Data Visualization for Political Social Work

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Contents

1 How to Navigate This Presentation

As you move forward through this presentation you can press b to make text bigger, or s to make text smaller.

2 Outline of Conversation

2.1 Our Discussion Today

- Purpose: Focus on the *conceptual language* of data viz.
- **Not** a deep dive into the technical tools for doing dataviz.
- Whatever tool you are using (Paper and Pencil, Markers on Whiteboard, Excel, Google Sheets, R), what are some conceptual considerations in making a data visualization?
- Considerations for being part of a *team* conversation about visualizing data.
- More specific technical resources at end.

2.2 Our Data

The data that we are using come from the **W**orld **D**evelopment **I**ndicators (WDI) which are country level statistical information from around the world, collected by the World Bank.

3 Basic Considerations

## 3.1 The Nature of Your Variables Determines the Nature of Your DataViz

- Deciding upon the right data visualization to represent your data can be a daunting process.
- I believe that a *starting point* for this thinking is some basic statistical thinking about the *type* of variables that you have.
- At the broadest level, variables may be conceptualized as *categorical* variables, or *continuous* variables.

3.2 Variable Types

- *categorical variables* represent unordered categories like *neighborhood*, or *religious affiliation*, or *place of residence*.
- *continuous variables* represent a continuous scale like a *mental health scale*, or a *measure of life expectancy*.
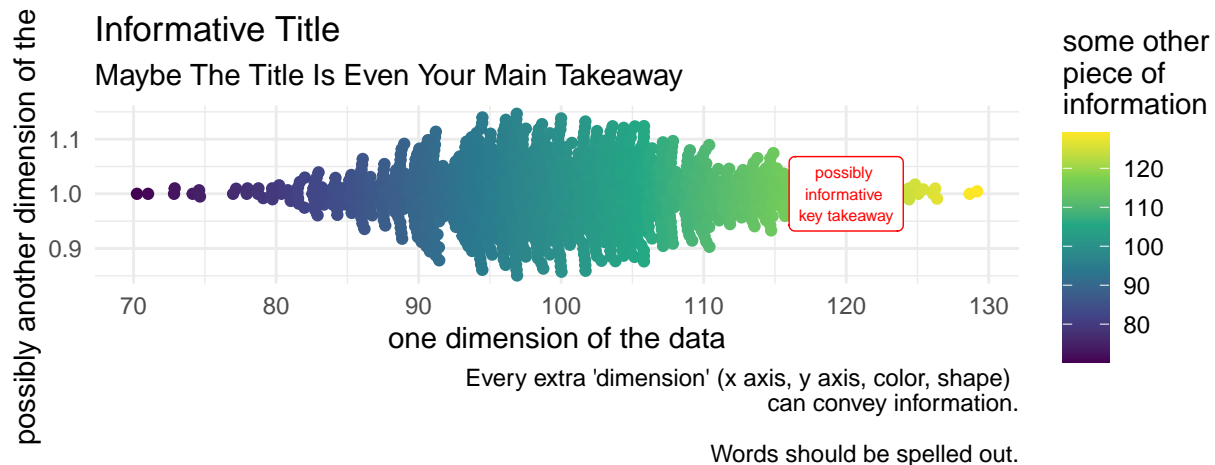
3.3 Visualization Possibilities

