

DataVizA Tutorial: Good Plots Bad Plots: Solutions

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Tutorial 2

Bad plots

1. Go to the website [top ten bad graphs](#) by Karl Broman. These graphs have all been published in reputable academic journals by respected scientists. Form groups of two or three and you tutor will allocate a plot to each group. In your groups discuss problems with the plots (if you are stuck, Karl Broman has his own commentary on each plot). After five minutes of discussion each group should appoint a spokesperson to discuss the problems with their graph to the entire group.

Try to critique the plots with reference to the following:

- Data ink ratio
- Data density
- Chart junk
- Lie factor
- Bad taste
- Bad perception
- Bad data

The first plot suffers from a low data-ink ratio and the 3d rendering could lead to bad perception.

The second plot suffers from a low data density (data density of zero).

The third and fourth plots both suffer from low data density although there are many data points the information can be compressed into the statement that the x and y variable are indistinguishable.

The fifth plot suffers from low data density, low data-ink ratio.

The sixth plot suffers from errors of perception due to the 3d rendering and low data density and data-ink ratios.

The seventh plot has a low data to ink ratio. Arguably this is also a case of bad data since the x axis is not a numerical variable.

The eighth plot is a clear case of chart junk with the dark gray background. Also two plots are used to compare three variables making this an example of bad data.

The ninth plot suffers from bad perception (3D rendering) and low data ink ratio.

The tenth plot suffers from bad data. The data are in the form of a ratio meaning that numbers above 1 are exaggerated and numbers below 1 are downplayed.

2. Find your own bad plot from business (try searching for terms like *bad graphs in business* on a search engine). Critique it according to the above criteria.