

## **Good graphics**

### **Simplicity of design and complexity of data**

#### **Quality presentations of data —**

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- Take advantage of how people process information
- Reduce the number of thought processes required to understand the data
- Tear down some fundamental obstacles to understanding

#### **Statistical graphics —**

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- show the big picture
- are paragraphs of data
- are best constructed to convey one finding or concept

#### **When do you use tables?**

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- 10 or fewer data points
- Exact numerical data
- Localized comparisons

#### **Types of graphics —**

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##### **Continuous variables**

- line graphs
- area charts
- scatter plots
- maps

##### **Categorical variables**

- bar graphs
- maps
- diagrams

##### **Not recommended**

- pie charts
- stacked bar graphs
- stacked line graphs

#### **Hierarchy of graphical perception**

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- Position along a common scale
- Position along identical
- nonaligned scales
- Length
- Angle - slope
- Area
- Volume
- Color - hue

Source: William S. Cleveland, *The elements of graphing data*, (Monterey, California: Wadsworth Advanced Books and Software, 1985)

### Tips for statistical graphics

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#### Make all verbal tasks easy to understand

- Do not use abbreviations
- Avoid acronyms
- Write labels left to right
- Use proper grammar
- Do not use legends except on maps

#### Avoid optical illusions and graphical puzzles

- Use solids for line styles and fills
- Avoid data point markers on lines
- Use the appropriate aspect ratio
- Start the scale at zero
- Use only one unit of measurement per graphic
- Use 2 dimensional designs for 2 dimensional data

### Summary

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#### Highlight the data

#### Present logical visual patterns

#### Let the data lead you to the best method of presentation

#### Avoid nondata ink and chartjunk

#### Strive for clarity in all elements of your presentation

#### Use those graphical elements that are highest on Cleveland's perception scale

#### Do the work for your audience so that they can easily understand your point

### Sources

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See also:

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