

Graphic formats and genres (I)

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About data

Qualitative – Descriptive including words and pictures. Used in building theory & making hypotheses.

Quantitative – Numerical data. Used to make correlations, establish causality.



Data values

- Qualitative
- Quantitative
- Nominal
- Ordinal
- Categorical
- Interval
- Discreet
- Continous

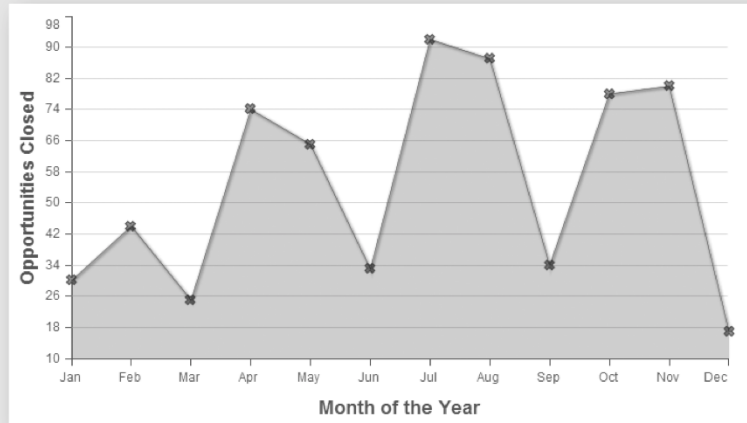
Data ink

$$\text{Data-ink ratio} = \frac{\text{Data-ink}}{\text{Total ink used to print the graphic}}$$

= proportion of a graphic's ink devoted to the non-redundant display of data-information

= 1.0 - proportion of a graphic that can be erased

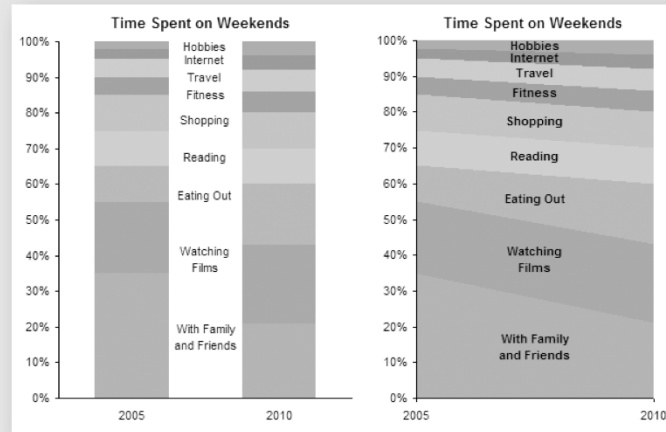
Simple area graph



Sales in millions?

Plotting symbols, as "x" indicate exact location of data point. Other types of plotting symbols include "drop lines"

Stacked area graph

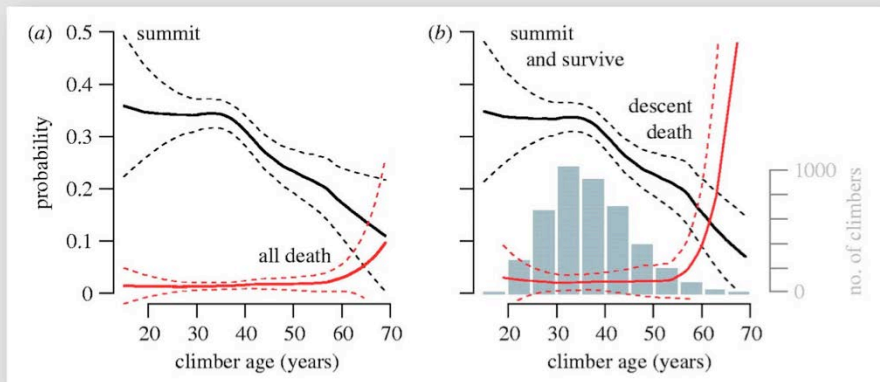


Stacked column and stacked graph. Use of labels on the data means no need for legend. (Decrease chart junk?)

