

# Overview Data Visualisations

## Grammar of Graphics

Andreas Reschreiter

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# A Taxonomy for data graphics

Data graphics are made up of basic building blocks:

- ▶ visual cues
- ▶ coordinate systems (cartesian, polar, geographic)
- ▶ scales (categorical, numeric; time)
- ▶ context (titles, labels, annotations)

More complex displays use

- ▶ facets and/or
- ▶ layers

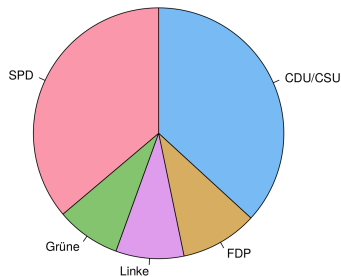
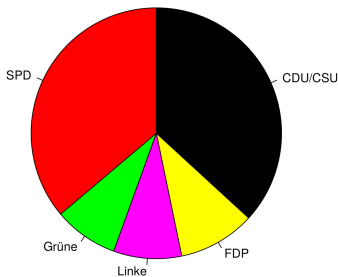
*Scales* map variables to one or more visual cues.

# Visual cues

Visual cues are graphical elements that attract one's eye.

Cue	Scale	Use
Position	numerical	where in relation to other things?
Length	numerical	how big (in one dimension)?
Angle	numerical	how wide? parallel to something else?
Direction	numerical	at what slope? Time series goes up or down?
Shape	categorical	belonging to which group?
Area	numerical	how big (in two dimensions)?
Volume	numerical	how big (in three dimensions)?
Shade	either	to what extent? how severely?
Color	either	to what extent? how severely?

## A note on color

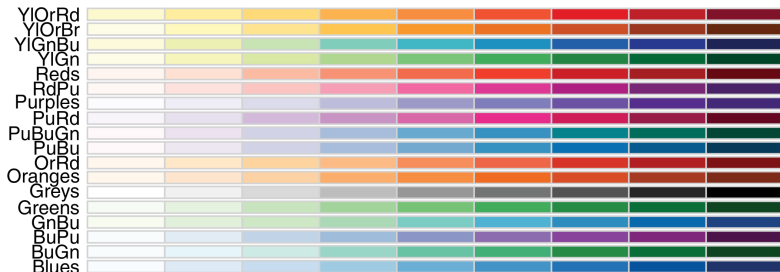


A bad choice of color can be very distracting (left palette) or cause technical problems (colors in right palette will not be distinguishable in B/W). About 8% of humans are color-blind!

# Recommended palettes

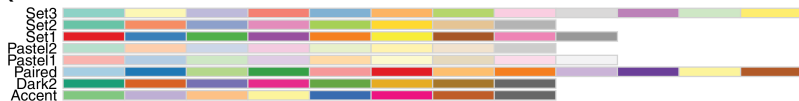
The RColorBrewer package allows to choose “good” color palettes, suitable to color-blind people.

Sequential:

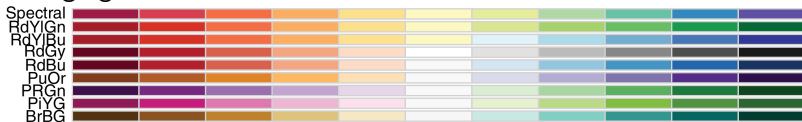


# Recommended palettes

## Qualitative:



## Diverging:



# Example

