p> <p><b>f</b>  <b>Reebok</b>  <b>t</b> <b>GAP</b></p>	<p>MEANS:</p> <p>BALANCE <b>growth</b> <b>restore</b> sanctuary EQUILIBRIUM positivityNATURE <b>generous</b> clarity prosperity good judgement safetystable</p> <p>BRANDS:</p> <p> bp  <b>tic tac</b> LACOSTE </p>	<p>MEANS:</p> <p><b>spirit</b> perspective <b>CONTENT</b> control <b>rescue</b> determination self-sufficient modern goals aware <b>purpose</b> <b>OPEN</b> ambition</p> <p>BRANDS:</p> <p>  <b>skype</b>  </p>	<p>MEANS:</p> <p>INSTINCT <b>WARMTH</b> gut reaction optimistic spontaneity <b>extrovert</b> social <small>NEW DEAL</small> <b>FREEDOM</b> impulse motivation</p> <p>BRANDS:</p> <p>    <b>bitly</b>  </p>

# Position

- Generally, higher up means more important.
- Place the most important info at the top.
- Some people may skip to the end.
- Place your call to action at the bottom.





And you will read this last

**You will read  
this first**

**Size**

And then you will read this

Then this one

# **Main story (the point of the infographic)**

**Visual one**

**Visual 2**

**Visual 3**

**Visual 4**

**Visual 5**

# Images



**Photographer Heather Hazzan**  
American Academy of Pediatrics SELF magazine



**Photograph: VCG/VCG via Getty Images**

# Qualitative data

- Thematic coding.
- Quotes.
- Case studies.
- Illustrations and infographics.



Source: Gapminder, United Nations Population Division



## Guns and gun safety

What Texans said in a [June 2017](#) University of Texas/Texas Tribune Poll:

### Gun control laws should be ...



Numbers may not add up to 100 due to rounding. Margin of error  $\pm 2.83$  percentage points.



### What Democrats think

*“We strongly support enacting sensible gun laws to curtail the availability of weapons with extended ammunition magazines, including rapid-fire, magazine-fed, military-style assault weapons.”*

[Read the full Democratic platform](#)



### What Republicans think

*“We support constitutional carry legislation through any legislative means so law-abiding citizens may carry any legally owned guns openly or concealed, while maintaining the option of a permit for reciprocity purposes only.”*

[Read the full Republican platform](#)

Exercise:

## Adding text and styling

Open the data set in the Exercise 3 tab of the Google Sheet.

In **Flourish**, create a bar chart or column chart and copy the data into it.

Make changes to the colours and text to tell more of a story with the chart.

When you're happy with the result, you can download the chart as an image, and then upload it to **Padlet**.

# **Tools and resources**

# Data Visualisation Catalogue

Search by Function

View by List



Arc Diagram



Area Graph



Bar Chart



Box & Whisker Plot



Brainstorm



Bubble Chart



Bubble Map



Bullet Graph



Calendar



Candlestick Chart



Chord Diagram



Choropleth Map



Circle Packing



Connection Map



Density Plot



Donut Chart



Dot Map



Dot Matrix Chart



## Deviation

Emphasize relations (or  $\sigma$ ) from a fixed reference point. Typically the reference point is zero but it can also be a target or a long-term average. Can also be used to show asymmetry (asymmetrical deviation).

**Example FT uses**  
Trade spreads/ROIC, climate change

### Diverging bar

A simple standard bar chart that can handle both negative and positive magnitude values.

### Diverging stacked bar

Perfect for presenting survey results which involve asymmetry (eg. disapproves/very agree).

### Spine

Spine a single value like two contrasting components (eg. megaprojects).

### Bar/line/area/line

The shaded areas of these charts allows a balance to be drawn either against a baseline or between two series.

## Correlation

Show the relationship between two or more variables. Be careful that unless points are ordered, their meaning will obscure the relationships you show (then you need to use axes to the effect).

**Example FT uses**  
Inflation and unemployment, income and life expectancy

### Scatterplot

The standard way to show the relationship between two continuous variables, each of which has its own axis.

### Column + line/line

A good way of showing the relationship between an amount (column) and a rate (line).

### Connected scatterplot

Usually used to show the relationship between 2 variables (eg. change/over time).

### Bubble

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

### XY heatmap

A good way of showing how patterns between 2 categories of data, like change/over time or very between categories.