Vertical scale identifies data as percentage. About scales: 1. Always include zero unless it is clearly identified; 2. Locate the zero where the Horizontal intersects the vertical axis; 3. Positive values always should go up, negative down; 4. Make scales continuous (no breaks); 5. The upper scale value should be larger than any value plotted on the graph; The smaller value should be smaller than any value plotted on the graph; 6. Use only linear (arithmetic) scales.

Exceptions:

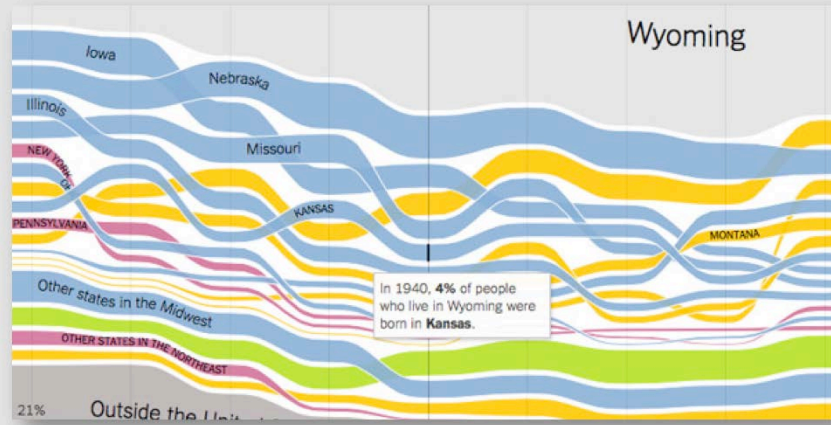
High-low area + histogram



“When a line representing some variation of mid-values is shown in conjunction with upper and lower values, the result is called a high-low graph. The upper and lower values maximum and minimum, plus and minus 1, 2, 3 standard deviations, confidence limits etc. The mid values might represent averages, media, fitted curves, etc.

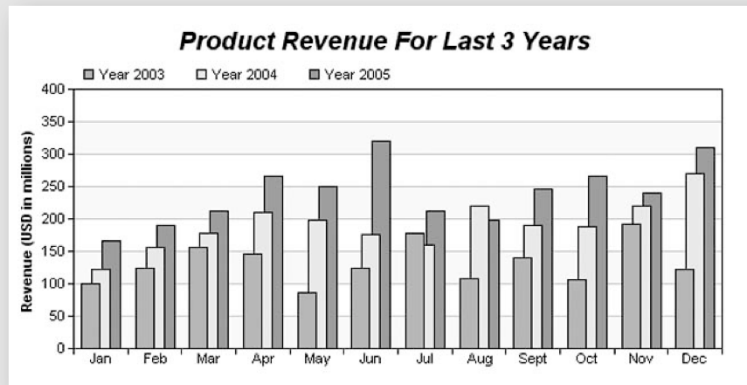
Notice the histogram on the right hand side. Do you remember what software program we have that allows us to make use of histograms daily: Photoshop.

Grouped 'stacked' area graph



The chart conveys the idea about the provenance of migration but because of lack of quantitative data, it is not precise.

Overlapped column chart



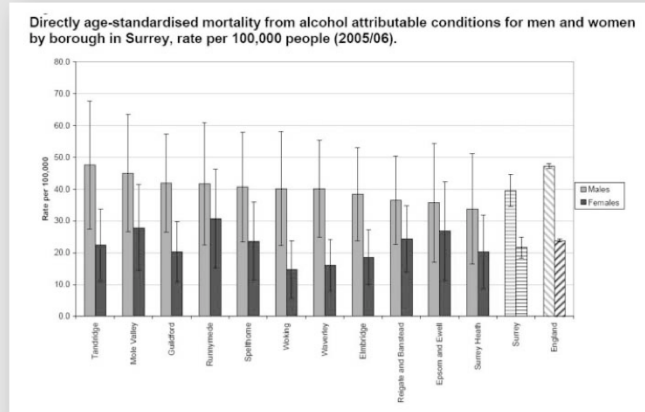
“Column graphs are a family of graphs that display quantitative information by means of a series of rectangles. They are used to compare multiple entities or to show how one or more entities vary over time.” Robert Harris, Information Graphics, Oxford University Press, New York, 1999. P. 80.