How To Choose A Chart
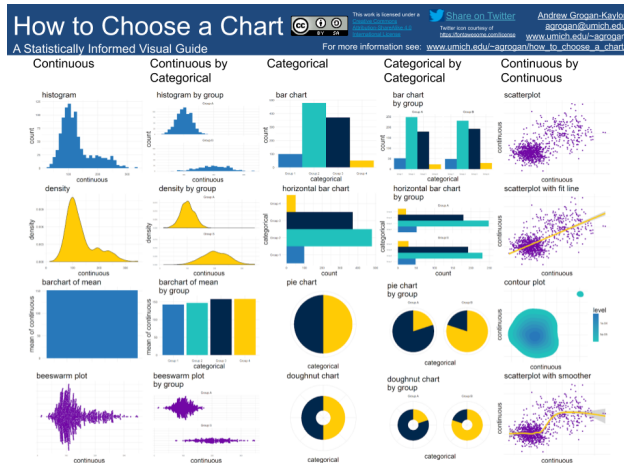
4   Story-Telling
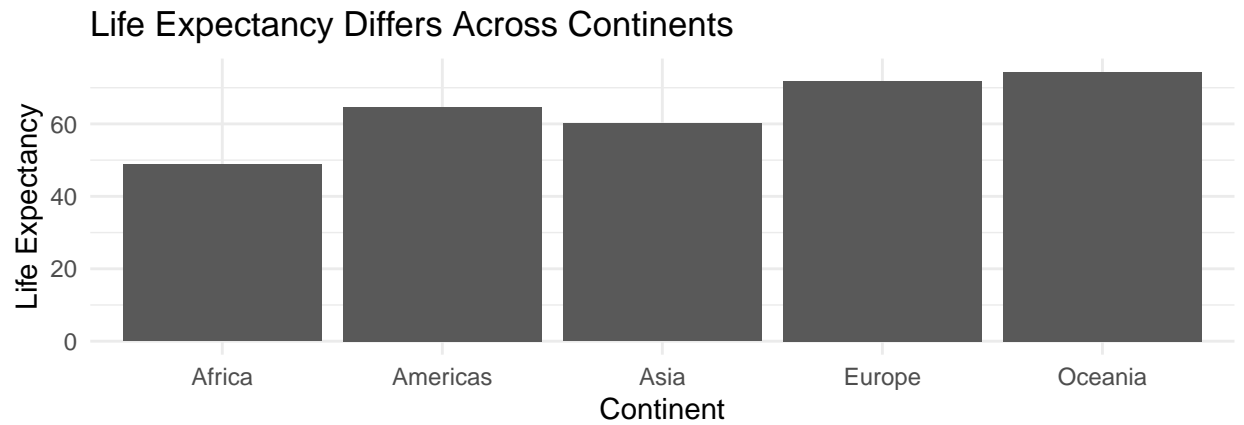
4.1   Your Graph Should Be A Self-Contained Story