## Ranking

Use where an item's position is ordered for a more important than its absolute or relative value. Don't be afraid to highlight the points of interest.

**Example FT uses**  
Risks, exposures, largest risks, industry sector risks

### Ordered bar

Standard bar charts display the rank of values. Much more useful when sorted into order.

### Ordered column

See above.

### Ordered proportional symbol

Use when there are big variations between values and/or when the differences between data is not as important.

### Dot strip plot

Dots placed in order on a strip as in a spread effect. Good for showing individual values and/or when the differences between data is not as important.

### Slope

Perfect for showing how levels have changed over time or very between categories.

### Lollipop

Lollipop shows more information in the data than standard bar/column and can also show rank and value effectively.

### Range

Effective for showing changes in multiple categories. For example, risk levels, risk scores/ratings, consider grouping first using color.

## Distribution

Show values in a dataset and how often they occur. The shape (or skew) of a distribution can be a meaningful way of highlighting the degree of uniformity or equality in the data.

**Example FT uses**  
Income distribution, population, geographical distribution, spending frequency

### Histogram

The standard way to show a distribution - keep the bins narrow, consider markers to highlight the shape of the data.

### Dot plot

A simple way of showing the change or range (but usually used with only one series of multiple categories).

### Dot strip plot

Good for showing individual values and/or when the differences between data is not as important.

### Barcode plot

Like dot strip plots, good for displaying data on a strip as in a spread effect. They work best when highlighting individual values.

### Barplot

Summarize multiple distributions in a good way of showing the median, central and range of the data.

### Value plot

Similar to a bar chart but more effective with large variations between data that cannot be represented with simple shapes.

### Population pyramid

A standard way of comparing the age and sex breakdown of a population. Can be used to show effects, back to back histograms.

### Cumulative curve

A good way of showing the shape of a distribution in a way that is easy to compare. Frequency, a suit is usually a measure.

### Frequency polygons

For displaying multiple distributions of data. Like a regular line chart but limited to a single frequency of 1 or n.

### Barocans

Use to emphasize individual points in a distribution. Points can be sized to represent additional variables. Best with multiple-sized datasets.

## Change over Time

Give emphasis to changing trends. These can be short (one-day) movements or extended (years) movements. Showing decades or centuries. Choosing the correct time period is important to provide valuable context for the reader.

**Example FT uses**  
Share price movements, economic time series, several changes in a market

### Line

The standard way to show a change over time series. If data are irregular, consider markers to represent data points.

### Column

Columns work well for showing change over time (but usually used with only one series of multiple categories).

### Column + Box timeline

A good way of showing the relationship between two time series (eg. Dow Jones and rate (Dow)).

### Slope

Good for showing changing data as long as the data are too irregular (eg. 2 or 3 points without missing a key part of the story).

### Area chart

Use with care - these can be good at showing change to trend, but poorly change in components can be very difficult.

### Candlestick

Usually focused on day-to-day activity, these charts show opening/closing and high/low points of each day.

### Fun chart (projection)

Use to show the trend in future projections - usually the median but can be used to show a range of projections.

### Connected scatterplot

A good way of showing changes in data over time where the variable is measured frequently, a suit is usually a measure.

### Calendar heatmap

A great way of showing temporal patterns (like weekly mortality) - of the response of a quantity to time.

### Priority timeline

Good when data are ordered - again, the elements of the story in the data.

### Circle timeline

## Magnitude

Show size comparisons. These can be relative (not being able to see larger/smaller) or absolute (hard to see the differences). Usually these show a 'counted' number (for example, number of people) rather than a calculated value (for example, interest rate).

**Example FT uses**  
Company production, market capitalization, volumes in general

### Column

The standard way to show a change over time series. If data are irregular, consider markers to represent data points.

### Bar

See above. Good when the data are not too irregular (eg. long history names).

### Paired column

As per standard column but allows for multiple series. Can be used to show a relationship between two series (eg. Dow Jones and rate (Dow)).

### Paired bar

See above.

### Multi-block

A good way of showing the relationship between two series (eg. Dow Jones and rate (Dow)).

### Proportional symbol

Use when there are big variations between values and/or when the differences between data is not as important.

### Infoplex (infographic)

Excellent solution to use only with which the median but can be used to show a range of projections.

