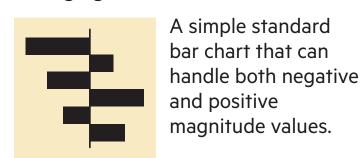
Deviation

Emphasise variations (+/-) 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 sentiment (positive/neutral/negative).

Example FT uses Trade surplus/deficit, climate change

Diverging bar



Diverging stacked bar

Perfect for presenting survey results which involve disagree/neutral/

Spine chart

Splits a single value =components (eg Male/Female).

Surplus/deficit filled line



these charts allows a balance to be shown – either against a baseline or between two series.

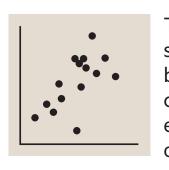
The shaded area of

Correlation

Show the relationship between two or more variables. Be mindful that, unless you tell them otherwise, many readers will assume the relationships you show them to be causal (i.e. one causes the other).

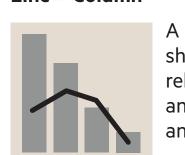
Example FT uses Inflation & unemployment, income & life expectancy

Scatterplot



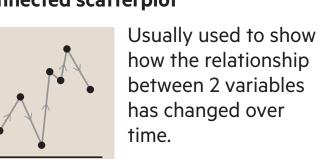
The standard way to show the relationship continuous variables, each of which has its

Line + Column



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

Connected scatterplot





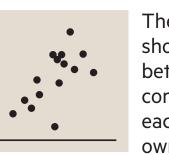
Like a scatterplot, but adds additional detail by sizing the circles according to a third

XY heatmap



the patterns between 2 categories of data, less good at showing fine differences in amounts.

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



display the ranks of values much more easily when sorted into order.

Standard bar charts

Ranking

Wealth, deprivation, league tables,

constituency election results

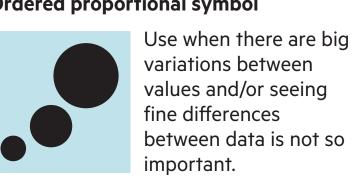
See above.

Ordered column

Example FT uses

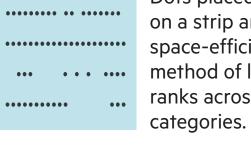
Ordered bar

Ordered proportional symbol



variations between values and/or seeing fine differences between data is not so

Dot strip plot

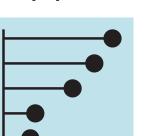


Dots placed in order on a strip are a space-efficient ••• method of laying out ranks across multiple



Perfect for showing how ranks have changed over time or vary between categories.

Lollipop chart

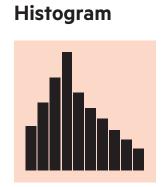


Lollipops draw more attention to the data value than standard bar/column and can also show rank and value effectively.

Distribution

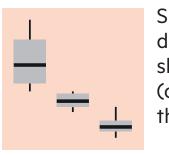
Show values in a dataset and how often they occur. The shape (or 'skew') of a distribution can be a memorable way of highlighting the lack of uniformity or equality in the data.

Example FT uses Income distribution, population (age/sex) distribution



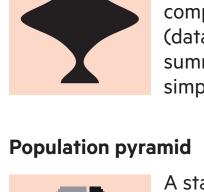
The standard way to show a statistical distribution - keep the gaps between columns small to highlight the 'shape' of the data.

Boxplot



Summarise multiple distributions by showing the median (centre) and range of the data

Violin plot



complex distributions (data that cannot be summarised with simple average).

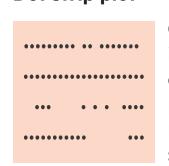
Similar to a box plot

but more effective with



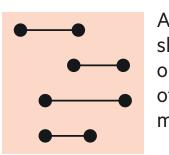
A standard way for showing the age and sex breakdown of a population distribution; effectively, back to back

Dot strip plot



Good for showing individual values in a distribution, can be a problem when too many dots have the same value.

Dot plot



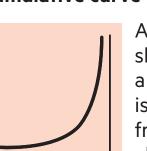
A simple way of showing the change or range (min/max) of data across

Barcode plot



Like dot strip plots, good for displaying all the data in a table,they work best when highlighting individual values.