4.2   Your Graph Should Be Embedded In A Story
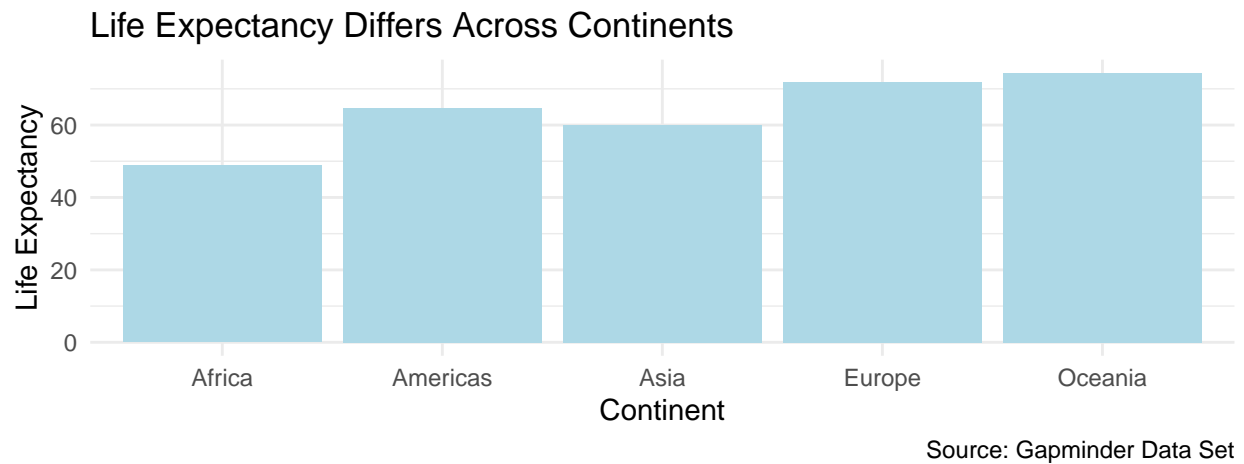
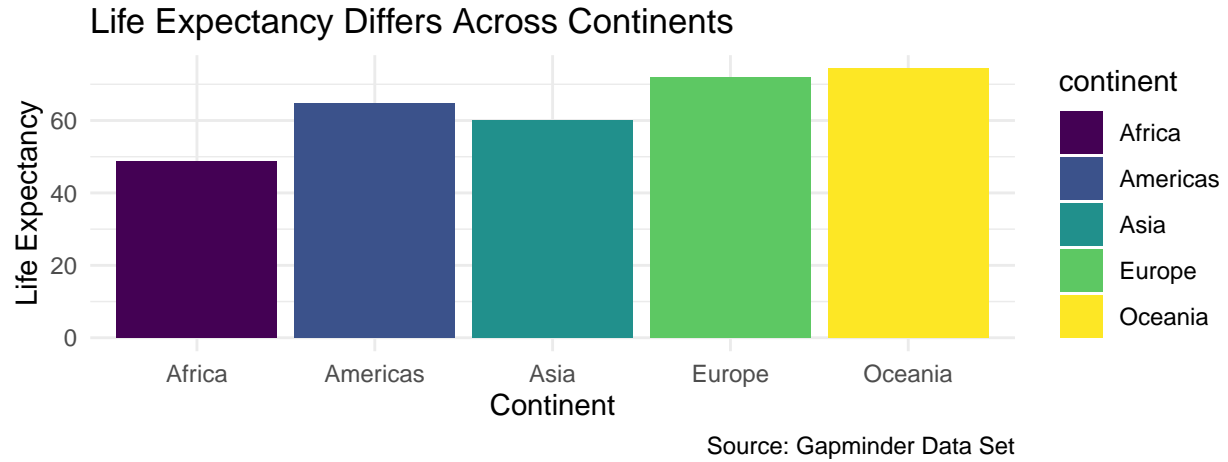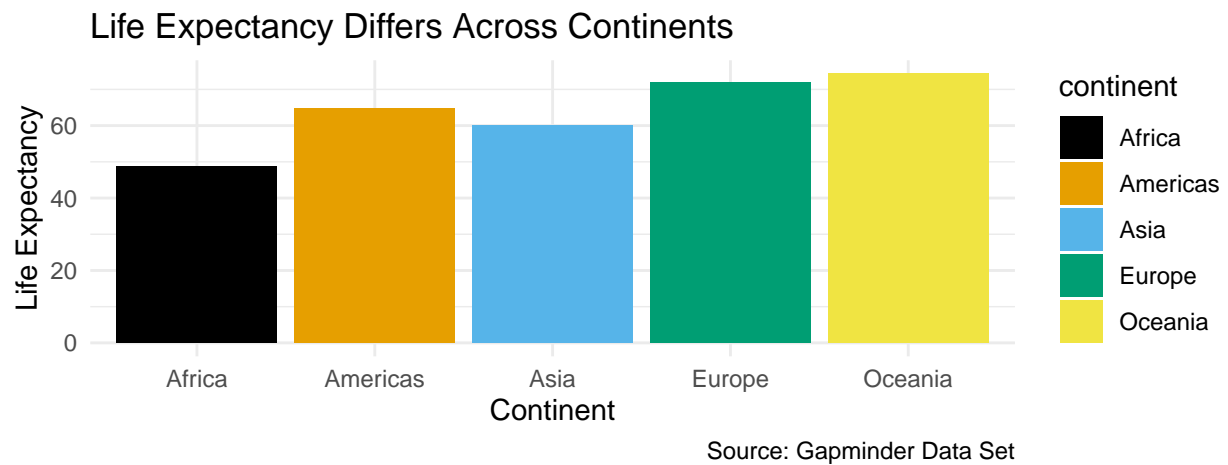# 5 Color