### Lollipop

Lollipop charts show more information in the data than standard bar/column and can also show rank and value effectively.

### Radar

A space-efficient way of showing multiple variables - but make sure they are organized in a way that makes sense to readers.

### Polar coordinates

An extension to radar charts - again, the elements of the story in the data.

### Roller

## Part-to-whole

Show how a single entity can be broken down into its component elements. If the reader is interested in a single part of the components, consider a 'counted' number (for example, number of people) rather than a calculated value (for example, interest rate).

**Example FT uses**  
Fixed budgets, company structures, national election results

### Stacked column/bar

A simple way of showing part-to-whole relationships but can be difficult to read when there are a few components.

### Heatmap

A good way of showing the size and range of relationships in data. It will be a bit more complicated.

### Pie

A common way of showing part-to-whole data, but be aware that it is difficult to accurately compare the size of the segments.

### Donut

Similar to a pie chart - but the centre can be a good way of showing a specific value (eg. total).

### Treemap

Use for hierarchical part-to-whole relationships. Can be difficult to read when there are many small segments.

### Voronoi

A way of showing part-to-whole relationships. Can be difficult to read when there are many small segments.

### Arc

A heuristic, often used for visualizing part-to-whole relationships. Can be difficult to read when there are many small segments.

### Gridplot

Good for showing part-to-whole relationships. Can be difficult to read when there are many small segments.

### Venn

Generally only used for schematic representations.

### Waterfall

Can be useful for showing part-to-whole relationships where the components are negative.

## Spatial

Aside from maps only used when precise locations or geographical patterns in data are most important to the reader than anything else.

**Example FT uses**  
Population density, natural resource locations, natural disaster risk/pattern, national election results

### Basic choropleth (rainfall)

The standard approach for showing data on a map - should always be used rather than total and not a variable base projection.

### Proportional symbol (country/region)

Use for total rather than rates - be very clear that the proportional symbol will be a bit more complicated.

### Flow map

For showing relationships between movement across a map.

### Center map

For showing areas of equal value on a map. Can be used to show relationships between values.

### Equalized choropleth

Concerning such as on a map to a regular and equal value. Can be used to show relationships between values.

### Isolated choropleth

Concerning such as on a map to a regular and equal value. Can be used to show relationships between values.

### Dot density

Used to show the location of individual entities/locations - not sure if this is any particular the reader should use.

### Heat map

Grid based data values represented. They work primarily color scale but not intended to be an astronomical unit.

## Flow

Show the reader values or intensity of movement between two or more states or conditions. These might be logical sequences or geographical locations.

**Example FT uses**  
Movement of funds, trade, risks, liquidity, information, regulatory graphs

### Sankey

Shows changes in flows from one condition to at least one other, good for tracing the movement of complex processes.

### Waterfall

Designed to show the sequencing of data in a process, typically budgets. Can include +/- components.

### Chord

A complex but powerful diagram which can illustrate 2-way flows (not just where 2 is a matrix).

