

Polar coordinates

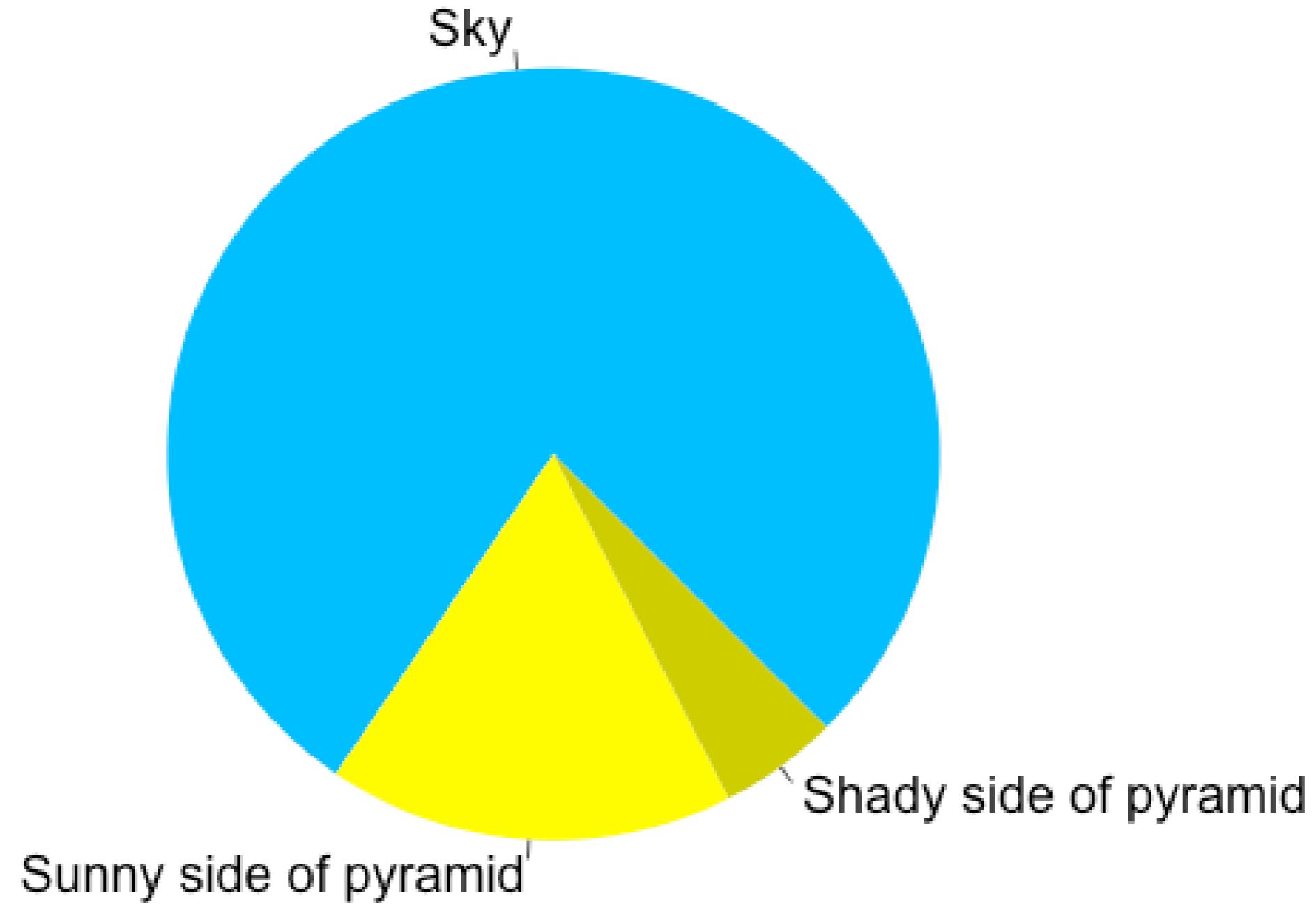
UNDERSTANDING DATA VISUALIZATION



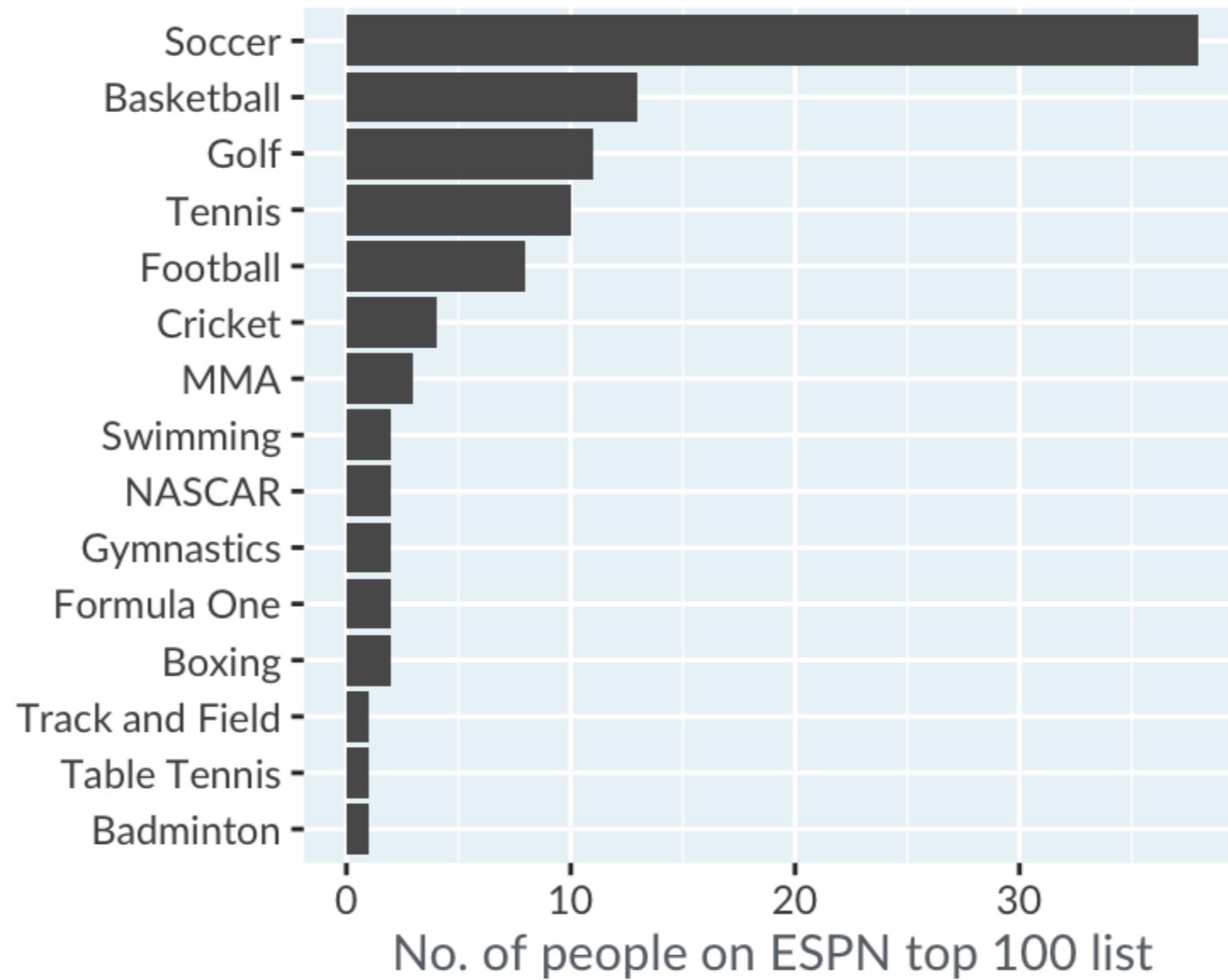
Richie Cotton

Learning Solutions Architect at
DataCamp

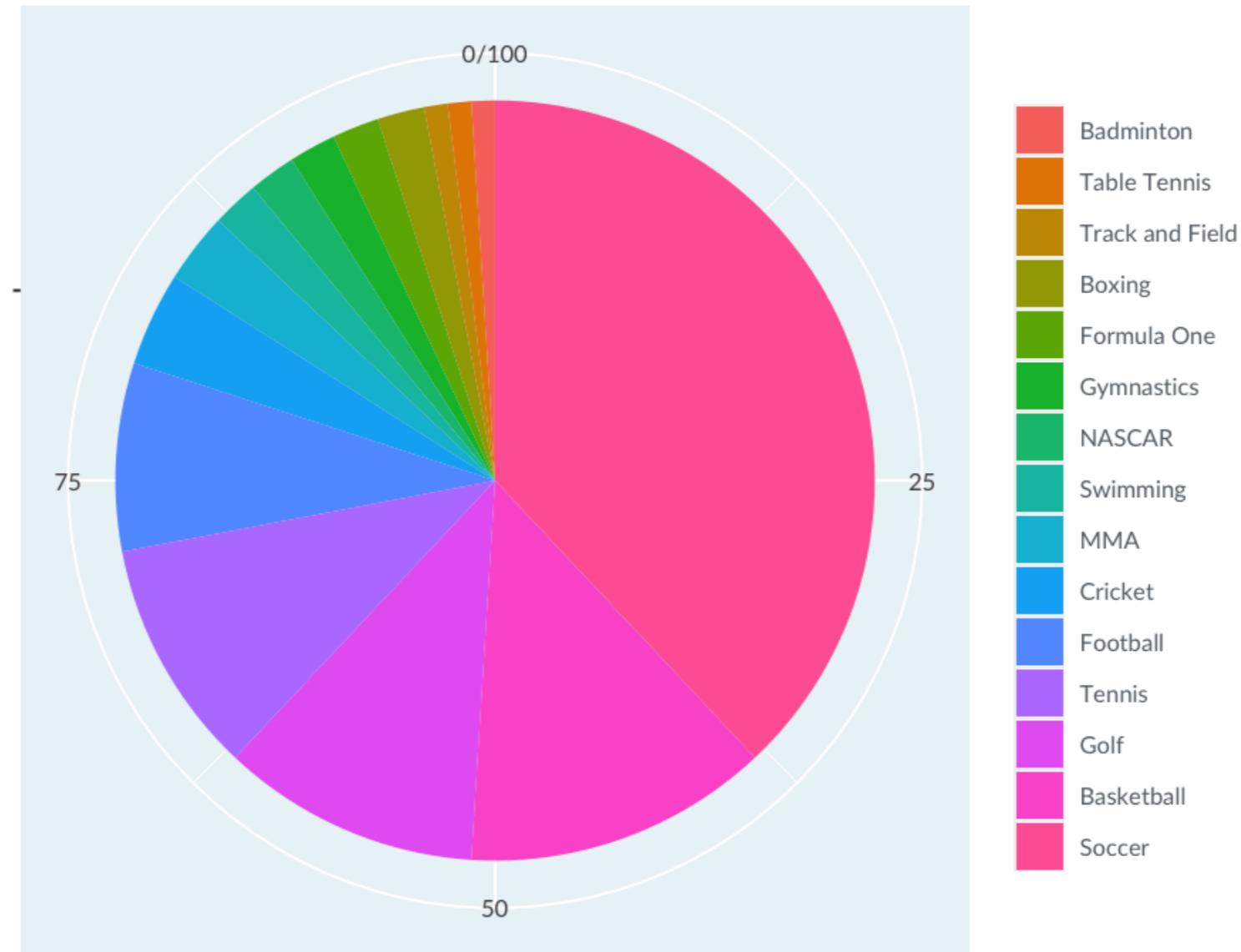
Pie plots



ESPN famous athletes, by sport



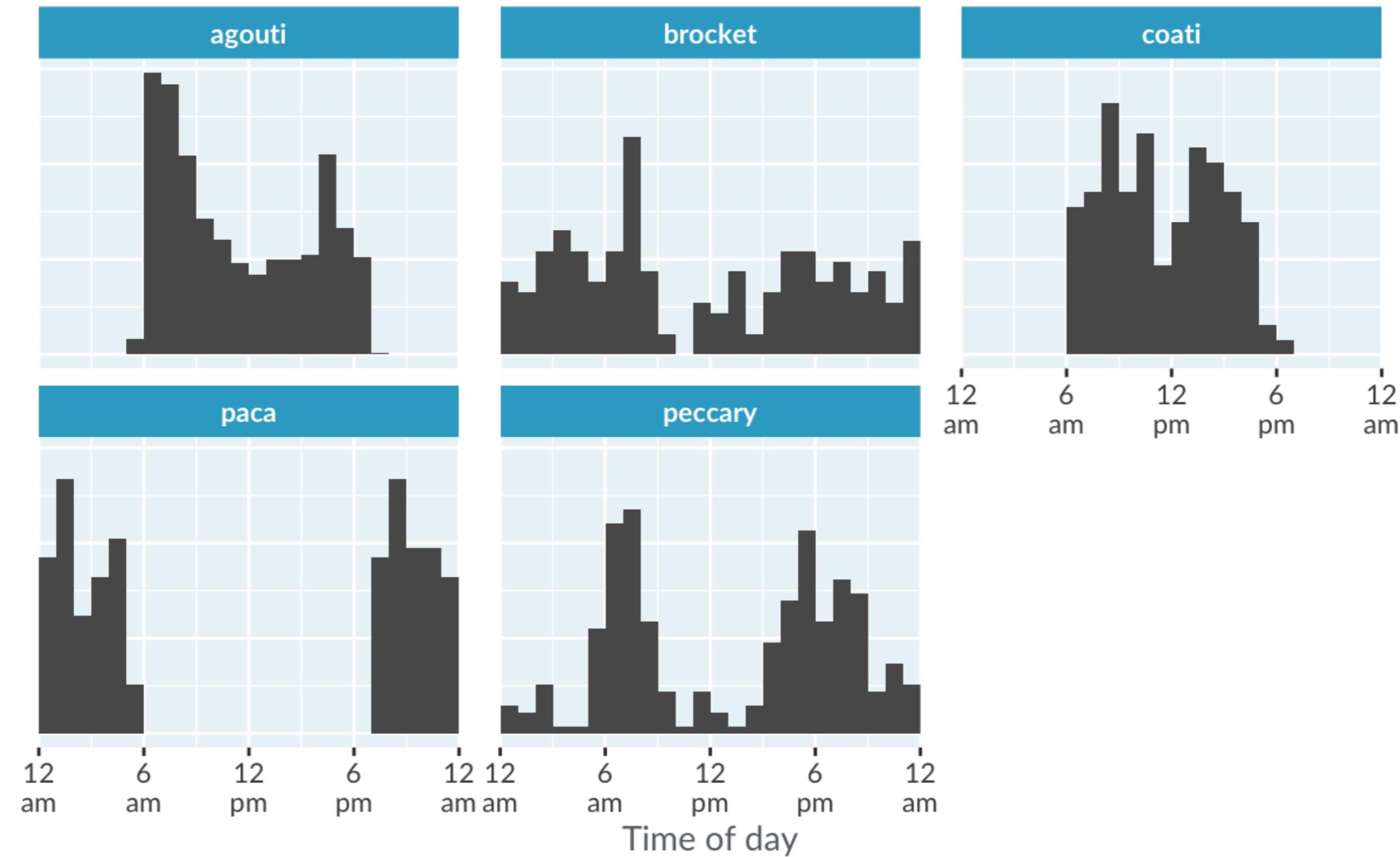
Bar plot + polar coords = pie plot



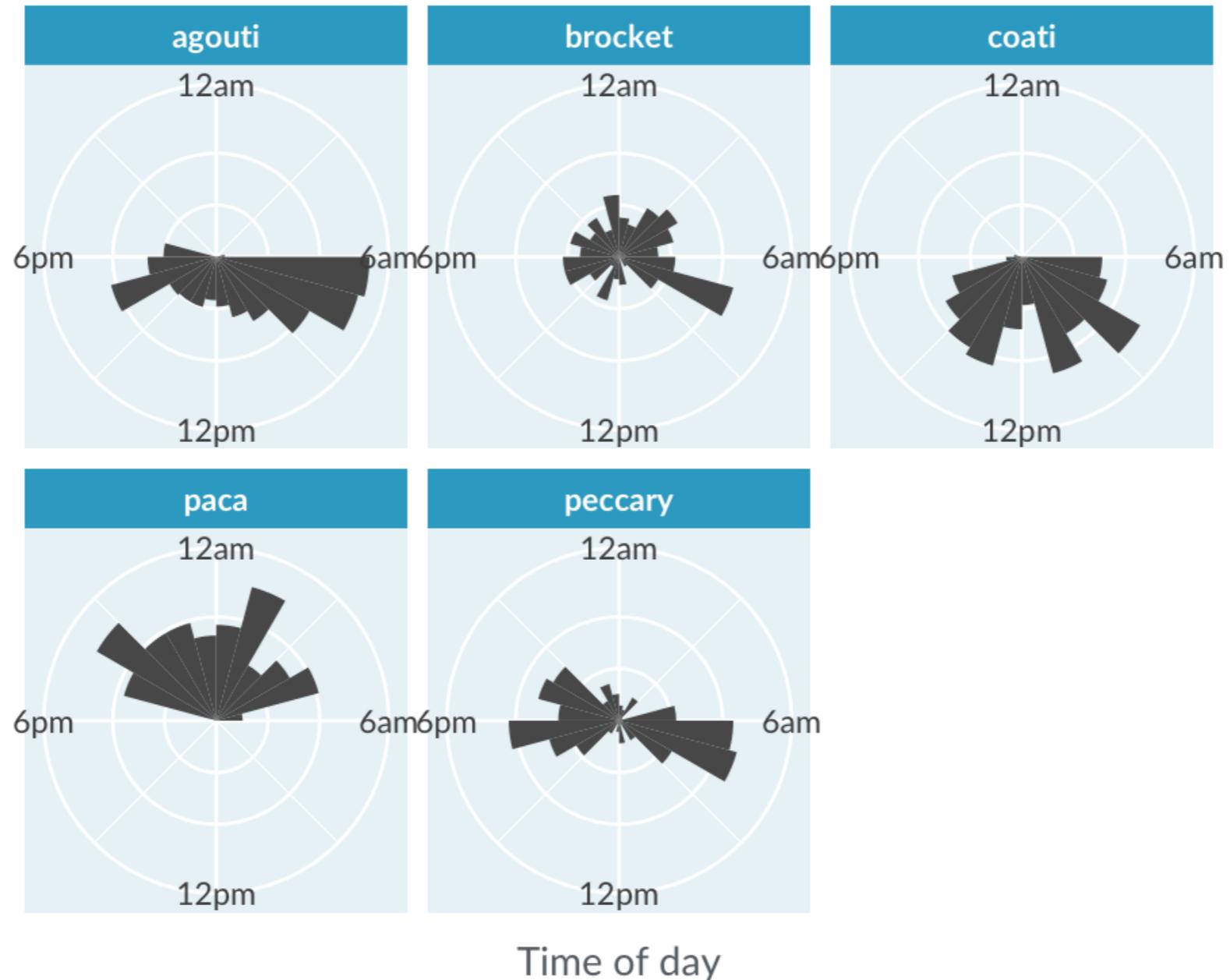
When should you use polar coordinates?

- Almost never.
