

▷ Motivation for graphics:

- synthesis of information
- explore datasets
- visual tests
- communication of results

▷ Criteria for good graphics:

- readability for reader
- intelligibility of the message to the reader
 - ↳ think of "what is the message for reader"
- no possible misunderstanding

▷ Problem: provide "nice" pictures to help the understanding

- increases deeply the quality of the paper
- show the scientific quality of your research
- observation leads to open problems
- pictures generate discussions

▷ Mistakes:

- semantic of graphical objects
- conventions for graphics reading
- first step in scientific validation

* guidelines for graphics

→ minimize Wile



* Common mistakes

- multiple scaling, too much information
- cryptic information
- non-relevant graphic objects
- how to cheat?

DATA

- the type of graphic is adapted to the nature of data (curve, bars, pie, histogram...)
- approximations / interpolation makes sense
- curves are defined by a sufficient number of points
- the building method of the curve is clear : interpolation (linear, polynomial, regression...)
- confidence intervals are visualized (or given separately)
- steps of histograms are adequate
- histograms visualize probabilities (from 0 to 1)

* The nature of the data implies the type of representation

* Keep in mind: Who is the reader and why should he read the graphics?

* Hints for the design of a good graphical repr.

- minimize efforts of the reader
- maximize information
- minimize ink
- use traditional conventions
- evaluate several representations before choosing the adequate

...

Reference : Practical Handbook of Cartographic ...

R book

ggplot

Lo idea : We program our picture!