### Network

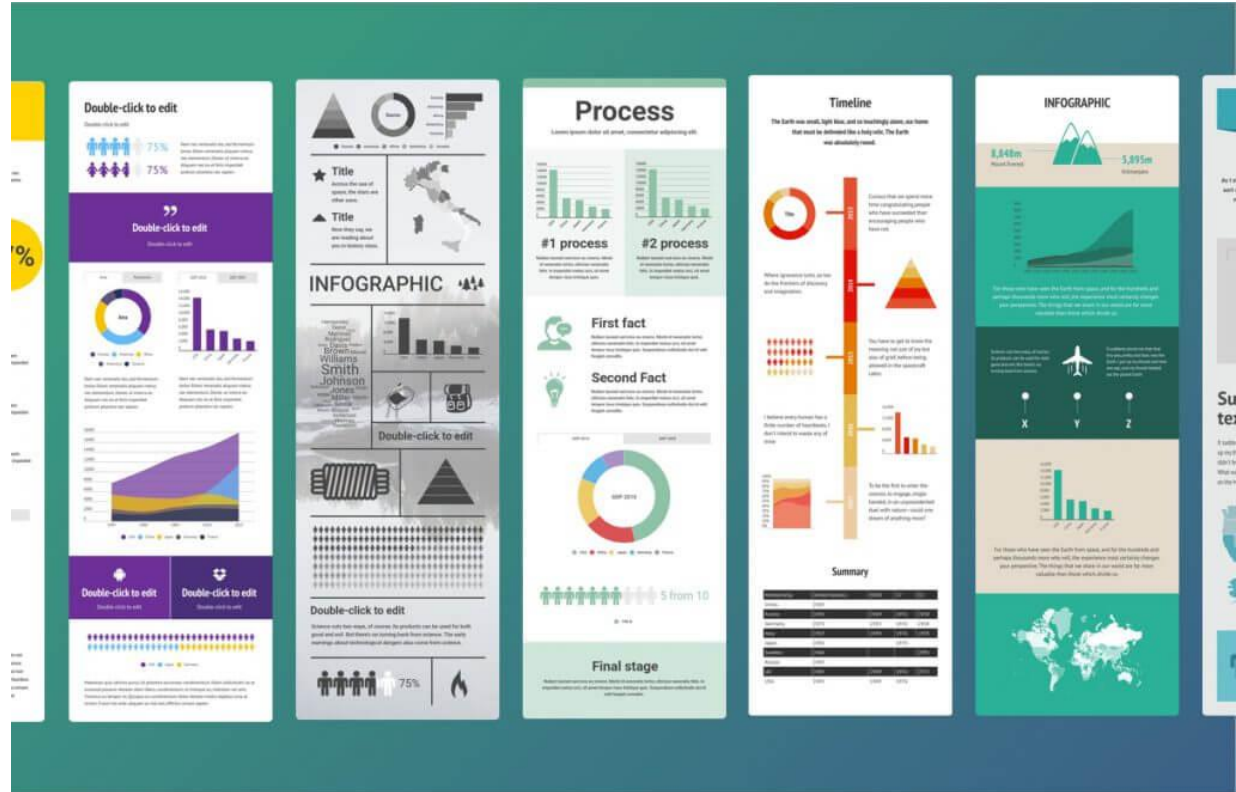
Used for showing the strength and relationships of relationships of varying types.

# Visual Vocabulary

## Financial Times Visual Vocabulary

# Creating infographics

- Infogram
- Venngage
- Piktochart
- Canva
- Infographia



# Images, icons and pictograms

- Pexels
- Pixabay
- Unsplash
- Flaticon
- Noun Project



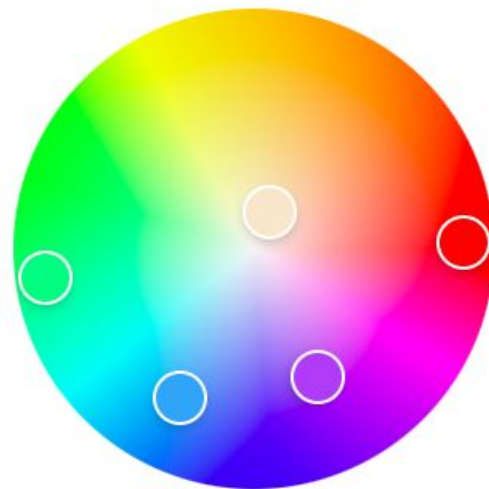
Color Wheel   Extract Theme   Extract Gradient   Accessibility Tools

Tools

Color Blind Safe  ?

Potential Color Conflict ?

No conflicts found. Swatches are color blind safe.



A

B

C

D

E

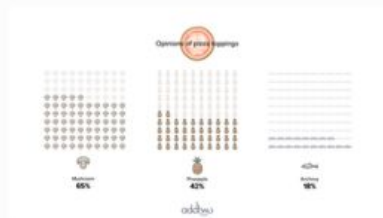


Color Mode

RGB

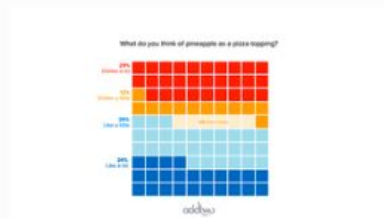
# HOW DO I MAKE IT IN POWERPOINT?