- If you have a variable that is naturally circular (time of day, compass direction).

Histogram of animal activity



Histogram + polar coords = rose plot



Let's practice!

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Axes of evil

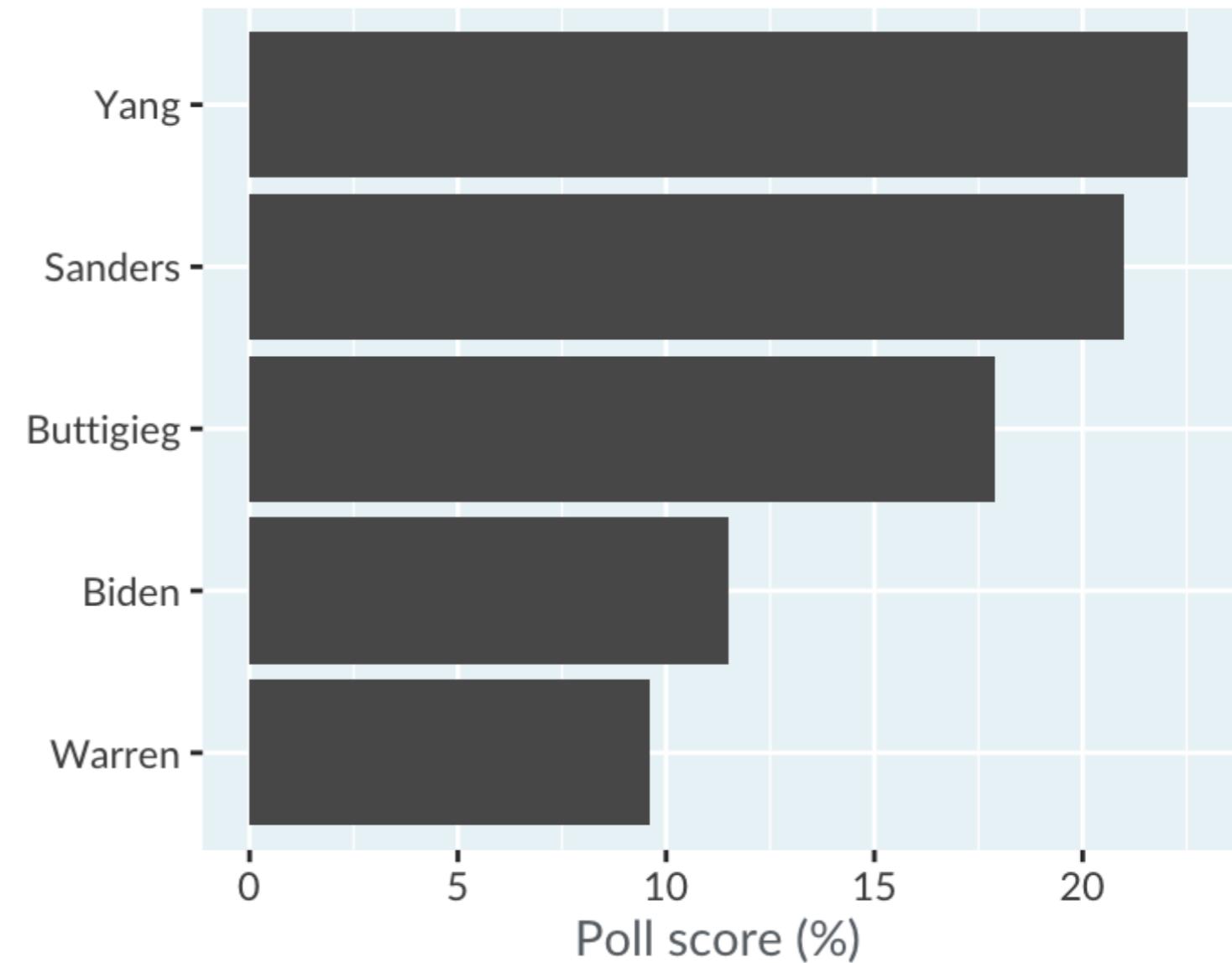
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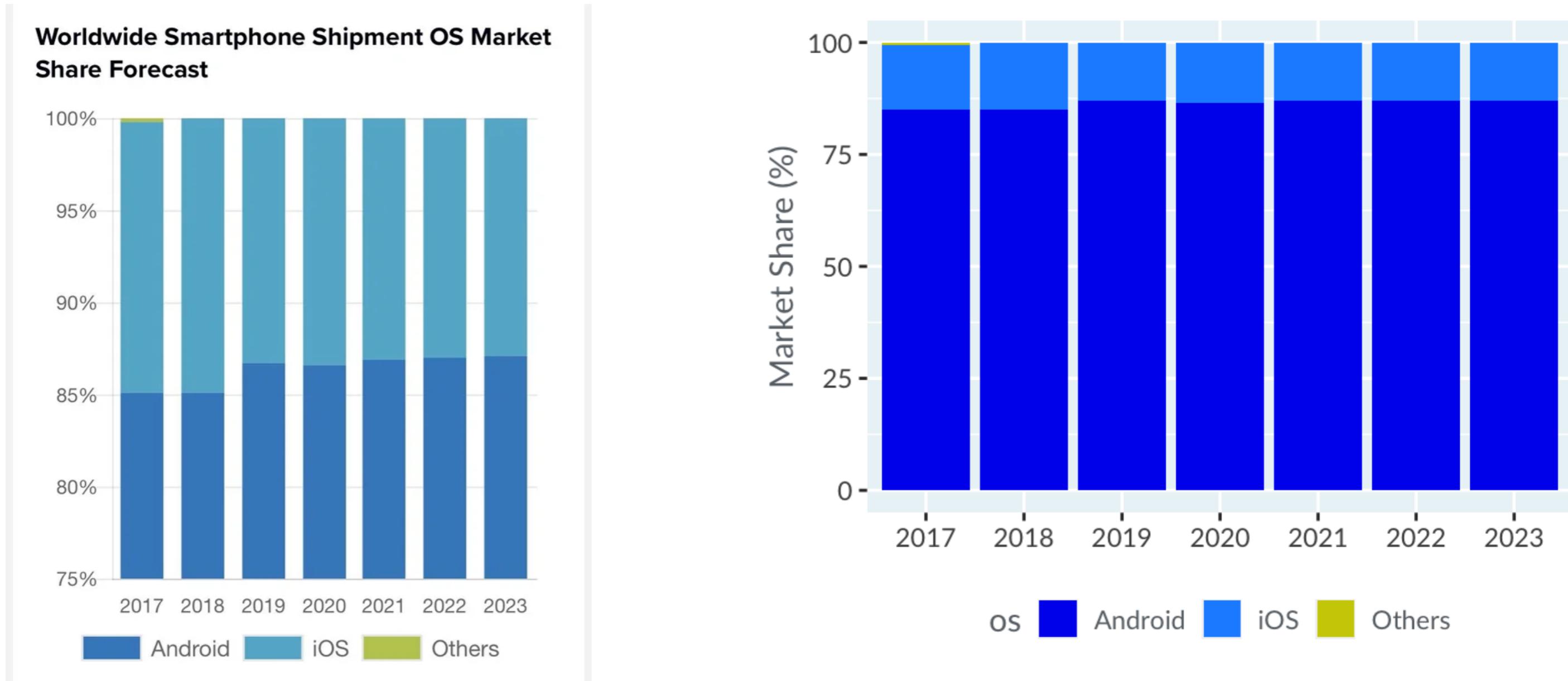
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Nonsense bar lengths



