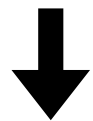# Quizzes > Solutions

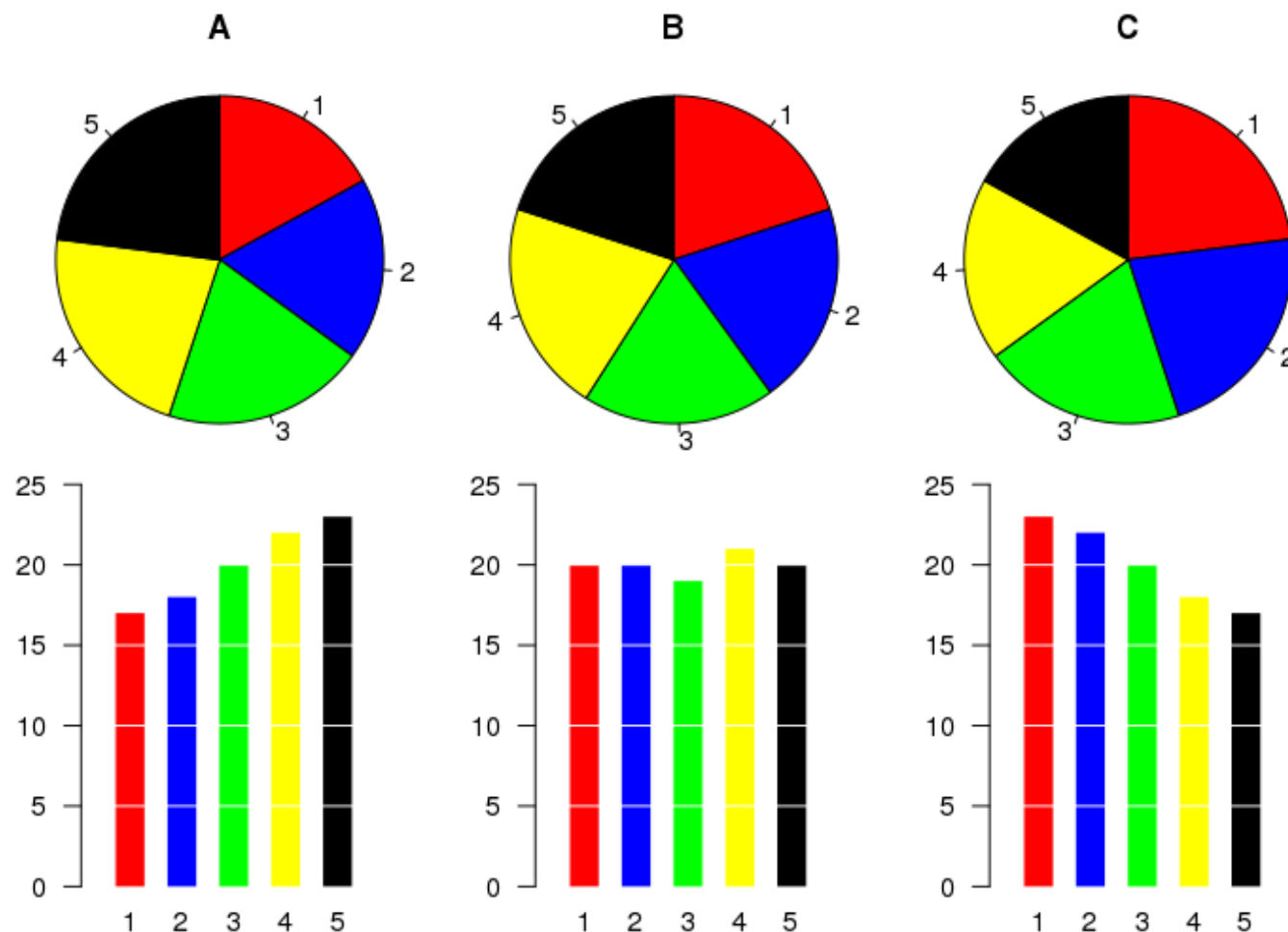## Visualising data

by Sina Rüeger

Notes & Material

↓

https://github.com/sinarueeger/teaching/tree/master/visualising_data
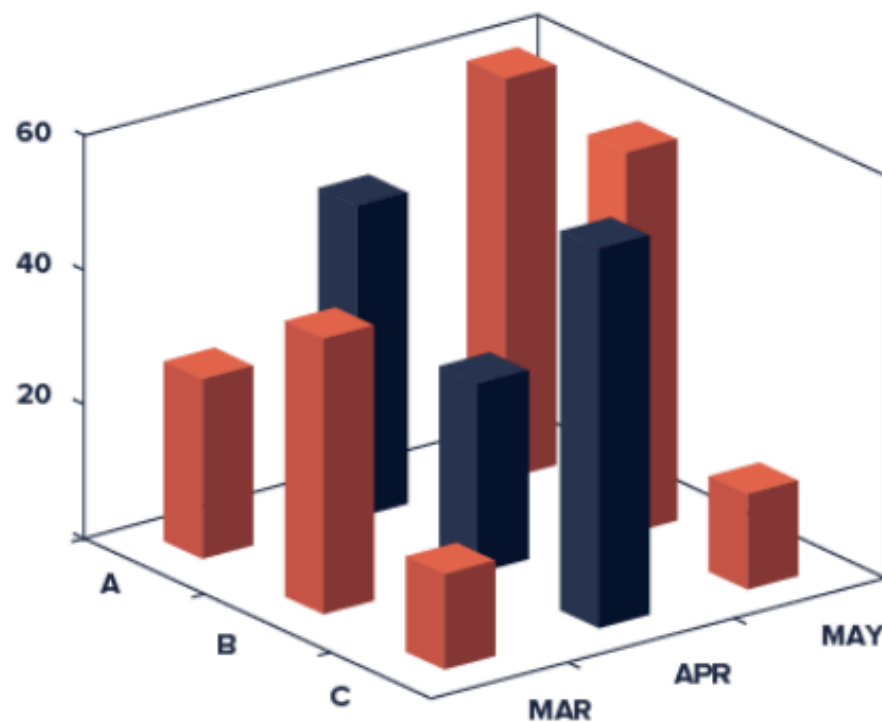
I. Bars vs. Pies

Below you see three pie charts and the corresponding bar charts.
What type – bar or pie – is better to display proportions.
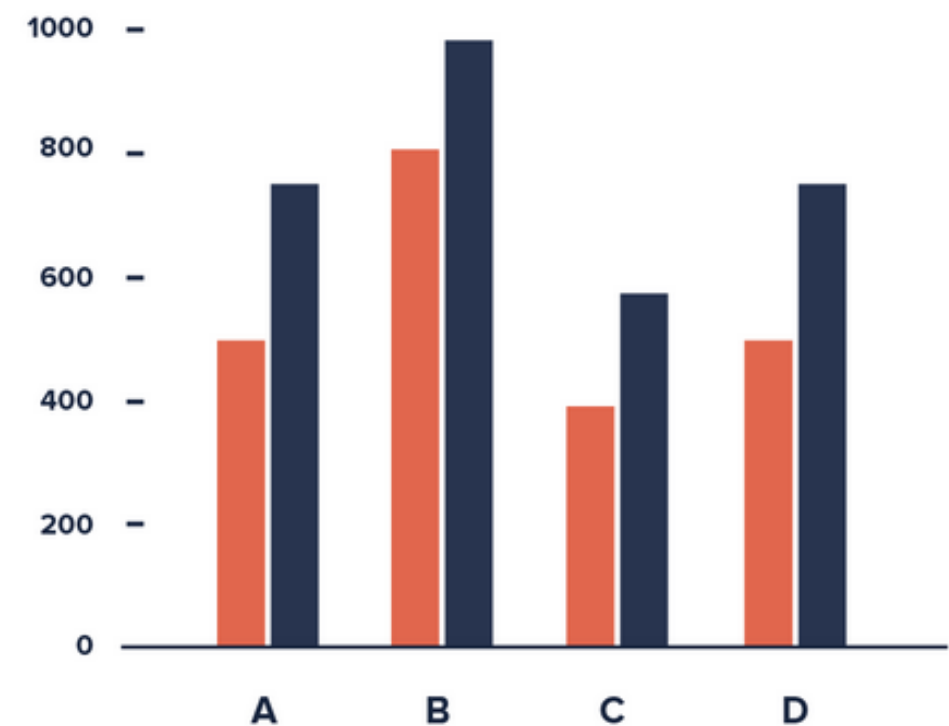Explain your choice.

II. 3D graphs

Below you see a 3D bar chart on the left hand side, and a bar chart on the right hand side (not displaying the same data). Explain, why a 3D graph make it harder to understand the underlying data compared to a barchart.

Solutions

1. Barcart, because the bars rely on a common y-axis. Pie charts display angles, which are hard to decode. For example, looking at the three piecharts, its not only hard to give an order to the 5 colors within one piechart, but also hard to order colors across pie charts.

2. Two "rules" are harmed:

   1. Low ink-data-ratio: In this case, the 3rd dimension does not convey any additional information.

   2. 3D volumes are harder to interpret than areas or lines.

   Beyond that (although this was not discussed during the presentation) there is also a visual illusion created by displaying 3D bars from a bird's eyes perspective.