Cumulative curve



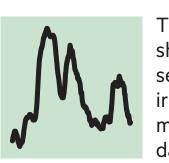
A good way of showing how unequal a distribution is: y axis is always cumulative frequency, x axis is always a measure.

Change over Time

Give emphasis to changing trends. These can be short (intra-day) movements or extended series traversing decades or centuries: Choosing the correct time period is important to provide suitable context for the reader.

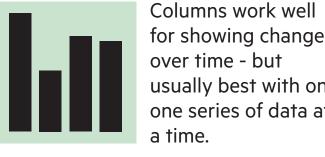
Example FT uses Share price movements, economic time series

Line



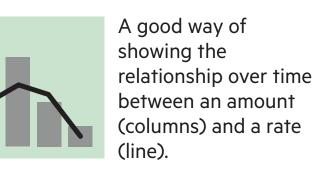
The standard way to show a changing time series. If data are irregular, consider markers to represent

Column

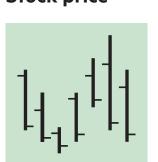


for showing change over time - but usually best with only one series of data at

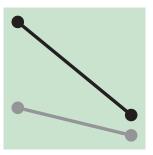
Line + column



Stock price

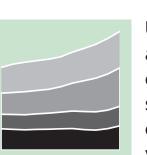


Usually focused on day-to-day activity, these charts show opening/closing and hi/low points of each



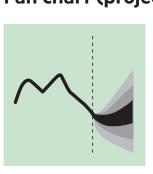
Good for showing changing data as long as the data can be simplified into 2 or 3 points without missing a key part of story.

Area chart



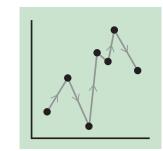
Use with care – these are good at showing changes to total, but seeing change in components can be very difficult.

Fan chart (projections)



Use to show the uncertainty in future projections - usually this grows the further forward to projection.

Connected scatterplot



A good way of showing changing data for two variables whenever there is a relatively clear pattern

Calendar heatmap

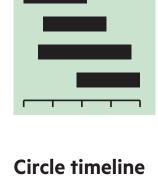


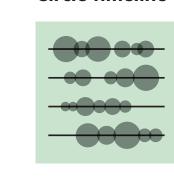
Great when date and

elements of the story

duration are key

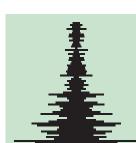
Priestley timeline





varying size across (eg earthquakes by

Seismogram



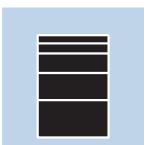
Another alternative to the circle timeline for showing series where there are big variations in the data.

Part-to-whole

Show how a single entity can be broken down into its component elements. If the reader's interest is solely in the size of the components consider a magnitude-type chart instead.

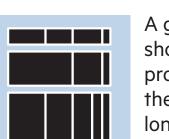
Example FT uses Fiscal budgets, company structures, national election results

Stacked column

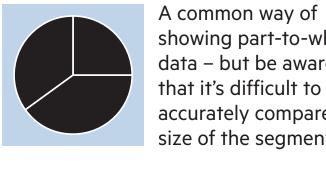


A simple way of showing part-to-whole relationships but can be difficult to read with more than a few

Proportional stacked bar

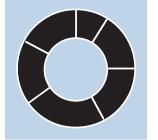


A good way of showing the size and proportion of data at the same time – as long as the data are not too complicated



showing part-to-whole data – but be aware that it's difficult to accurately compare the size of the segments.

Donut



Similar to a pie chart – but the centre can be a good way of making space to include more information about the data (eg. total).

Treemap

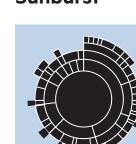


____ Use for hierarchical part-to-whole relationships; can be difficult to read when there are many small

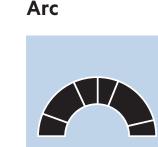


A way of turning points into areas – any point within each area is closer to the central point than any other centroid.

Sunburst



Another way of visualisaing hierarchical part-to-whole relationships. Use sparingly (if at all) for obvious reasons.



A hemicycle, often used for visualising political results in parliaments.

Good for showing %

information, they

and work well in

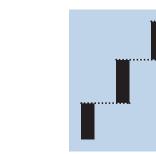
work best when used

on whole numbers



Generally only used for schematic representation.