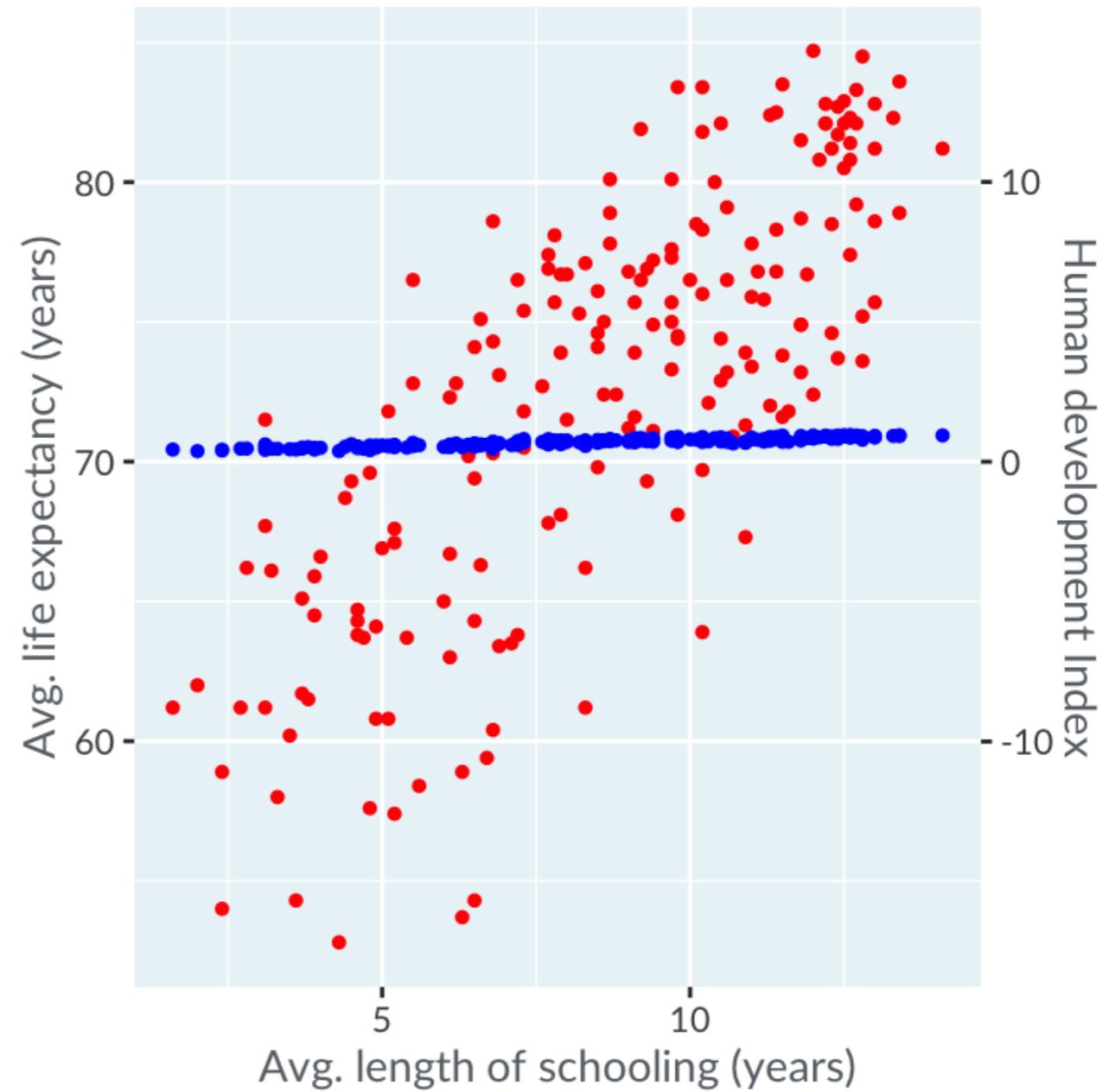
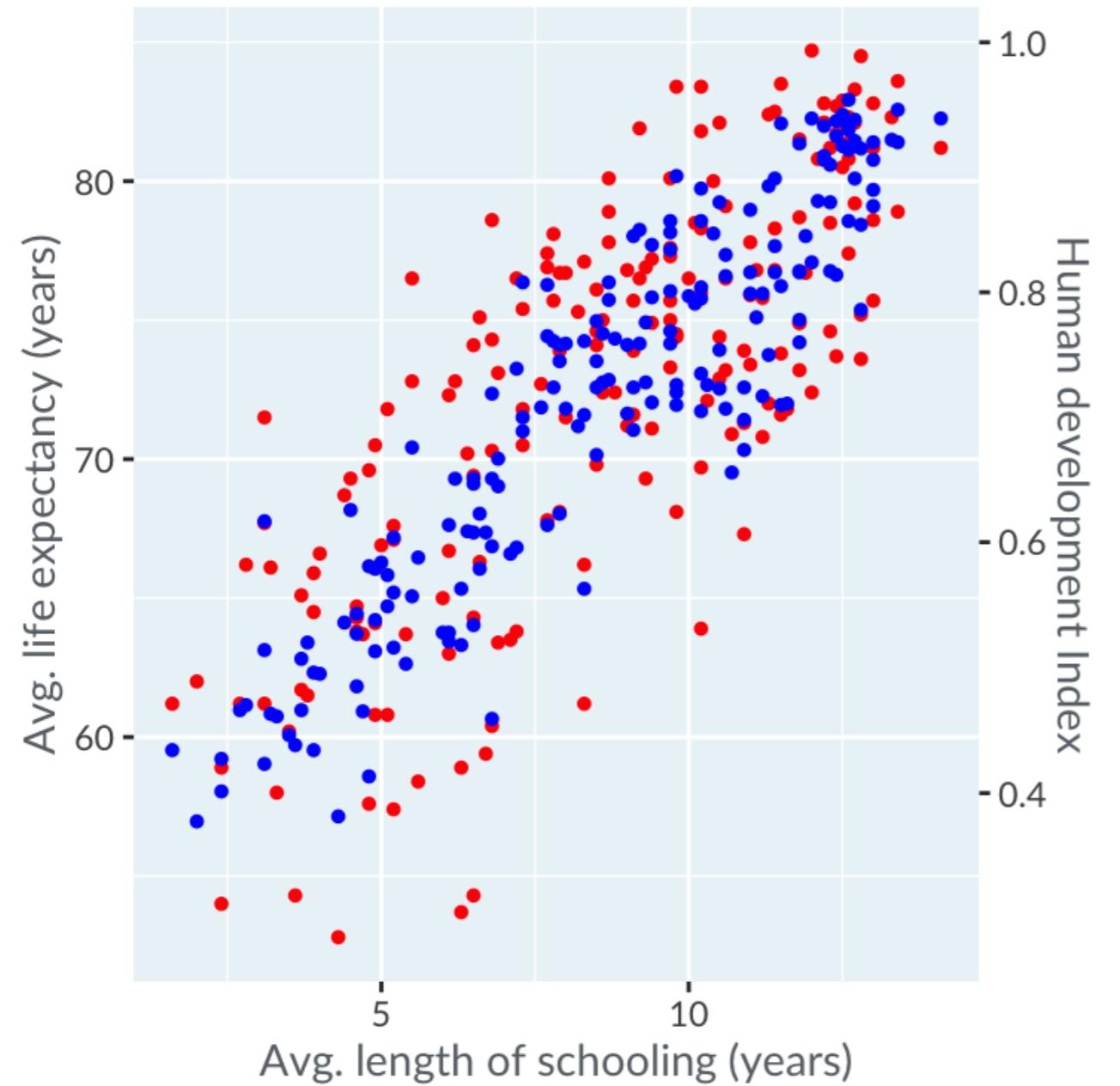
¹ https://www.reddit.com/r/dataisugly/comments/exewcc/thats Quite_a_large_15

The same applies to stacked bar plots

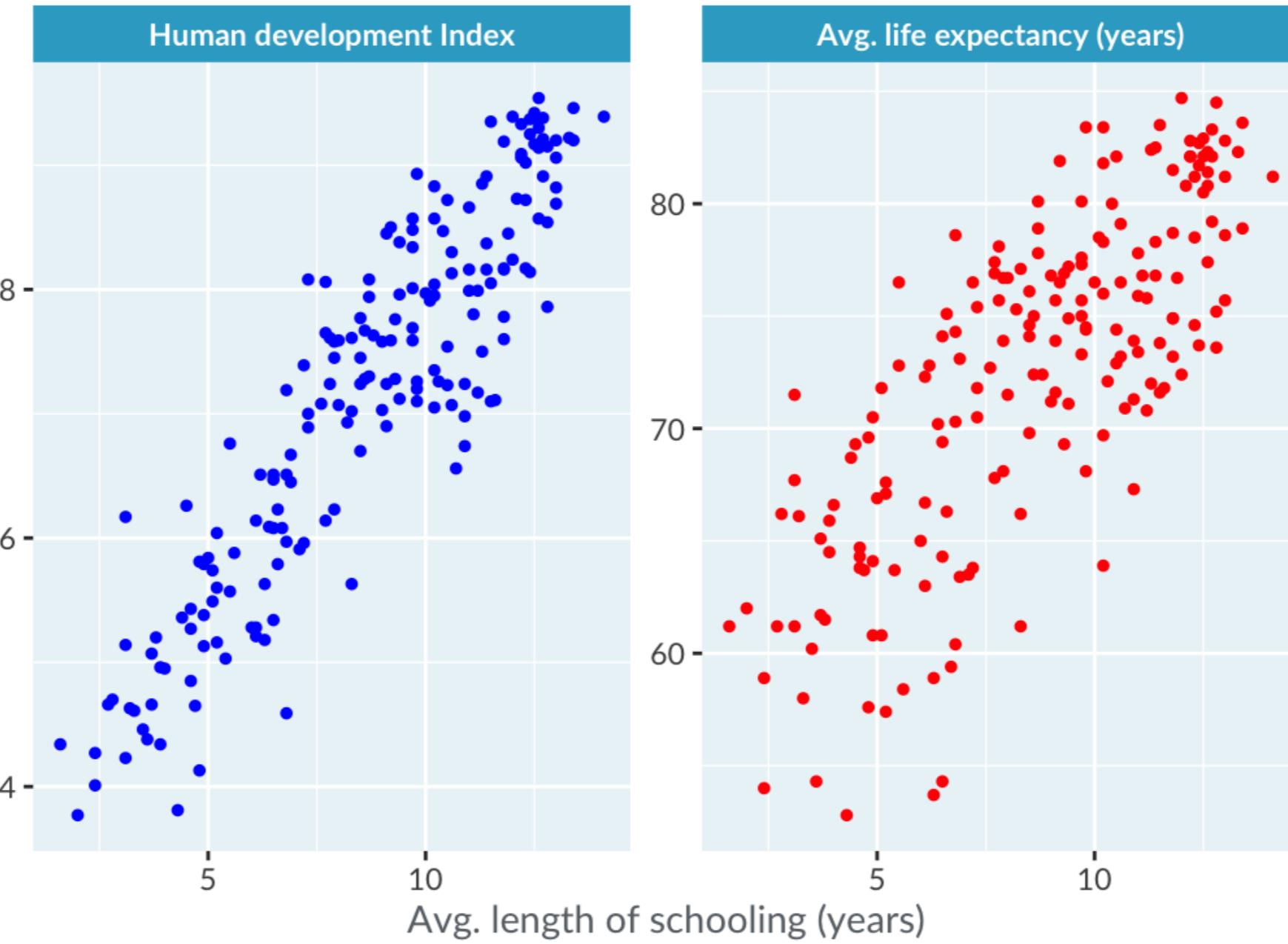


¹ https://www.reddit.com/r/dataisugly/comments/d76ixt/lets_make_13_vs_87_market_share_look_like_5050

Dual axes are misleading



Better to use multiple panels



Let's practice!

UNDERSTANDING DATA VISUALIZATION

Sensory overload

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Measures of a good visualization

