

Introduction to \mathcal{R}

Session 4: ggplot2 Graphics

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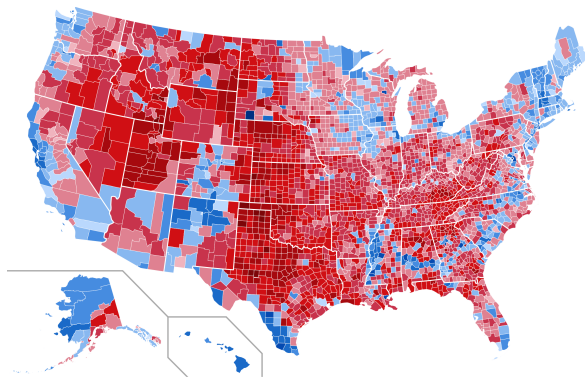
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Introduction

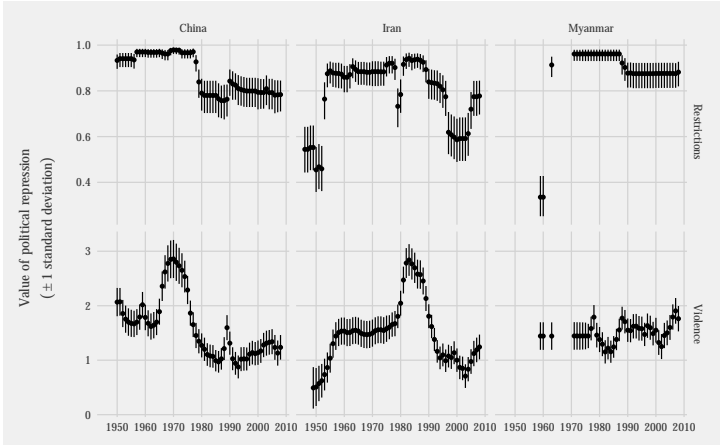
A Taste of ggplot2

Figure 1: Vote Share in the 2012 Presidential Elections by County²



²Healan, K. forthc. Data Visualization. A Practical Introduction. <https://socviz.co/maps.html> (last access: 10/03/2018).

More Tasting: Trajectories in Political Repression³



³Tanneberg, D. 2018. The Politics of Repression under Authoritarian Rule. How Steadfast is the Iron Throne? Dissertation Manuscript, Humboldt University Berlin, p. 54.

Outline

- 1 Introduction
- 2 What is ggplot2?
- 3 How to talk to ggplot2?
- 4 Practice with ggplot2

What is ggplot2?

Graphics Engines in \mathcal{R}

- 3 major graphics systems in \mathcal{R}
 - base graphics: ships with \mathcal{R}^4
 - lattice developed by Deepayan Sarkar
 - ggplot2 developed by Hadley Wickham
- all build on Paul Murrell's grid Graphics
- differ remarkbly on usability & quality of output

⁴Check out Nathan Yau's impressive tutorials at [Flowing Data](#).

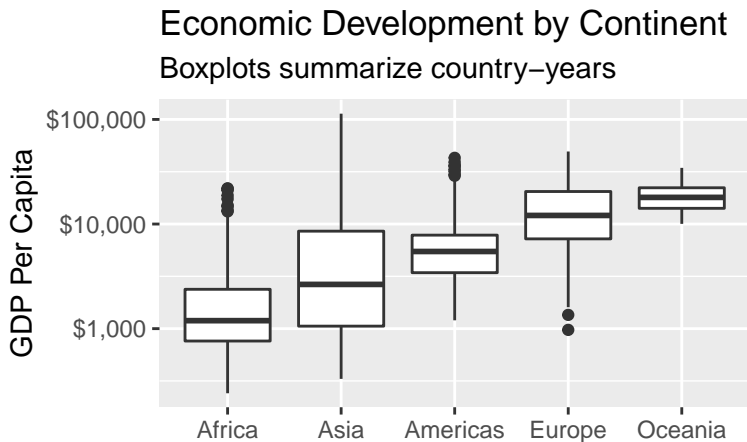
What's the buzz about?

How to talk to ggplot2?

A schematic for making a plot

```
p <- ggplot(  
  data = <data>, # 1. What is your data?  
  mapping = aes( # 2. What var's map unto the plot?  
    <aesthetic> = <variable>,  
    <aesthetic> = <variable>,  
    <...> = <...>  
  )  
)  
p + # Add layers to your plot  
  geom_<type>(<...>) + # Define your plot type  
  scale_<mapping>_<type>(<...>) + # Adjust scales  
  coord_<type>(<...>) + # Adjust co-ordinates  
  labs(<...>) # Label plot elements
```

Our target graph



Source: Gapminder.

Practice with ggplot2

Replicate this figure

Life Expectancy vs. Economic Development