The technique of overlapping is often used to make it easier to read clustered columns. Sometimes they are even plotted in 3D and even with some perspective view.

Robert Harris, Information Graphics, Oxford University Press, New York, 1999. P. 82.

Show Solomon’s typography and talk about sizes of typefaces used. Why not all caps or all lower cases might not be good.

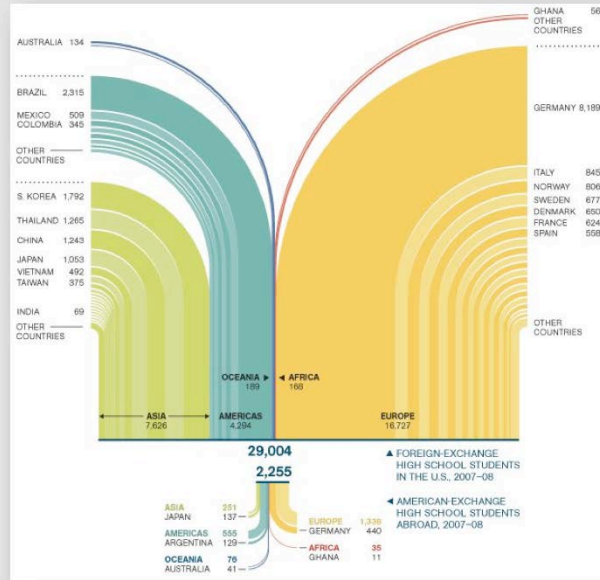
Clustered column chart



“When two or more data series are plotted side by side on the same column graph, the result is referred to as a clustered column chart. The objective is to compare multiple items at various points in time, show how the relationships between multiple items change over time, or to look for correlations or meaningful relations between multiple data series.” Robert Harris, Information Graphics, Oxford University Press, New York, 1999. P. 81.

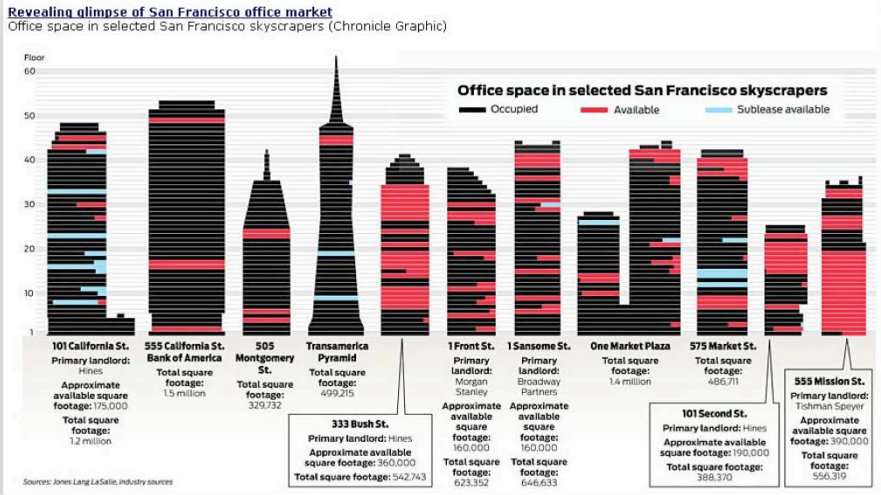
Error bars/marks at the top of the bars express potential error amounts that are graphically relative to each data point or data marker in a data series

Grouped area 'column' graph

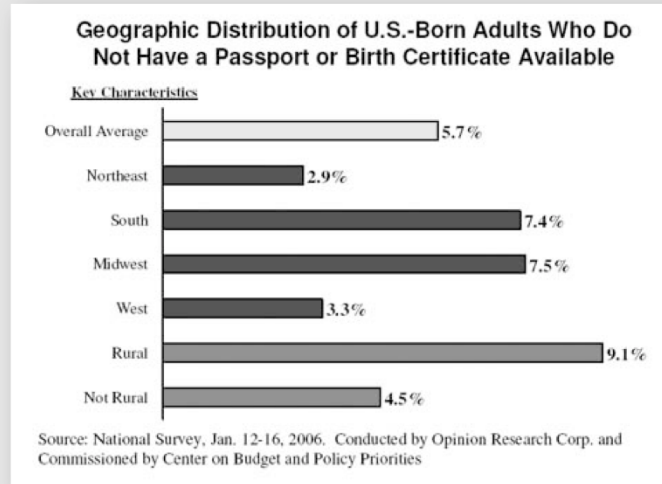


Is this like a Sans key diagram?