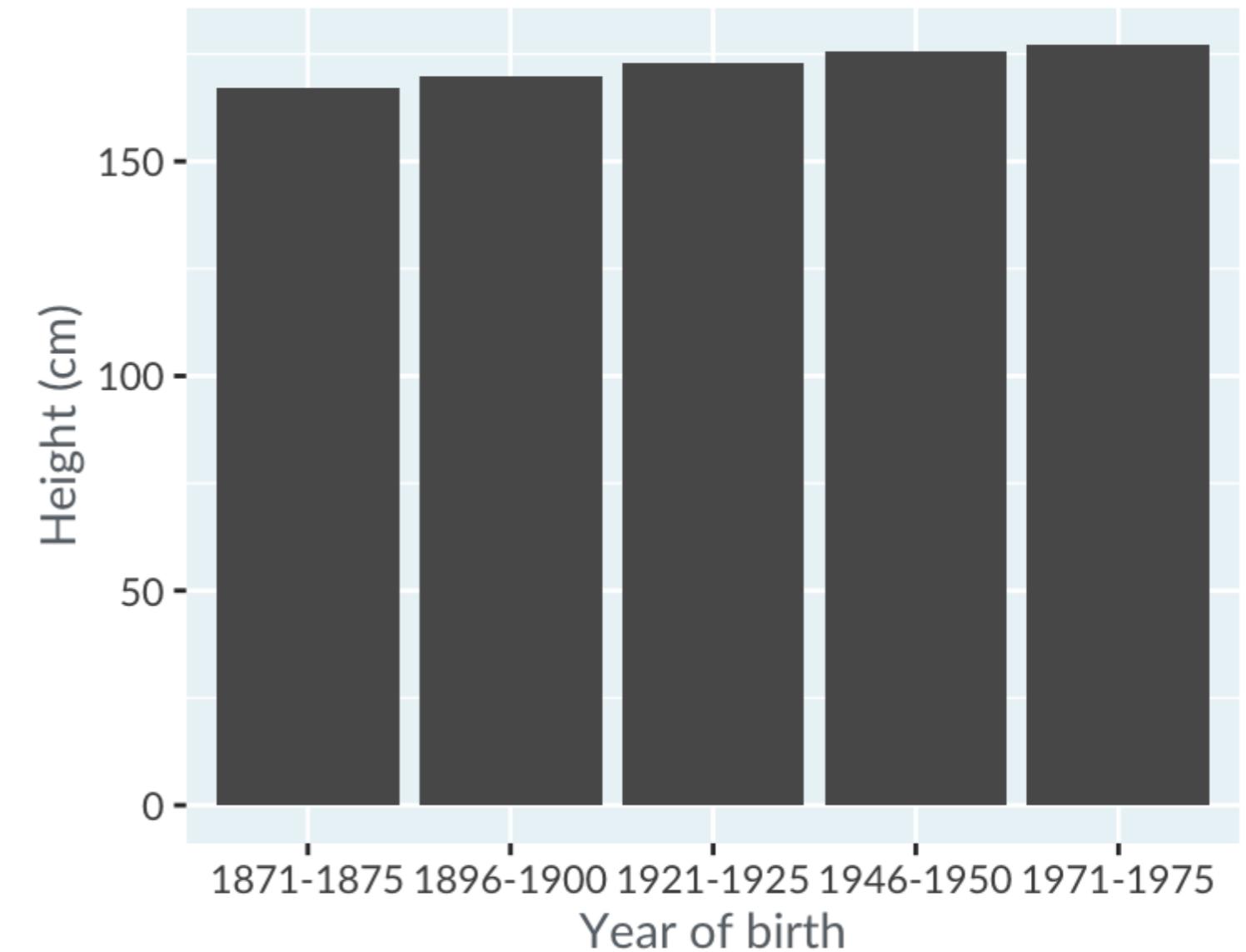
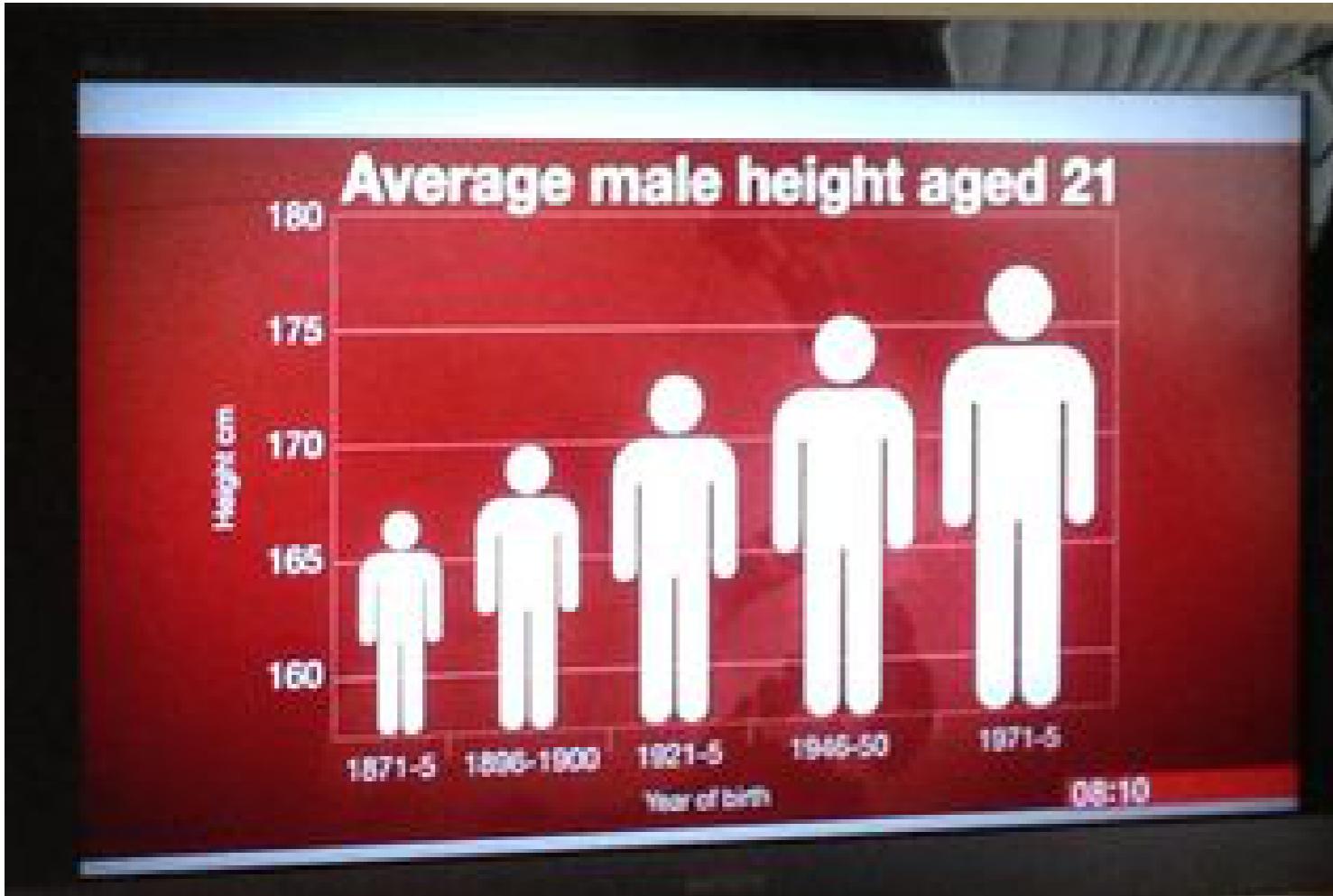
- How many interesting insights can your reader get from the plot?
- How quickly can they get those insights?

Chartjunk

Any element of the plot that distracts from the reader getting insight

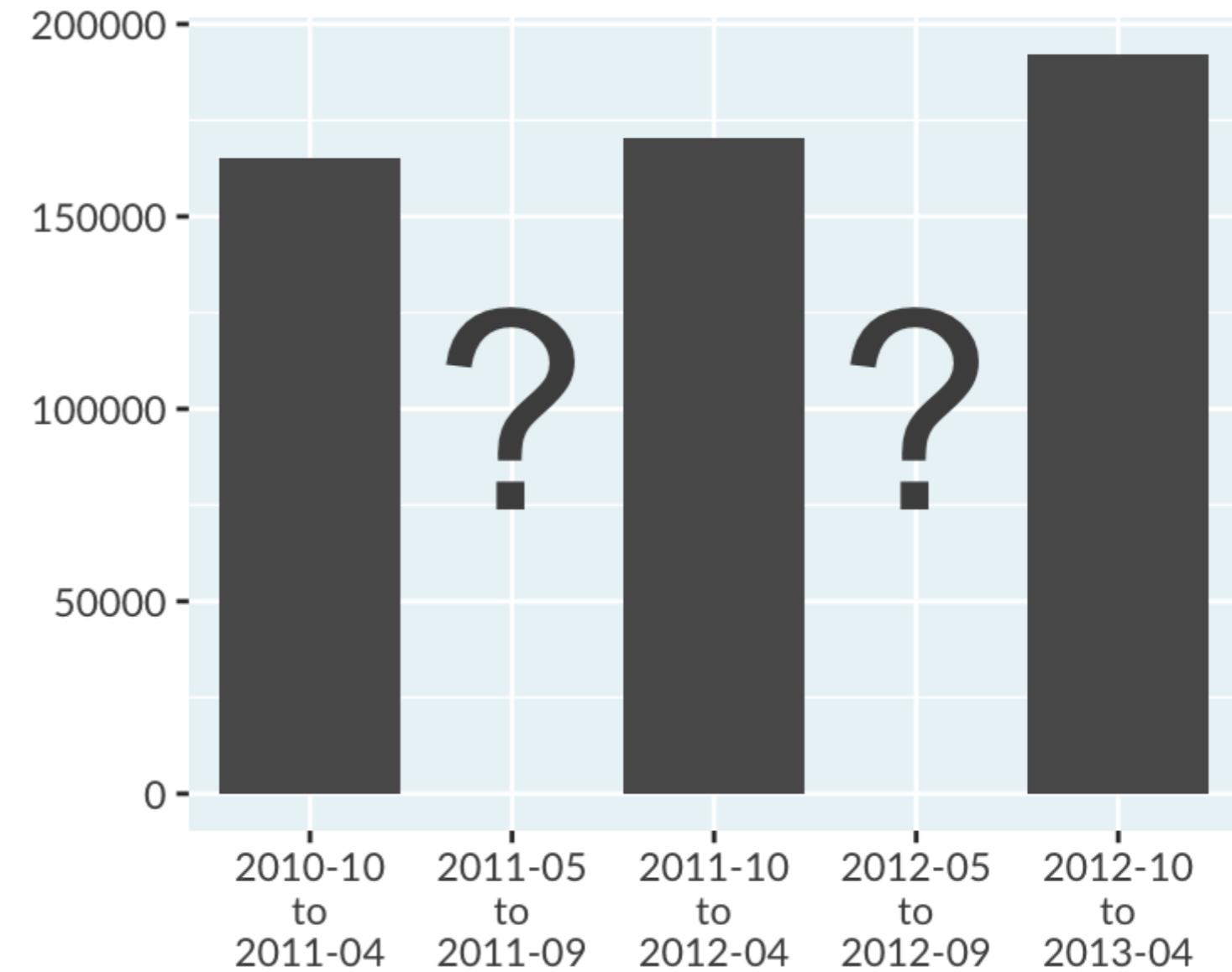
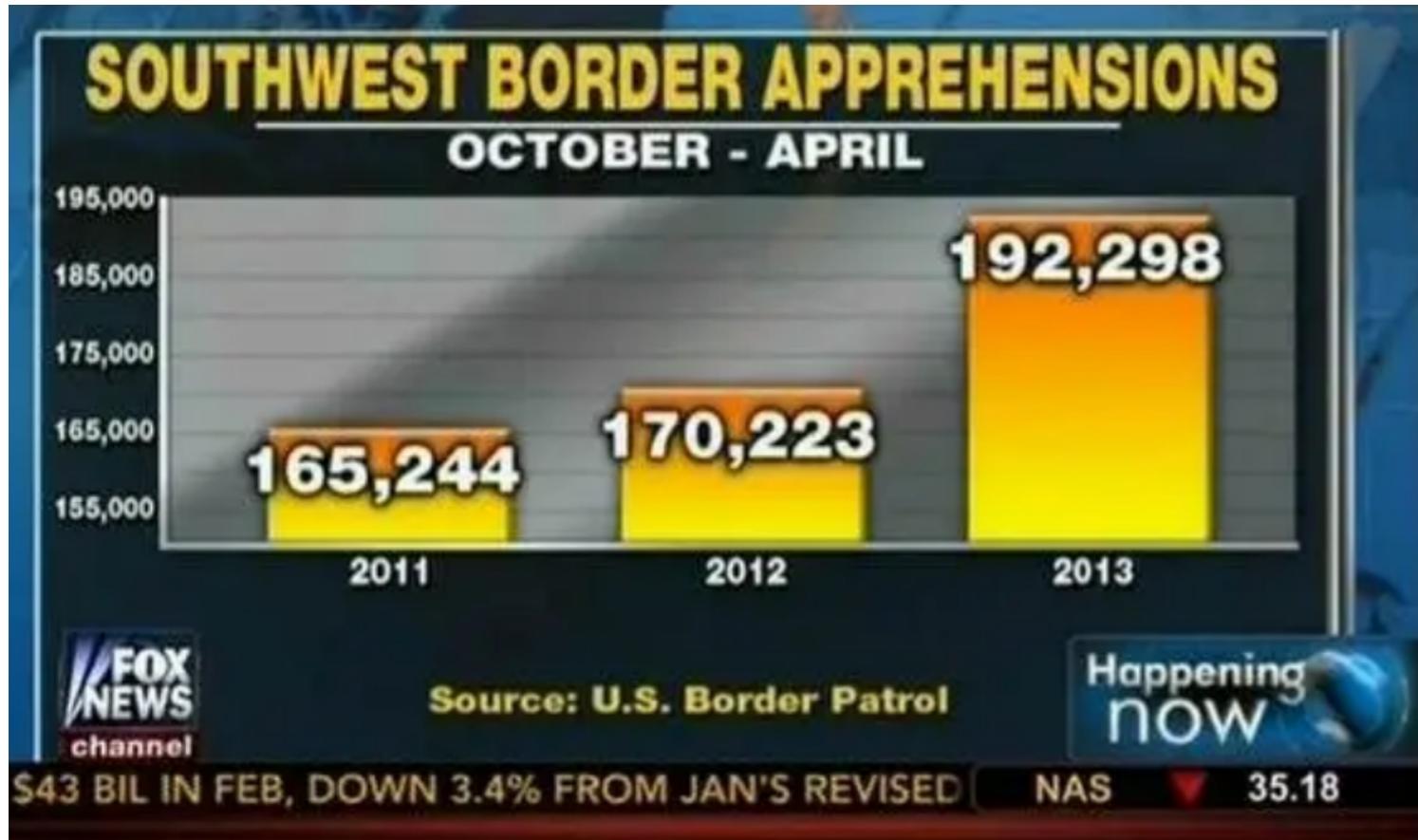
- Pictures
- Skeuomorphism: reflections, shadows, etc.
- Extra dimensions
- Ostentatious colors or lines