5.1 Greyscale Graph

Life Expectancy Differs Across Continents

Source: Gapminder Data Set

5.2 Color is Organizational Identity

Life Expectancy Differs Across Continents

Source: Gapminder Data Set

4

5.3 Color Is Information

Life Expectancy Differs Across Continents

Source: Gapminder Data Set

5.4 Color Is Accessibility

Life Expectancy Differs Across Continents

Source: Gapminder Data Set

5.5   Color Is Emphasis

Life Expectancy Differs Across Continents
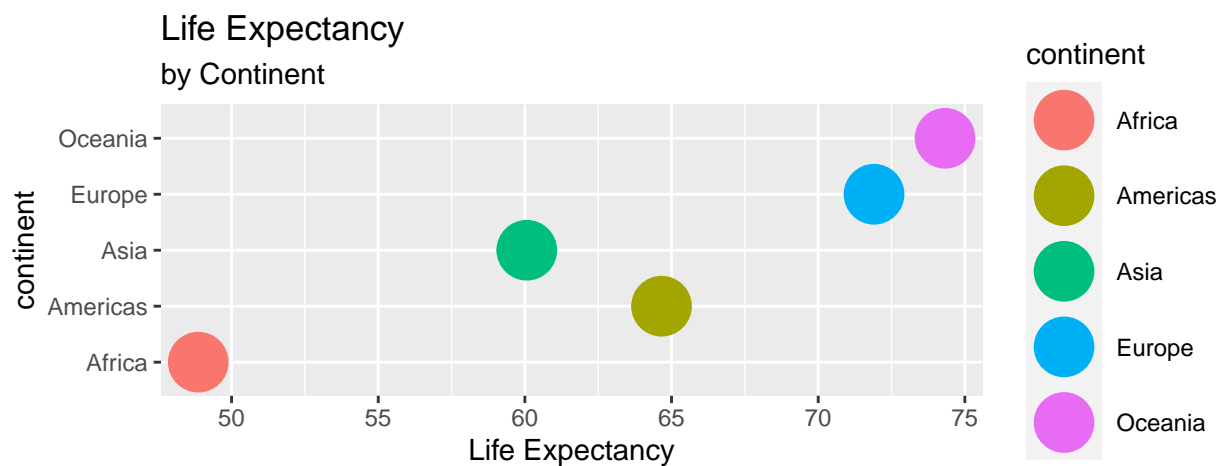

Source: Gapminder Data Set
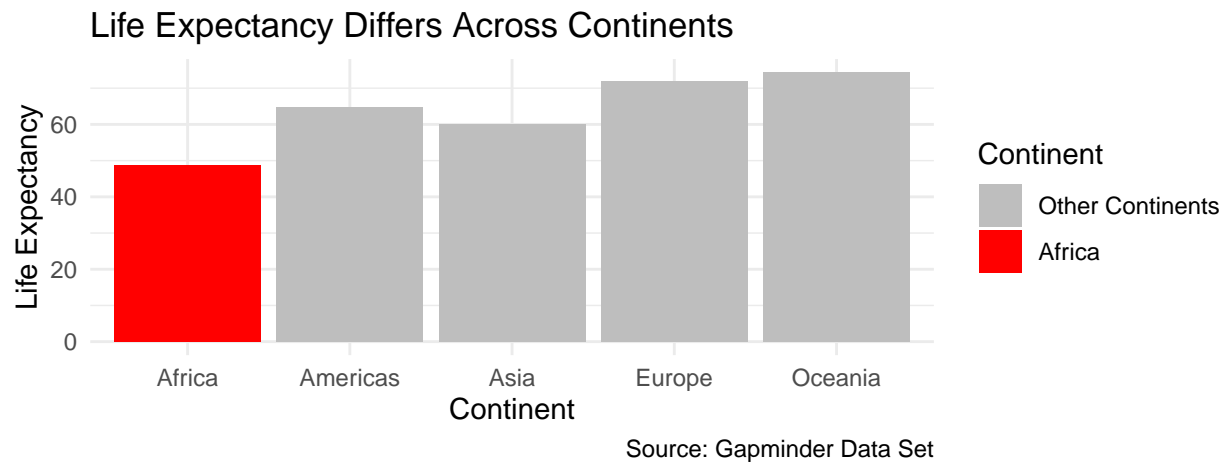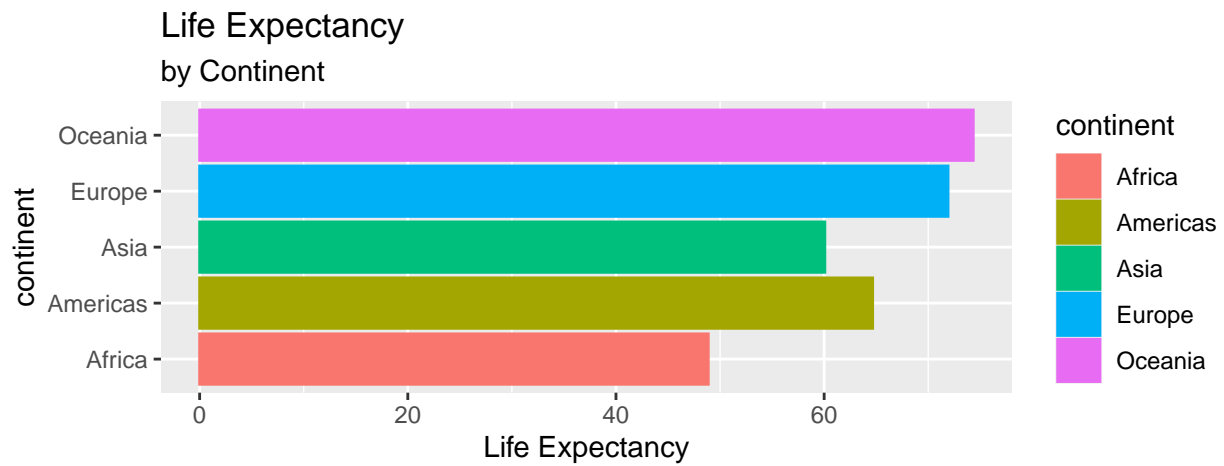
6   Cognition