## GUIDES TO DOING INTERESTING THINGS WITH THE POWERPOINT CHARTING ENGINE



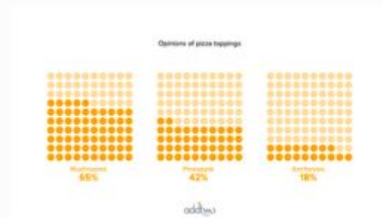
### WAFFLE CHARTS WITH ICONS

[Read More →](#)



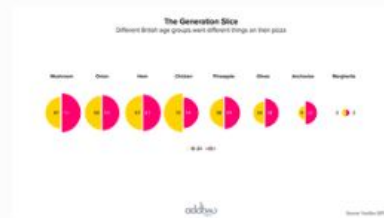
### WAFFLE CHARTS (MULTIPLE SERIES)

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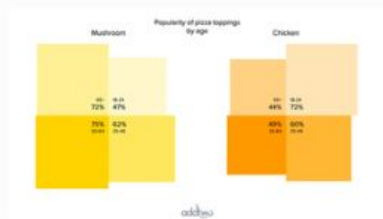
### WAFFLE CHARTS (SINGLE SERIES)

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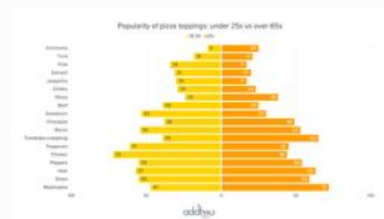
### SPLIT CIRCLES

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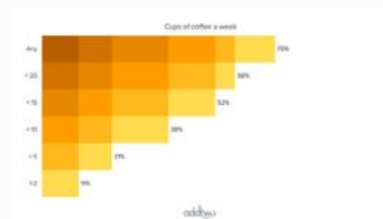
### QUADRANTS

[Read More →](#)



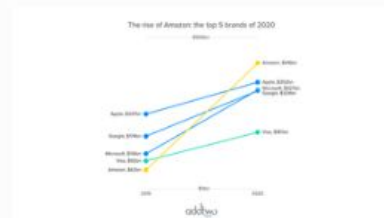
### PYRAMID CHART

[Read More →](#)



### PROPORTIONAL PYRAMIDS

[Read More →](#)



### SLOPE CHARTS

[Read More →](#)

[adtdigital.com/powerpoint-tutorials](https://adtdigital.com/powerpoint-tutorials)

**Summing up**

# Key points to remember

- Being selective about what you choose to highlight.
- Identify a clear and actionable story.
- Choosing simple charts for communication.
- Apply simple design tricks to focus on key points.

 fire plus algebra

**Questions?**

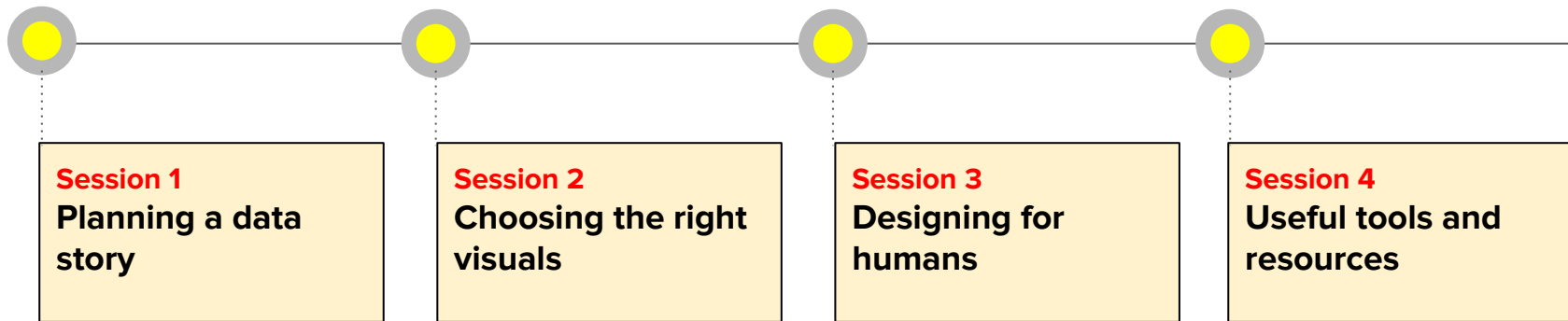
**@alanrutter**

**alan@fireplusalgebra.com**

**fireplusalgebra.com**



# Agenda



“No one ever made a decision  
because of a number.  
They need a story.”

**Daniel Kahneman**  
Author and psychologist