Pictures



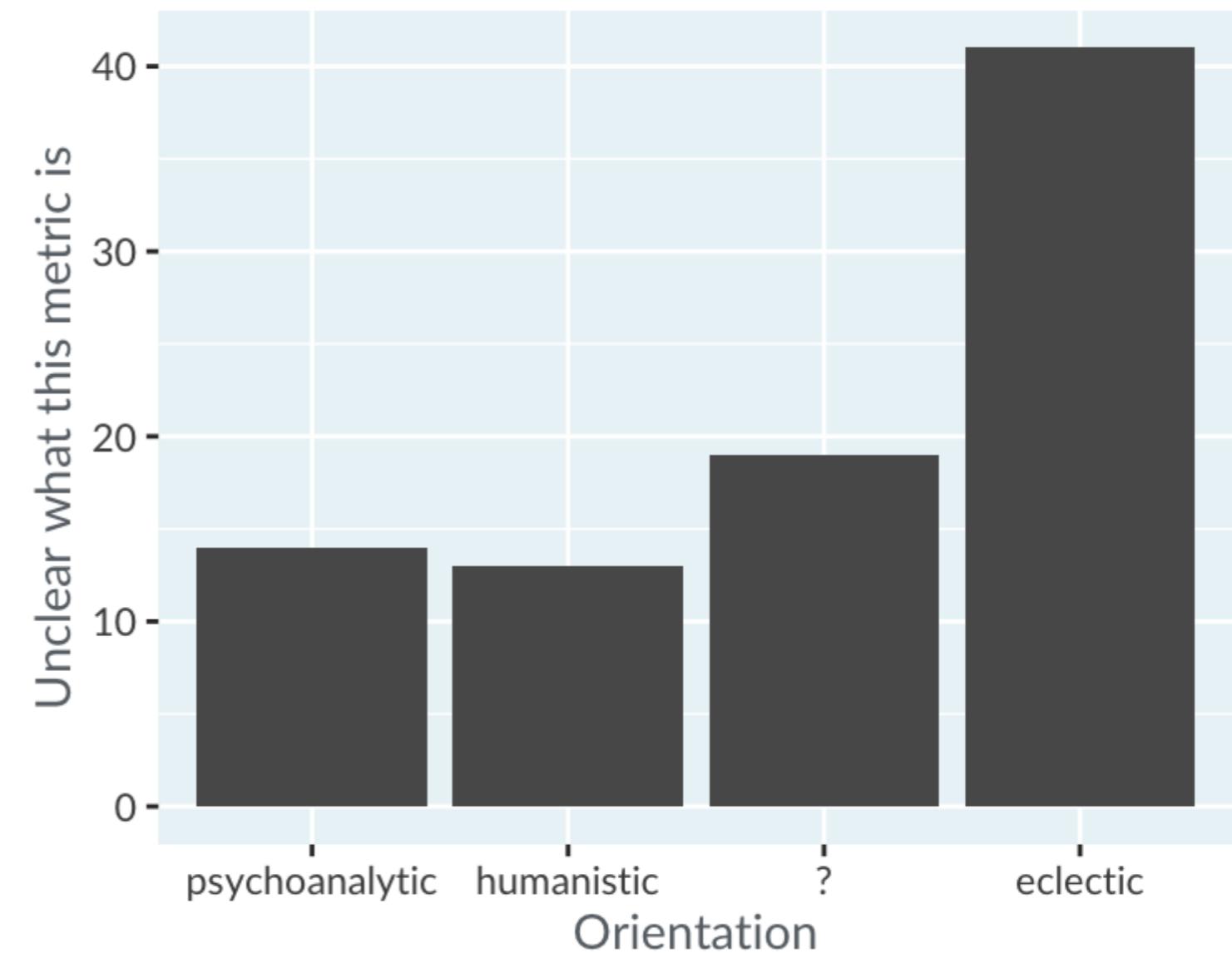
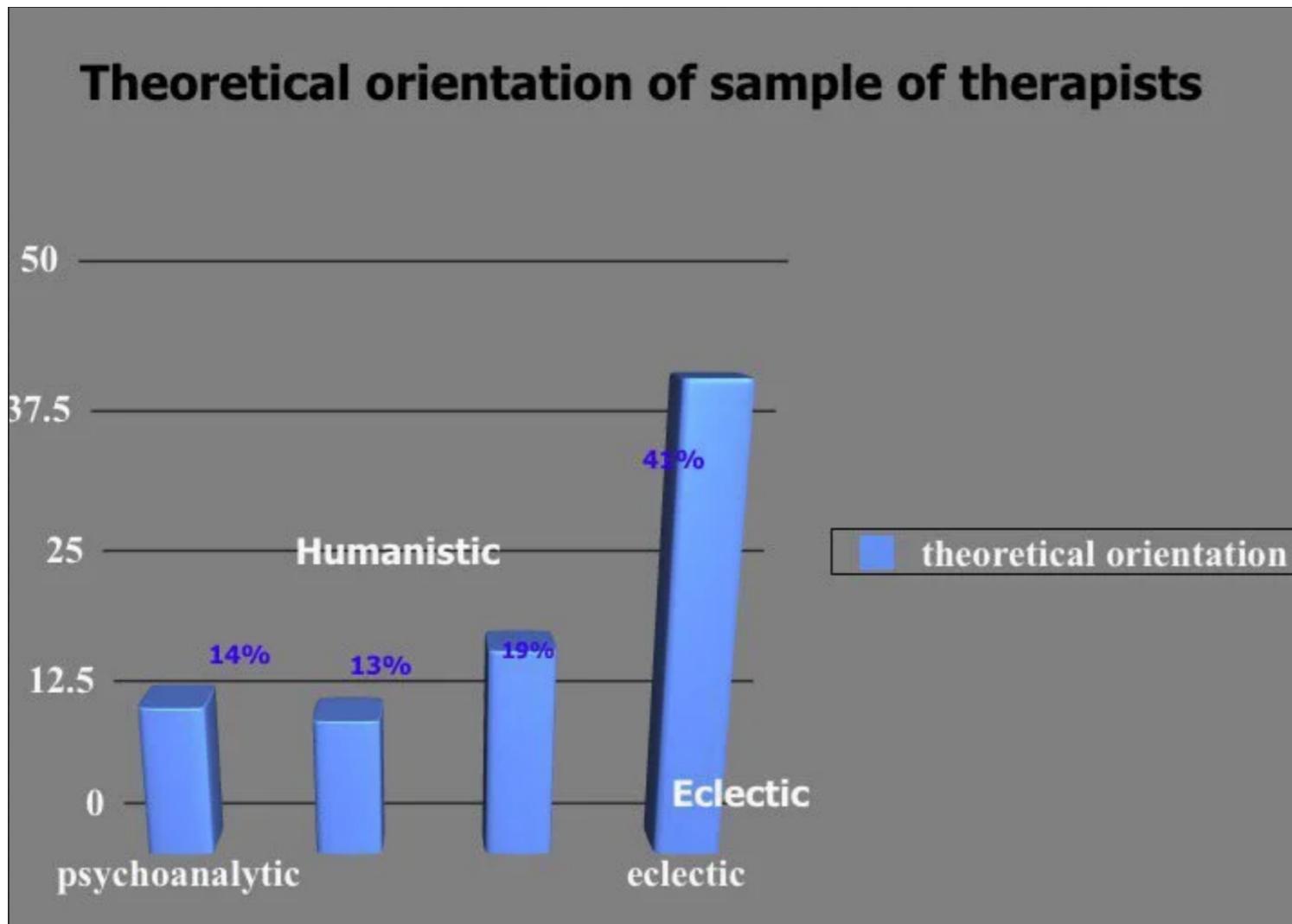
¹ https://junkcharts.typepad.com/junk_charts/2013/09/the-incredibly-expanding-male.html

Skeuomorphism



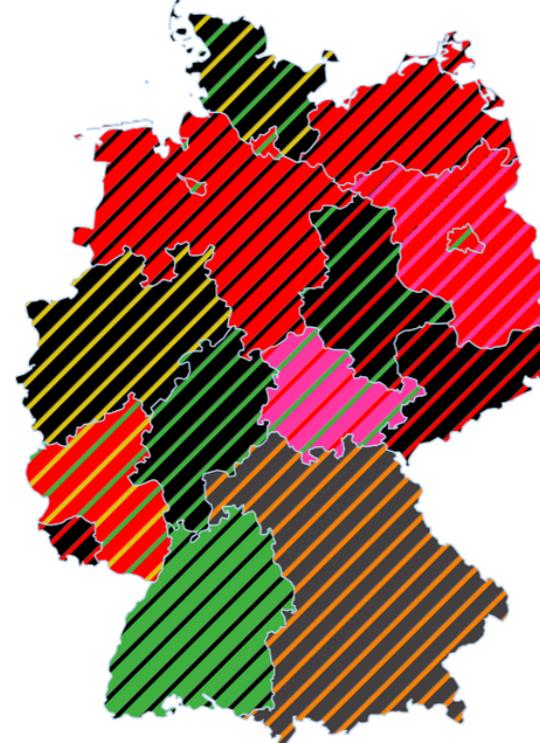
¹ <https://www.mediamatters.org/fox-news/fox-news-newest-dishonest-chart-immigration-enforcement>

Extra dimensions

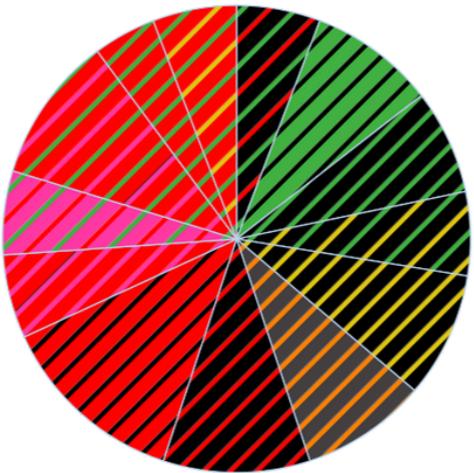


¹ https://www.reddit.com/r/dataisugly/comments/dh6yra/an_actual_graph_presented_in_my_psychology

Ostentatious colors and lines



SPD + CDU	9	CDU + GRÜNE	5
CDU + SPD	7	SPD + FDP + GRÜNE	4
SPD + LINKE + GRÜNE	7	CDU + SPD + GRÜNE	4
GRÜNE + CDU	6	SPD + LINKE	4
CSU + FW	6	LINKE + SPD + GRÜNE	4
CDU + FDP	6	CDU + GRÜNE + FDP	4
		SPD + Grüne + FDP	
		SPD + Grüne + Linke	



Created with mapchart.net ®

CDU+SPD
CDU+Grüne
SPD+Grüne
CDU+FDP
SPD+Linke
CSU+FW
CDU+SPD+Grüne
CDU+Grüne+FDP
SPD+Grüne+FDP
SPD+Grüne+Linke

¹ https://www.reddit.com/r/dataisugly/comments/cyhle4/wikipedias_image_of_the_distribution_of_seats_in/ ² <https://imgur.com/y27mRLj>

Let's practice!