Waterfall



showing part-to-whole relationships where some of the components are

Can be useful for

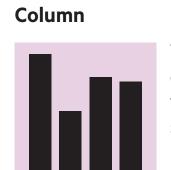
Magnitude

Show size comparisons. These can be relative (just being able to see larger/bigger) or absolute (need to see fine differences). Usually these show a 'counted' number (for example, barrels, dollars or people) rather than

Example FT uses Commodity production, market

a calculated rate or per cent.

capitalisation



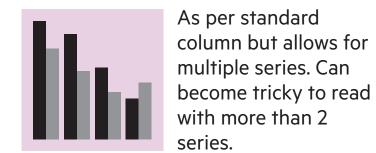
The standard way to compare the size of things. Must always

Bar



See above. Good when the data are not time series and labels have long category

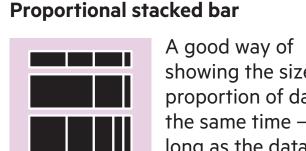
Paired column



Paired bar

As per standard

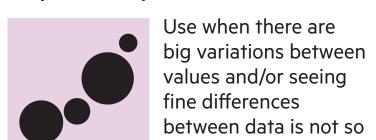
column but allows for



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

Use when there are

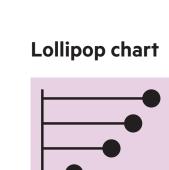
Proportional symbol



fine differences between data is not so Isotype (pictogram) Excellent solution in

some instances – use

only with whole



Lollipop charts draw more attention to the data value than standard bar/column does not HAVE to start

at zero (but preferable)

A space-efficient way

of showing value pf

make sure they are

variables is importan Usually benefits from

multiple variables- but

organised in a way that

numbers (do not slice

represent a decimal).

off an arm to

Radar chart



An alternative to radar arrngement of the

Spatial

Locator maps, population density,

natural resource locations, natural

variation in election results

Basic choropleth (rate/ratio)

disaster risk/impact, catchment areas,

The standard approach

map – should always be

rates rather than totals

and use a sensible base

Use for totals rather

than rates – be wary

that small differences

in data will be hard to

geography.

For showing

unambiguous

movement across a

For showing areas of

equal value on a map.

Converting each unit on

a map to a regular and

equally-sized shape –

good for representing

voting regions with

equal value.

Stretching and

shrinking a map so

that each area is

particular value.

Used to show the

events/locations -

any patterns the

reader should see.

mapped with an

but not snapped to an

intensity colour scale.

As choropleth map –

admin/political unit.

location of individual

make sure to annotate

Grid-based data values

sized according to a

Can use deviation

colour schemes for

showing +/- values

Proportional symbol (count/magnitde)

for putting data on a

anything else.

Example FT uses

Flow map

Contour map

Equalised cartogram

Scaled cartogram (value)

Dot density

Show the reader volumes or intensity Used only when precise locations or of movement between two or more geographical patterns in data are states or conditions. These might be more important to the reader than logical sequences or geographical

graphs.

locations.

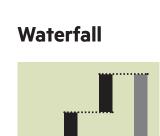
Example FT uses Movement of funds, trade, migrants, lawsuits, information; relationship

Flow

Sankey



Shows changes in flows from one condition to at least one other; good for tracing the eventual outcome of a complex



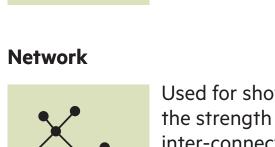
Designed to show the sequencing of data through a flow process, typically

Chord



+/- components. A complex but powerful diagram

which can illustrate 2-way flows (and net winner) in a matrix.



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

/ISUal vocabulary

Designing with data

There are so many ways to visualise data - how do we know which one to pick? Use the categories across the top to decide which data relationship is most important in your story, then look at the different types of chart within the category to form some initial ideas about what might work best. This list is not meant to be exhaustive, nor a wizard, but is a useful starting point for making

FT graphic: Alan Smith; Chris Campbell; Ian Bott; Liz Faunce; Graham Parrish; Billy Ehrenberg; Paul McCallum; Martin Stabe Inspired by the Graphic Continuum by Jon Schwabish and Severino Ribecca

informative and meaningful data visualisations.

ft.com/vocabulary

process. budgets. Can include