6.1   "Graphical Perception"

"Ordering elementary tasks by accuracy (Cleveland and McGill 1985):"

1. Position along a common scale
2. Position on identical but nonaligned scales
3. Length
4. Angle & Slope
5. Area
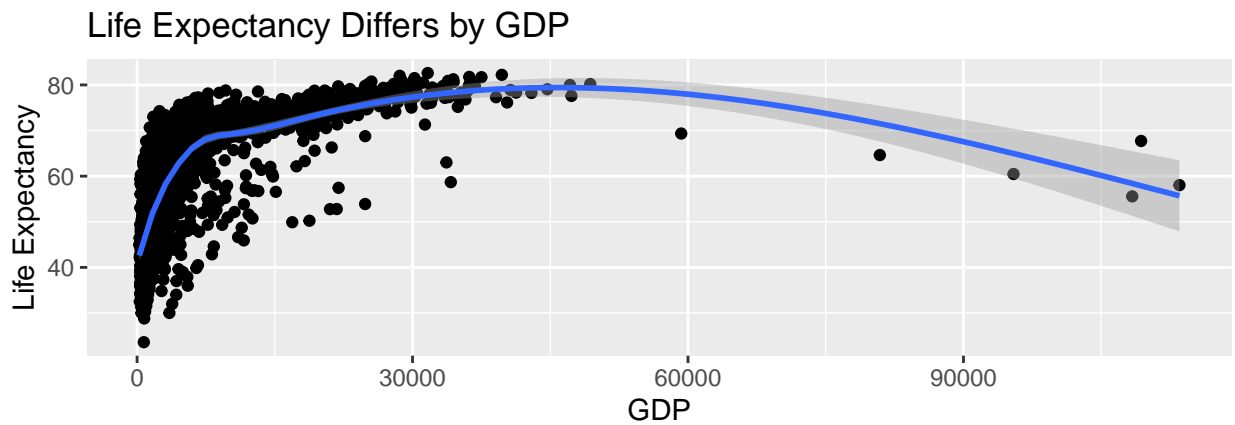6. Volume, Density, Color Saturation
7. Color Hue

6.2   Example (Position Along A Common Scale)

6.3 Example (Length)

Life Expectancy
by Continent

6.4 Example (Angle)

Life Expectancy Differs by GDP

Source: Gapminder

7 Resources for Further Learning

7.1 Resources

- How to Choose a Chart: A Visual Guide. [Extended Version]
- *Introduction to R*:
    - HTML Web Book
- *Introduction to ggplot2*:
    - HTML Web Book
- *Two Page R*:
    - PDF
- *Two Page ggplot2*:
    - PDF

8 Questions?

8.1 Please Contact

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References

Cleveland, William S, and Robert McGill. 1985. "Graphical Perception and Graphical Methods for Analyzing Scientific Data." *Science* 229 (4716): 828–33. http://www.jstor.org/stable/1695272.