UNDERSTANDING DATA VISUALIZATION

Congratulations

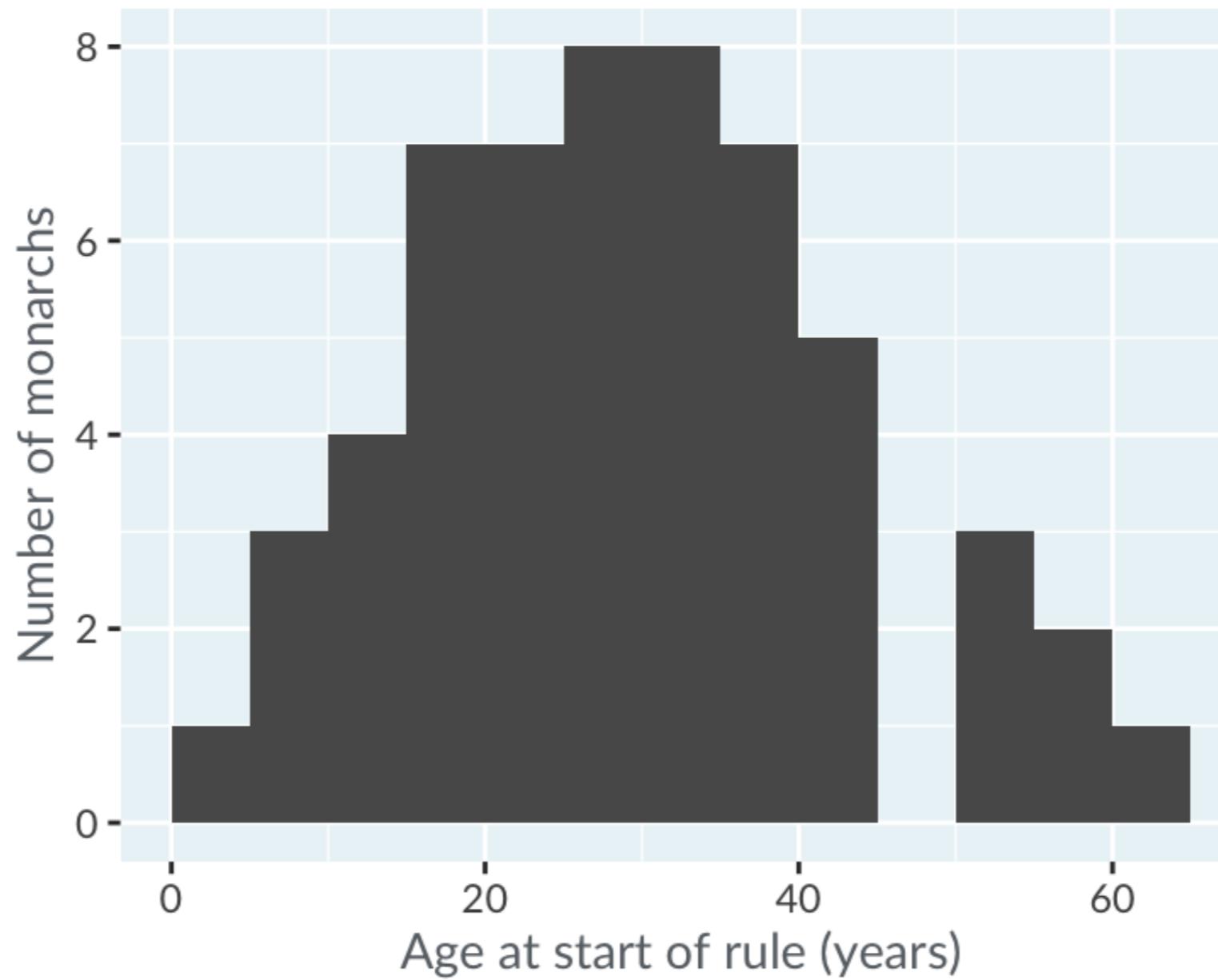
UNDERSTANDING DATA VISUALIZATION



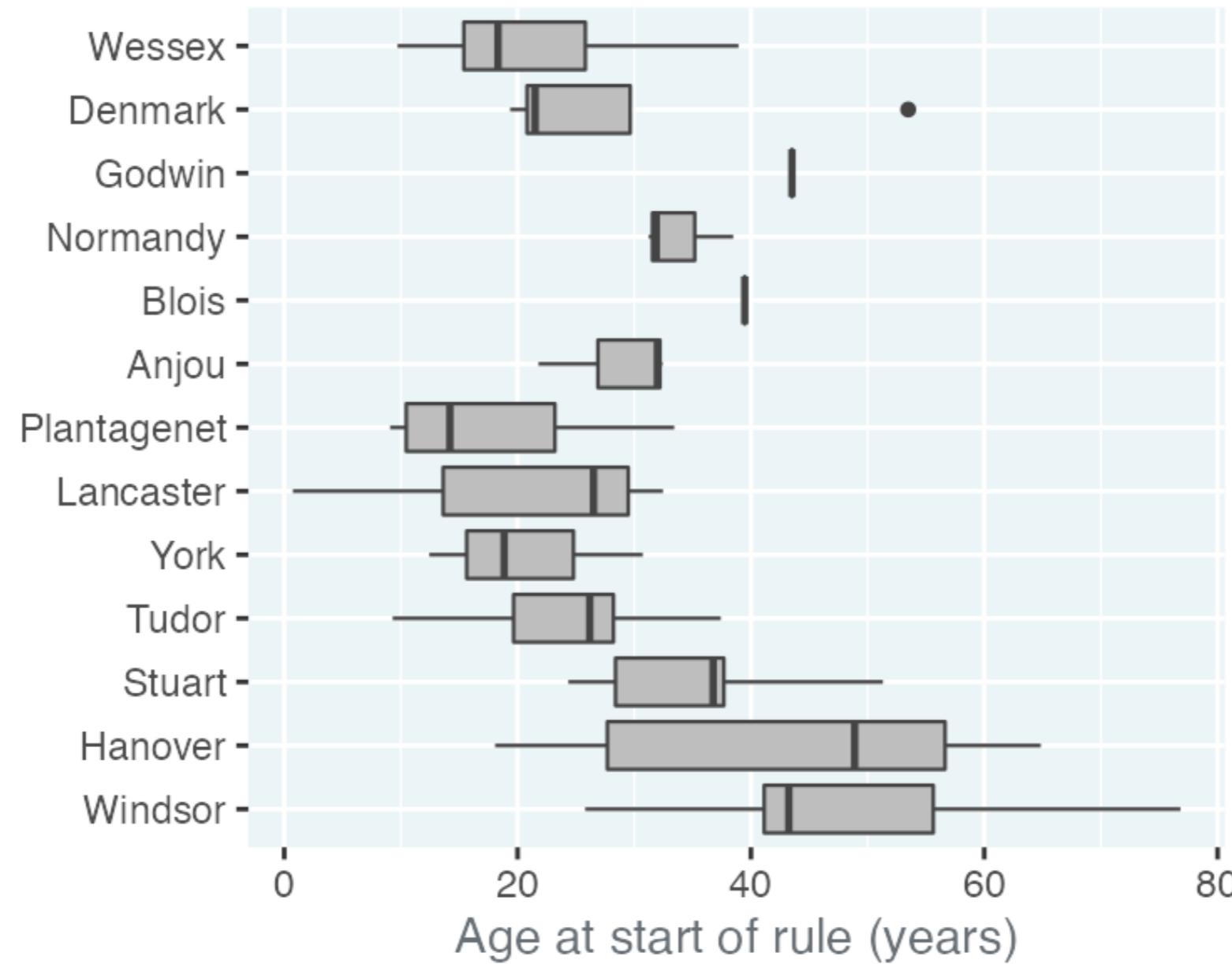
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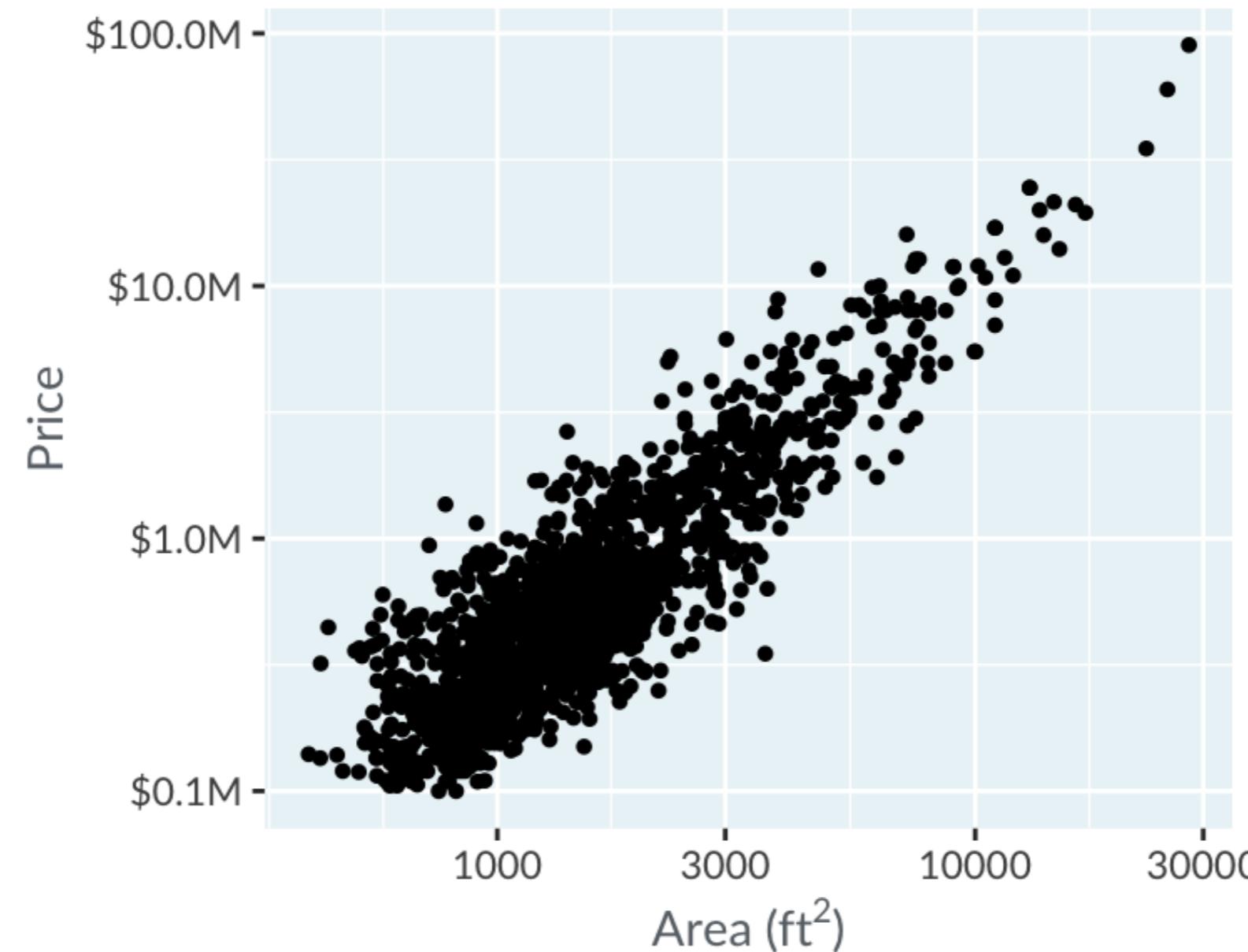
Histograms: show a distribution



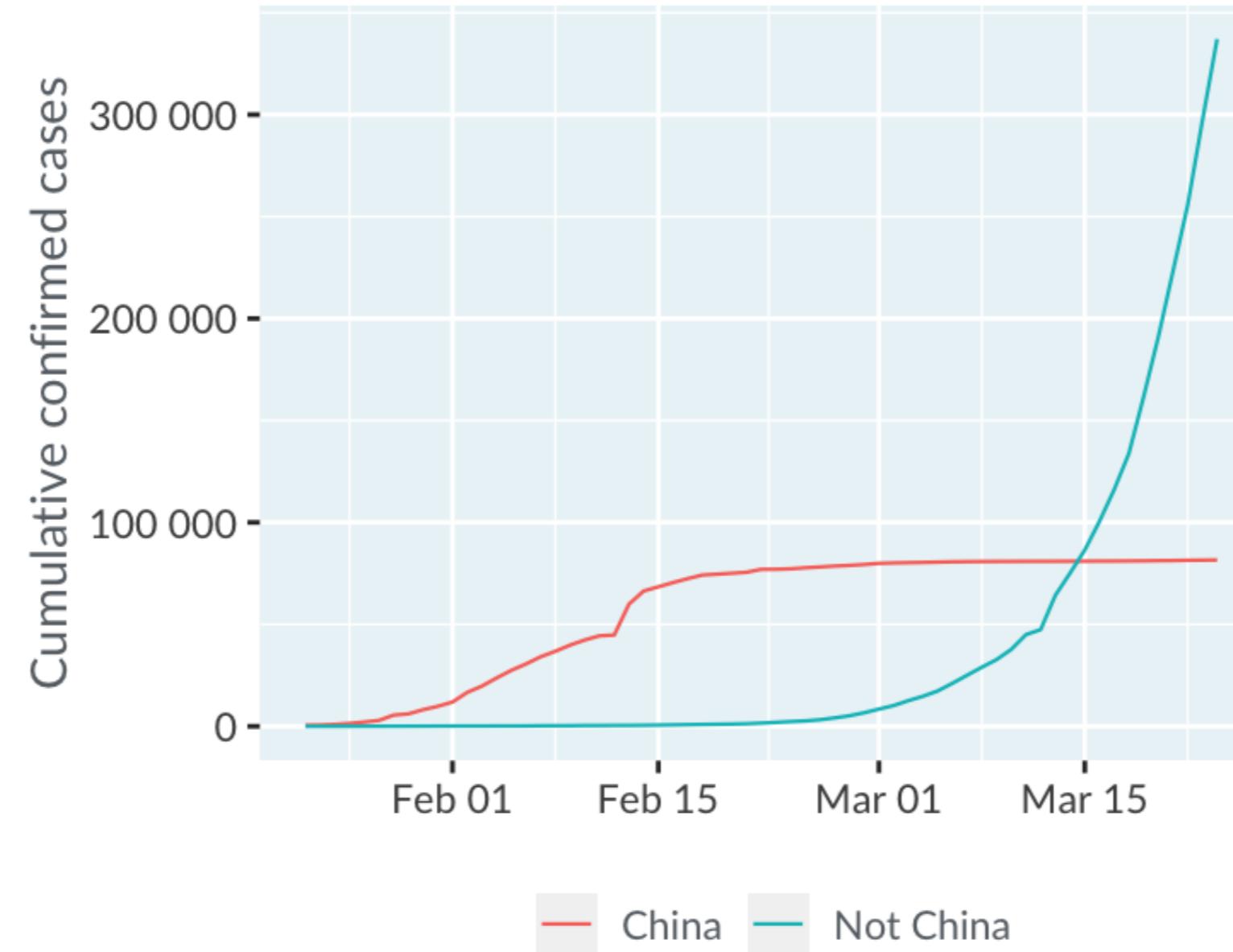
Box plots: show lots of distributions



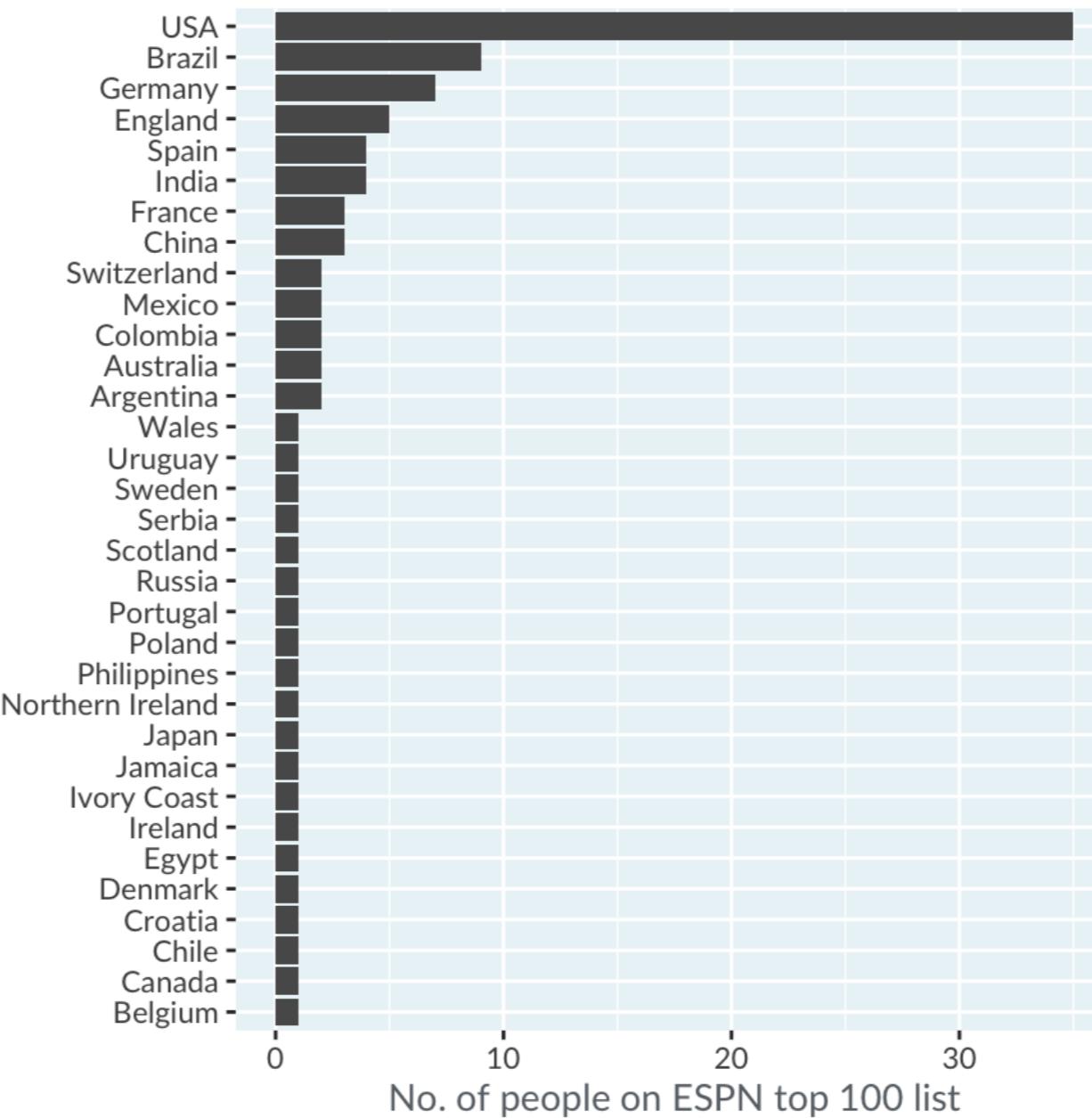
Scatter plots: compare two numeric variables