Free form column chart



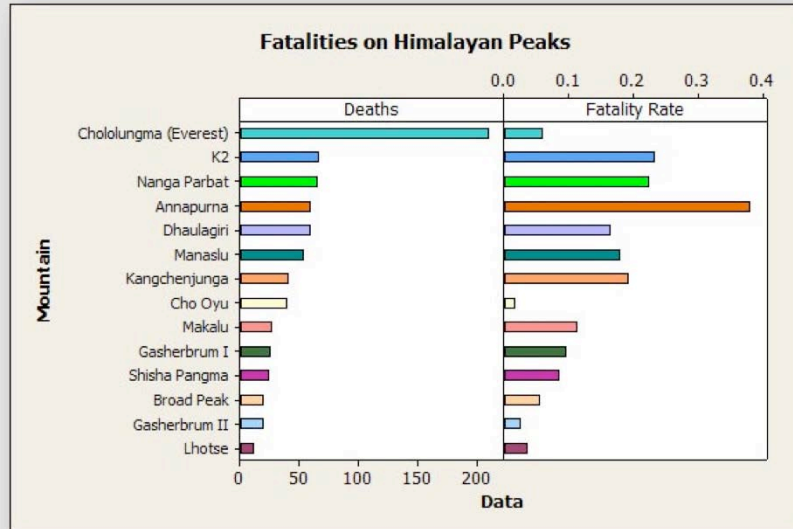
Simple bar graph



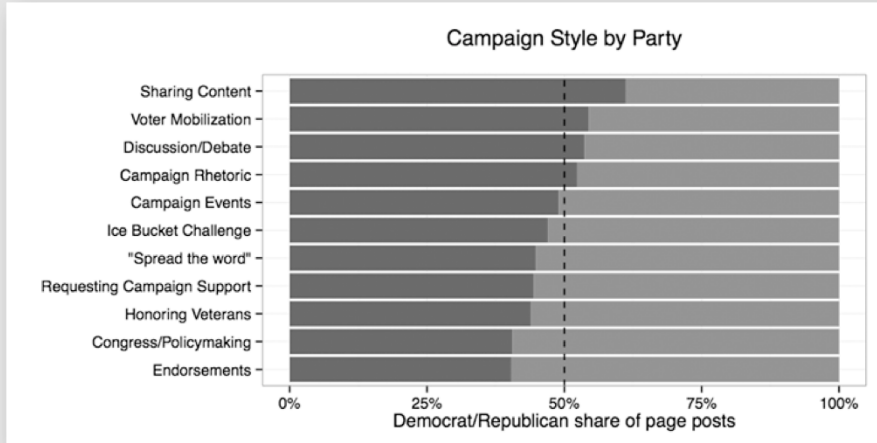
It might be advantageous to show the actual values on the graph. This way you do not need to use a legend. However, a legend can contain critical information needed to correctly decode a chart.

Notice the categories used in the vertical axis. What do they tell us about the narrative of the chart?

