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▷ 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 INLe



* 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
- make several representations before choosing the adequate

...

Reference: Practical Handbook of Cartographic ...

↑ book

ggplot

↳ idea : we program our picture!