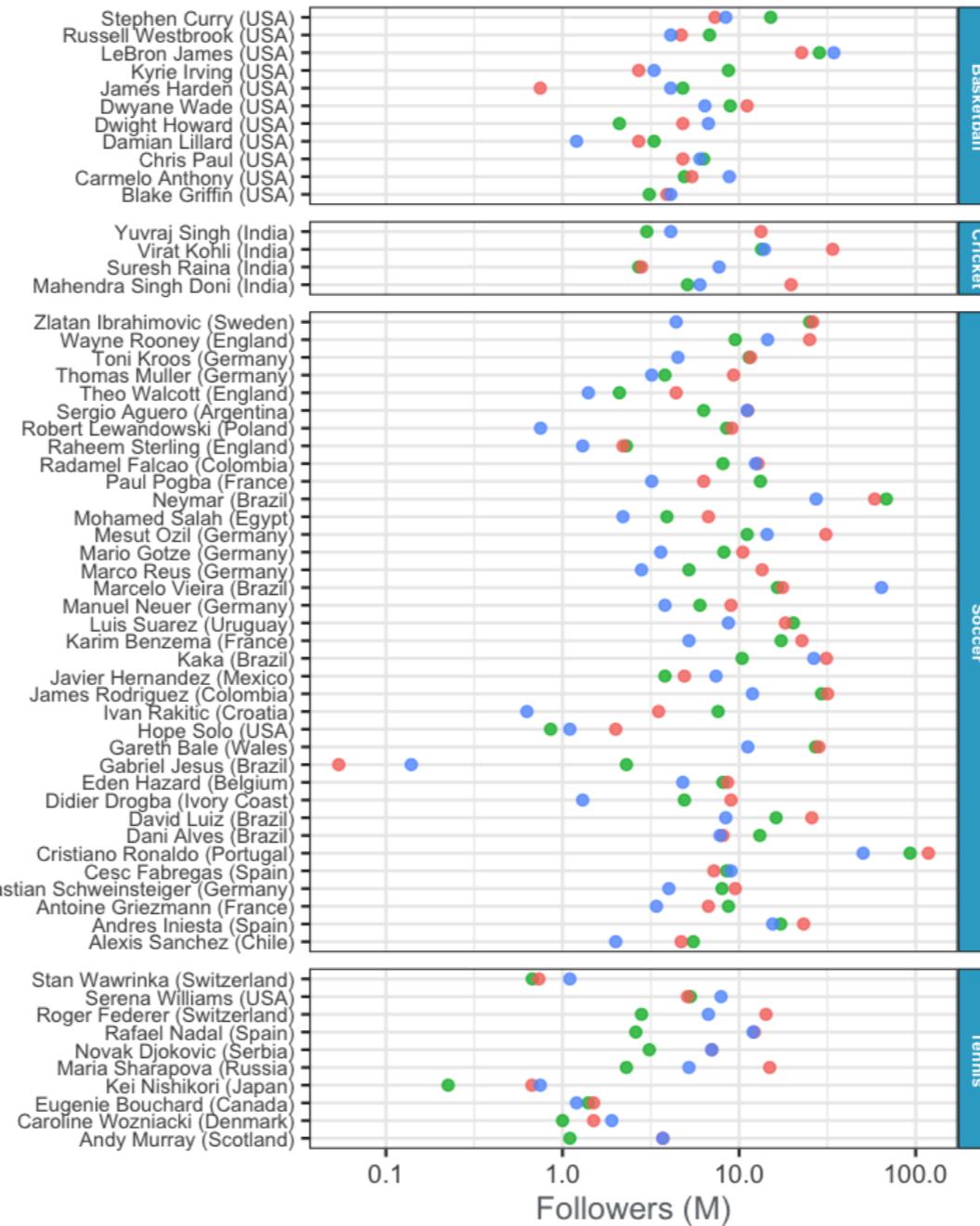
Line plots: show trends over time



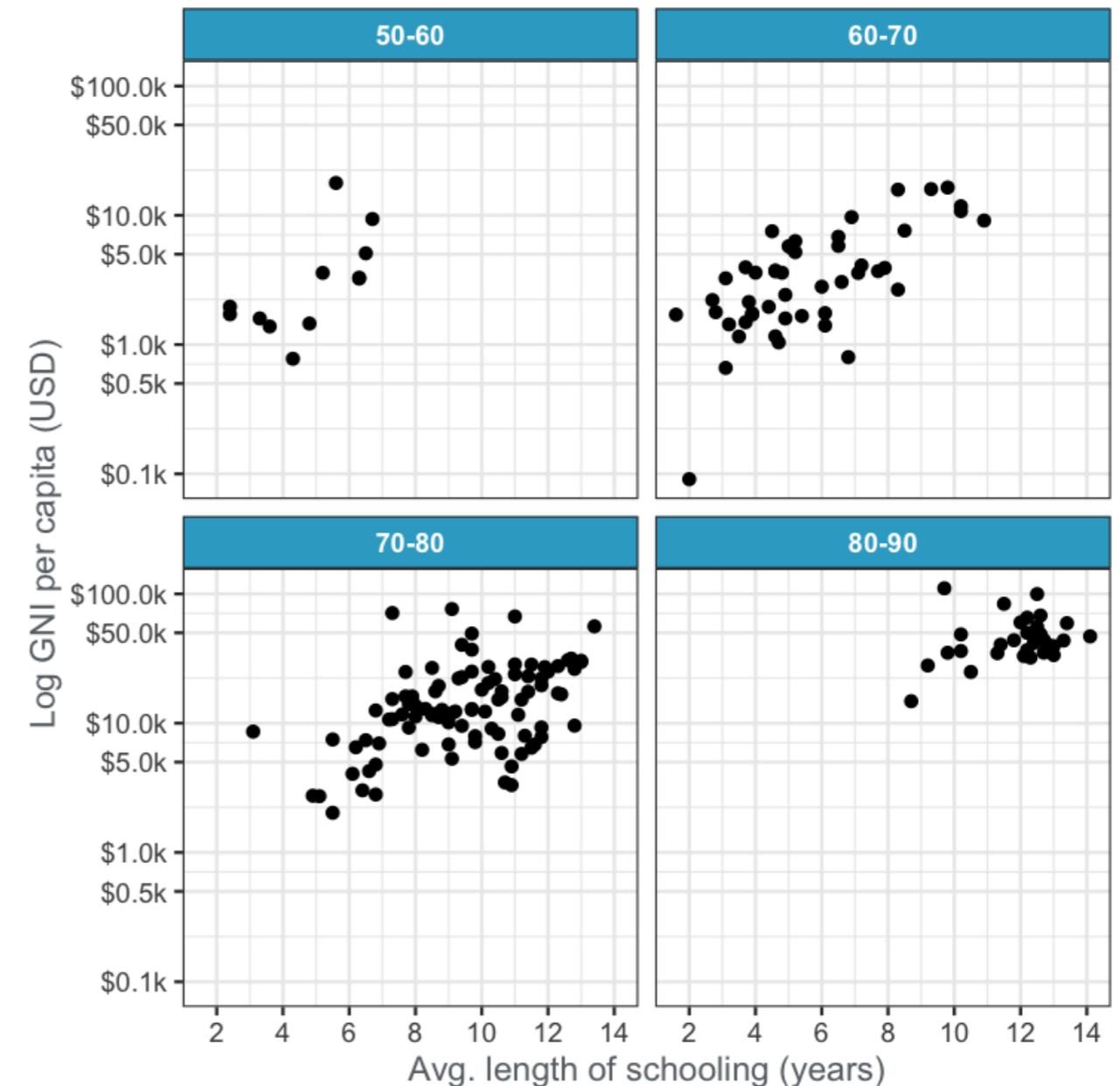
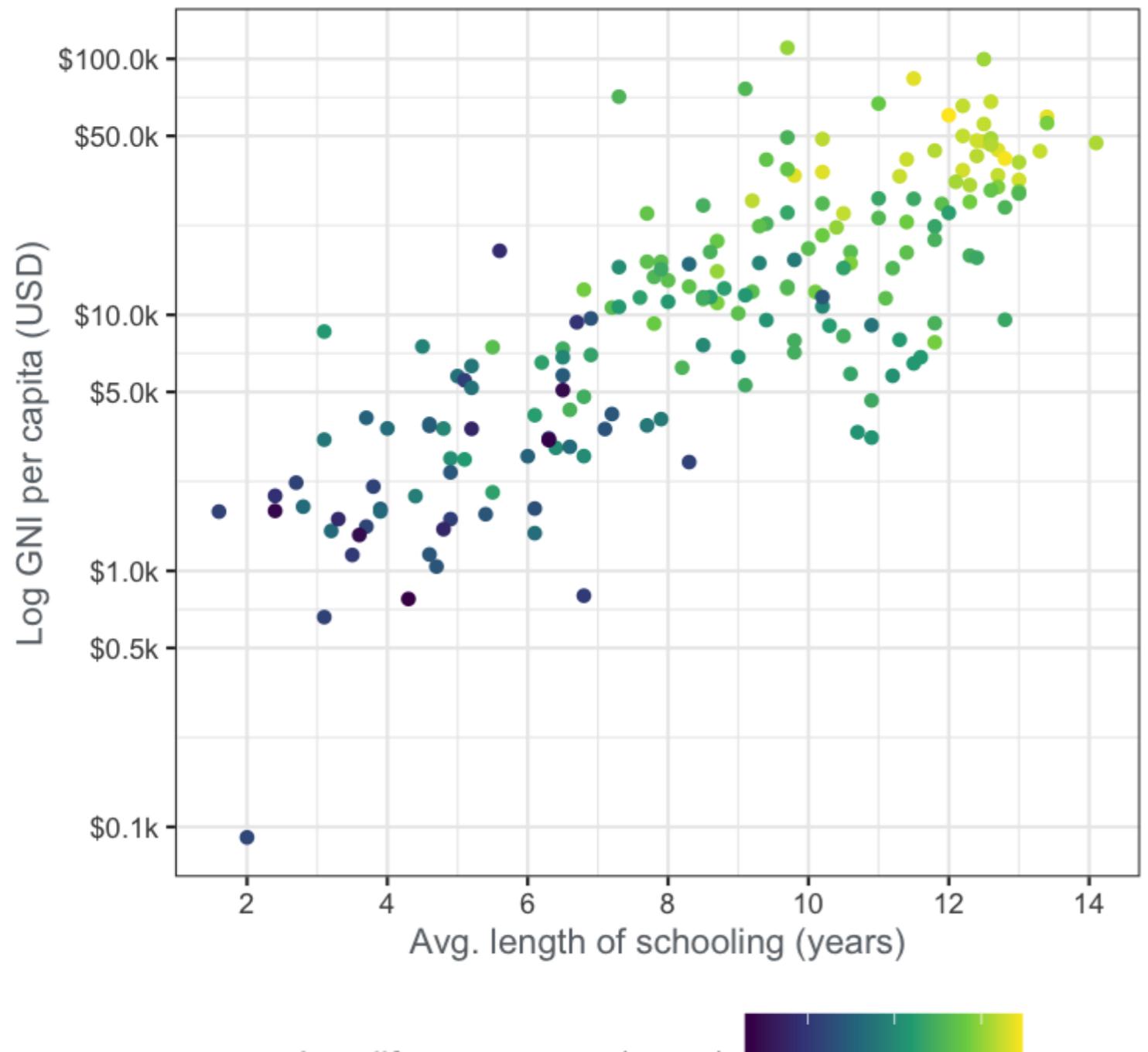
Bar plots: show counts by category



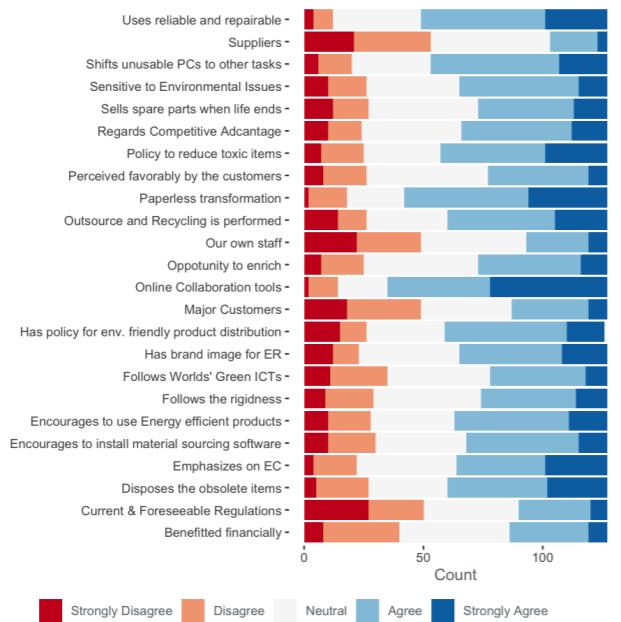
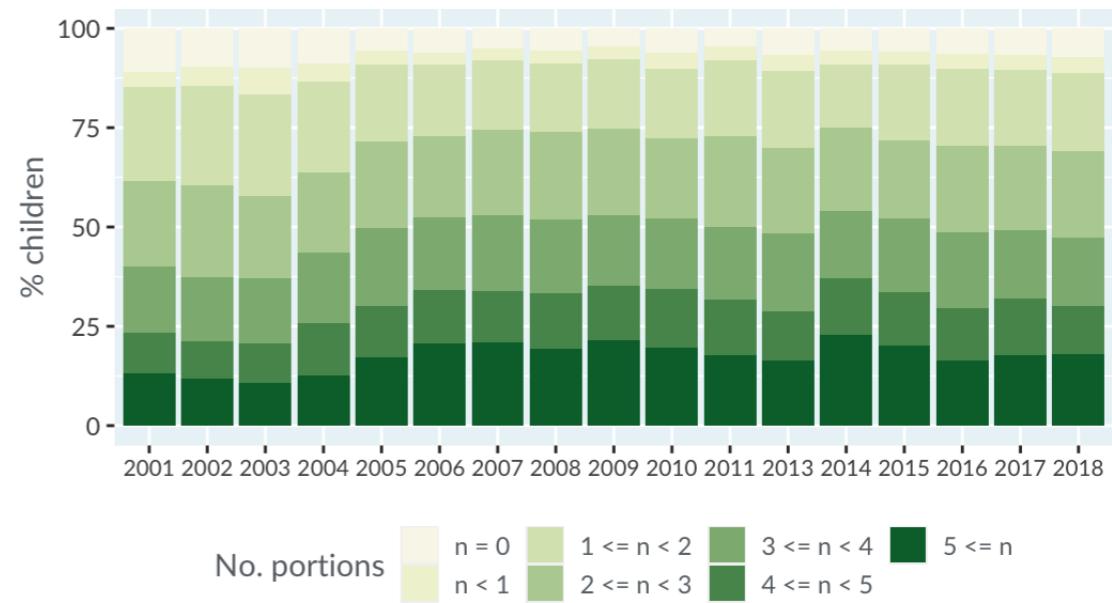
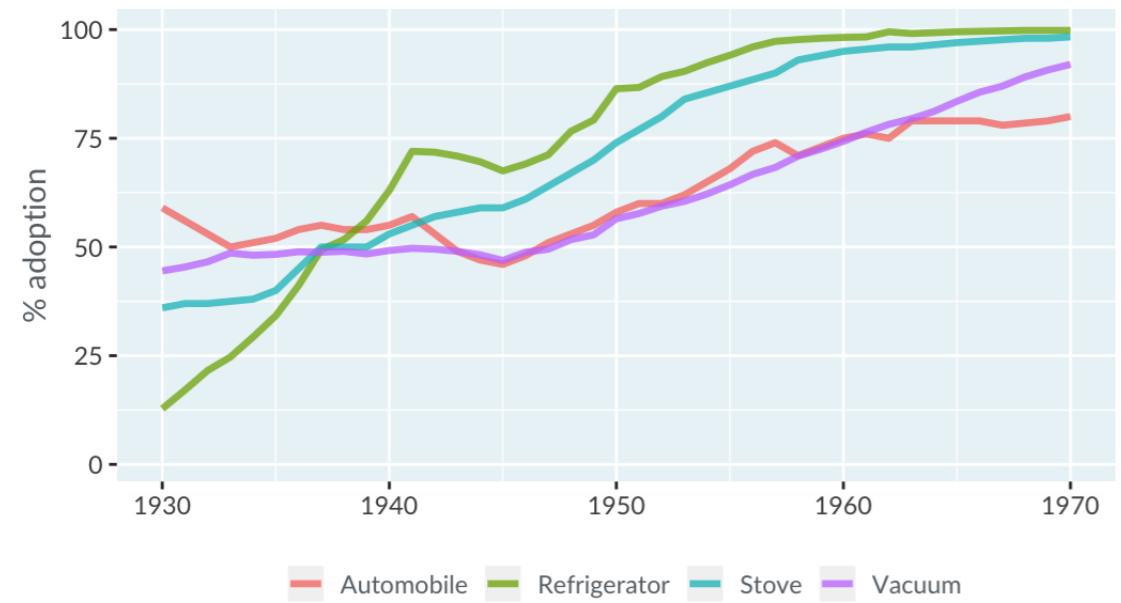
Dot plots: show log scale metrics by category



