

Types of data

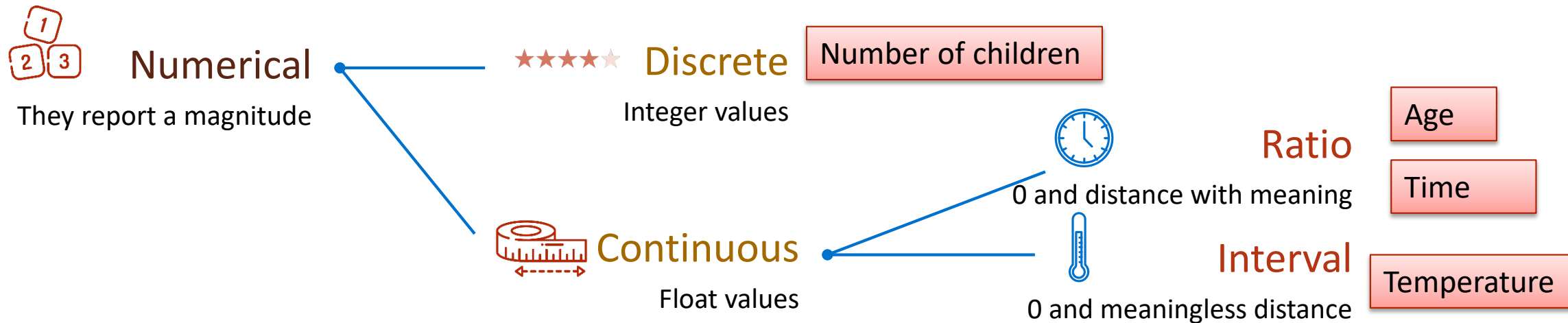
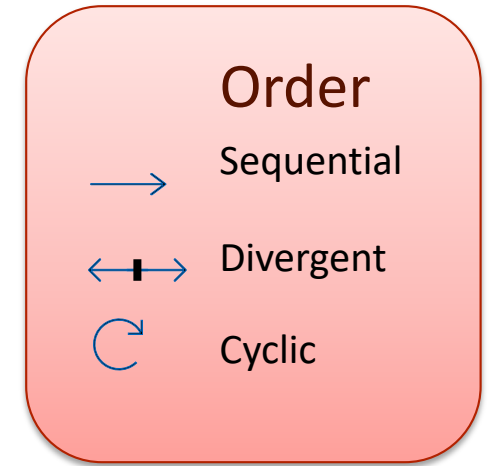
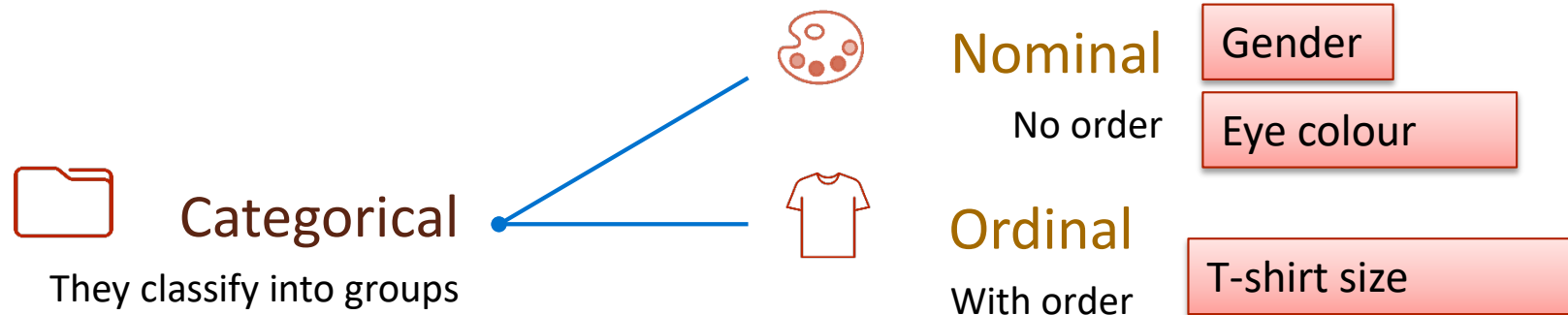
There is strength in numbers, but organizing those numbers is one of the great challenges.

**John C. Mather,
astrophysicist**

Objectives

- 1 Know the different types of data.
- 2 Know how to distinguish between absolute distances and distances by convention between values.
- 3 Know how to distinguish between absolute zero values and zero values by convention.
- 4 Understand the different types of order and their relationship to data types.
- 5 Have informed criteria for deciding how to visually encode color data

Data types



Using colour and data types

In ordering:

Higher Saturation = Higher quantity
Darker = Higher

Categorical data. Nominal

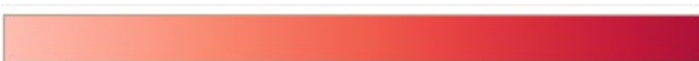


Categorical data. Ordinal

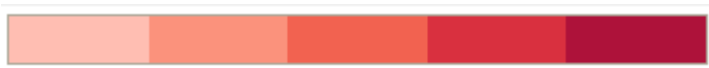


Numerical data. Encoding

Continuous values



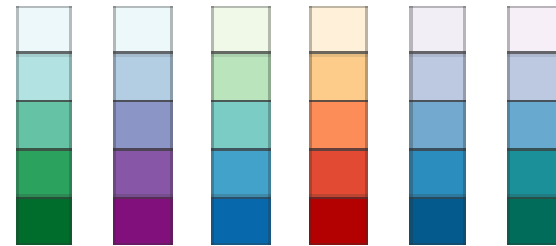
Discrete values



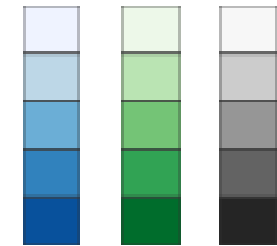
Numerical data or Categorical-Ordinal. Ordering

Sequential: each step differs in saturation or in saturation and lightness.

Multi-hue:



Single hue:



Diverging: two hues, a neutral hue in the middle



Key ideas

- 1 The selection of a chart depends on the type of data.
- 2 Although formally two values are numerically encoded in a similar way, their meaning can be very different. Graphical representation should represent meaning.
- 3 Data types are key to deciding how to operate or aggregate our values.

Bibliography

- ★ Frost, J. (2020) Introduction to Statistics: An intuitive guide for analysing data and unlocking discoveries. 1st ed. Pennsylvania: Jim Publishing.
- ★ Brewer C. [Color Brewer 2.0](#)

Thanks you for your attention



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