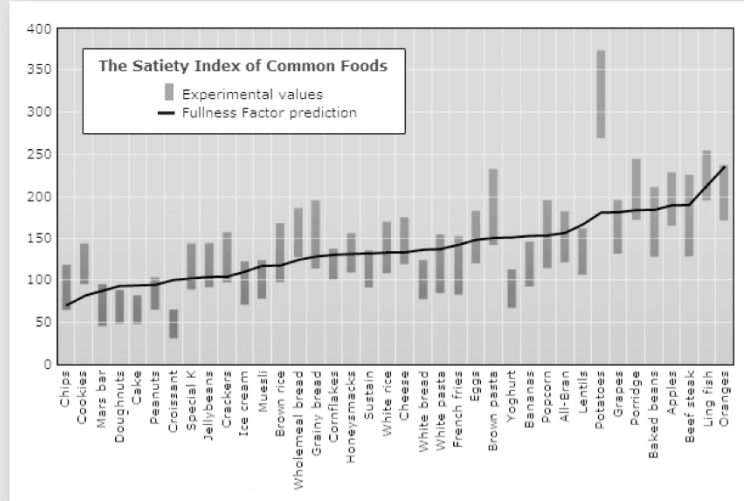
Paired bar graph



Stacked bar, reference line

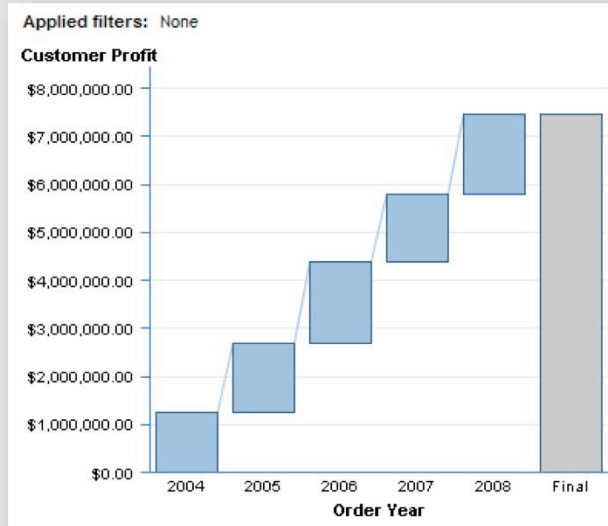


Range bar



Progressive column

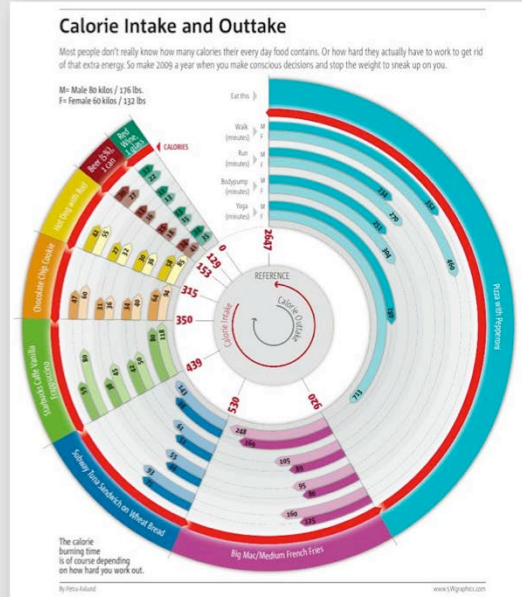
Progressive column/bar



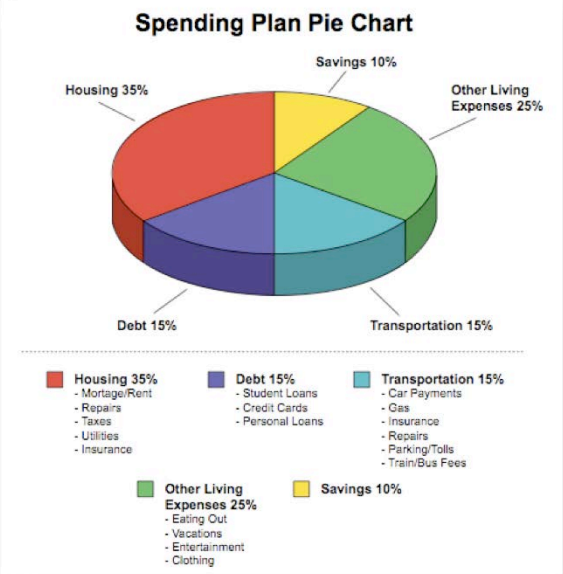
The purpose of the progressive column/bar is to add visual emphasis to the individual segments while still maintaining the concept that the segments add up to the whole.

From Supporting SAS documentation.

Circular bar



Circle area graph



Circular area graph