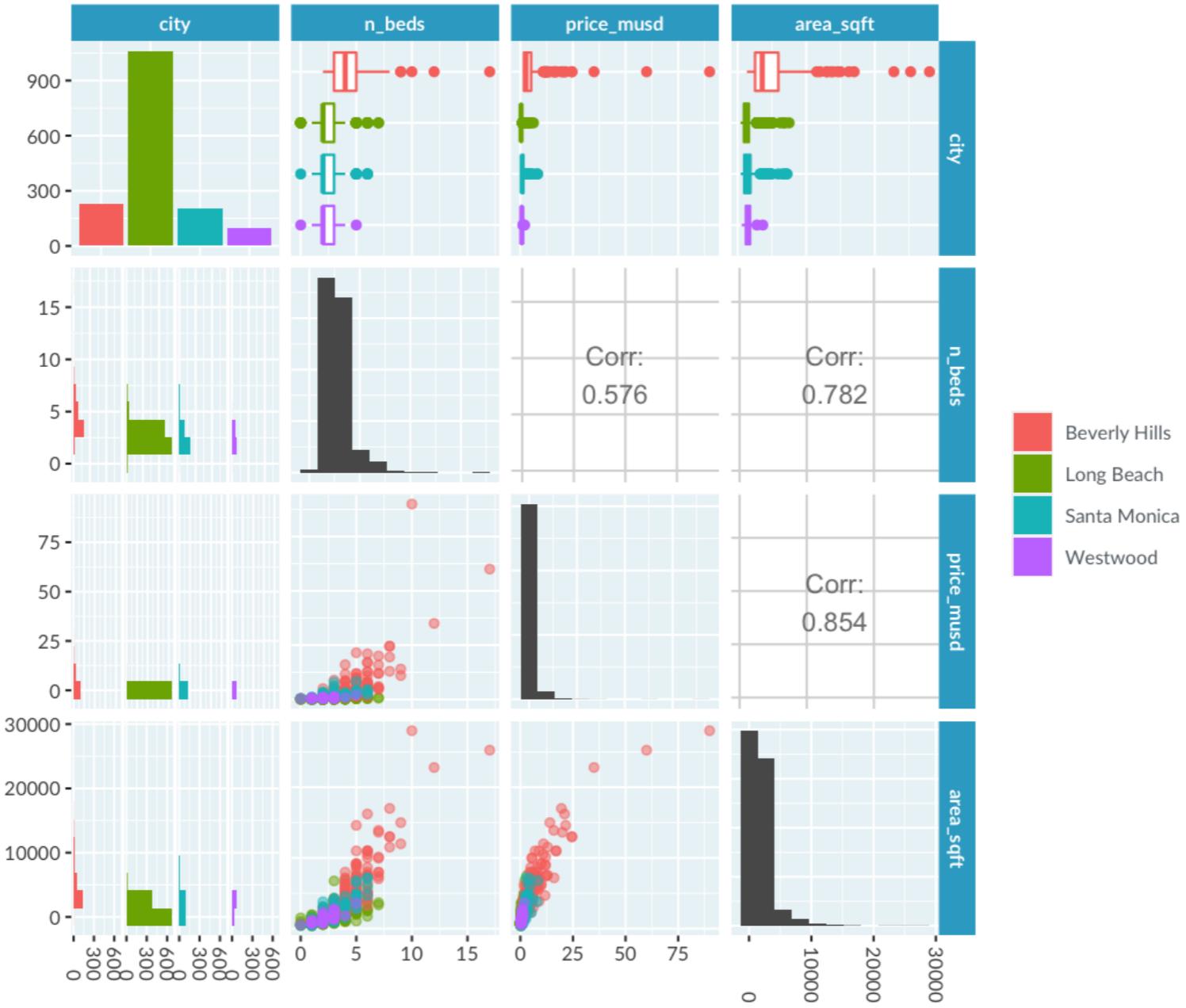
Extra dimensions



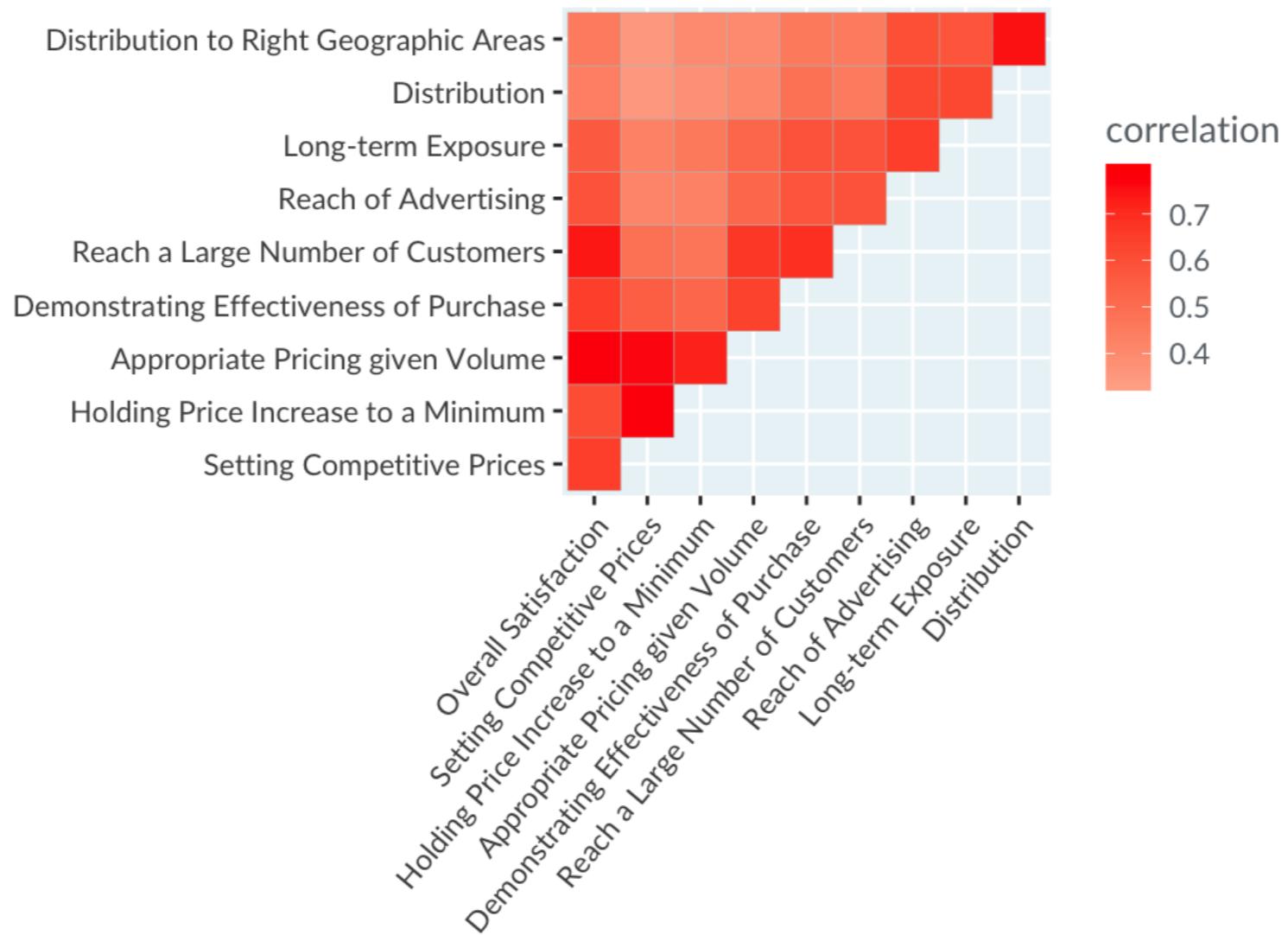
3 types of color scale



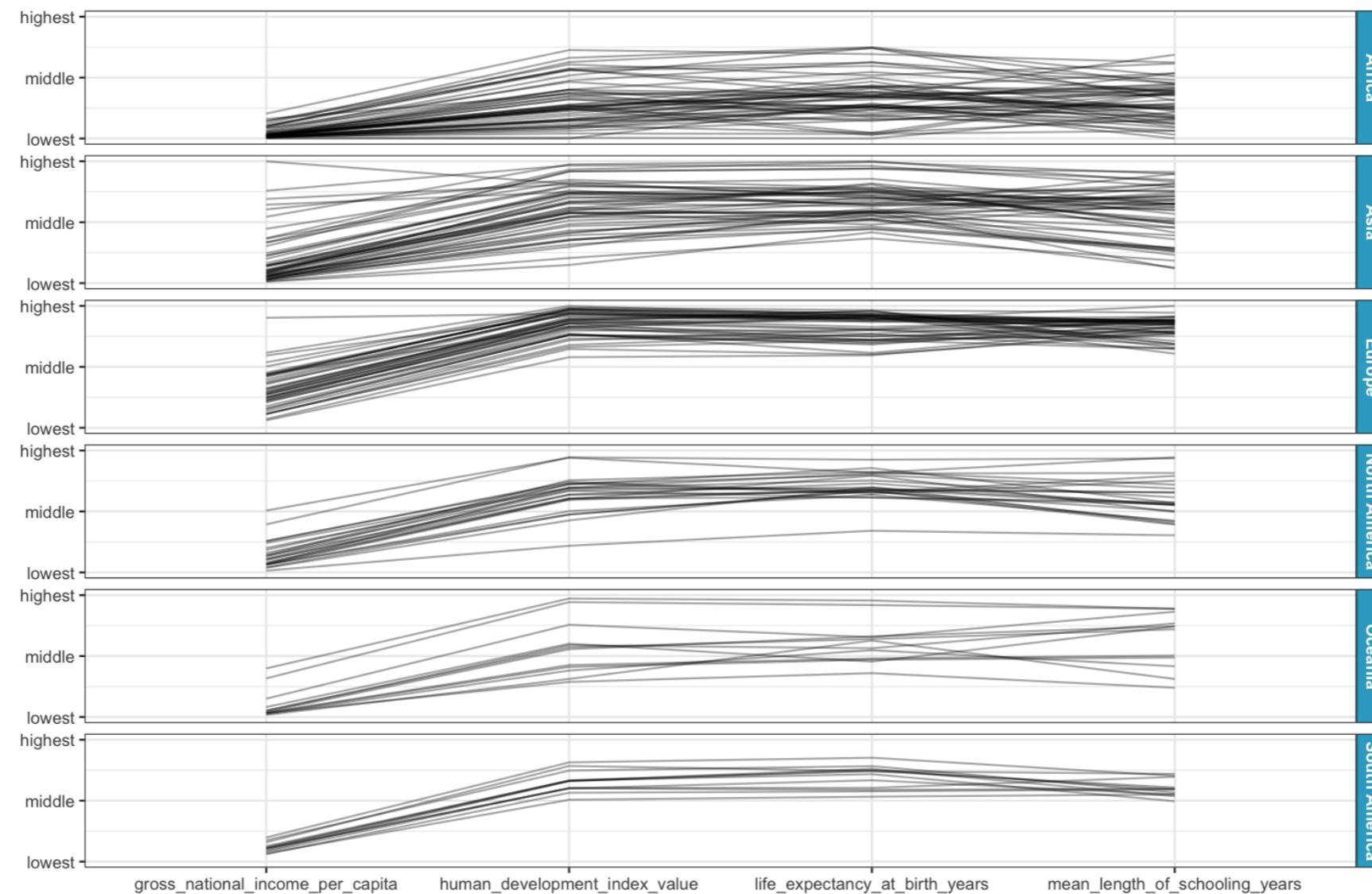
Pair plot: compare many variables



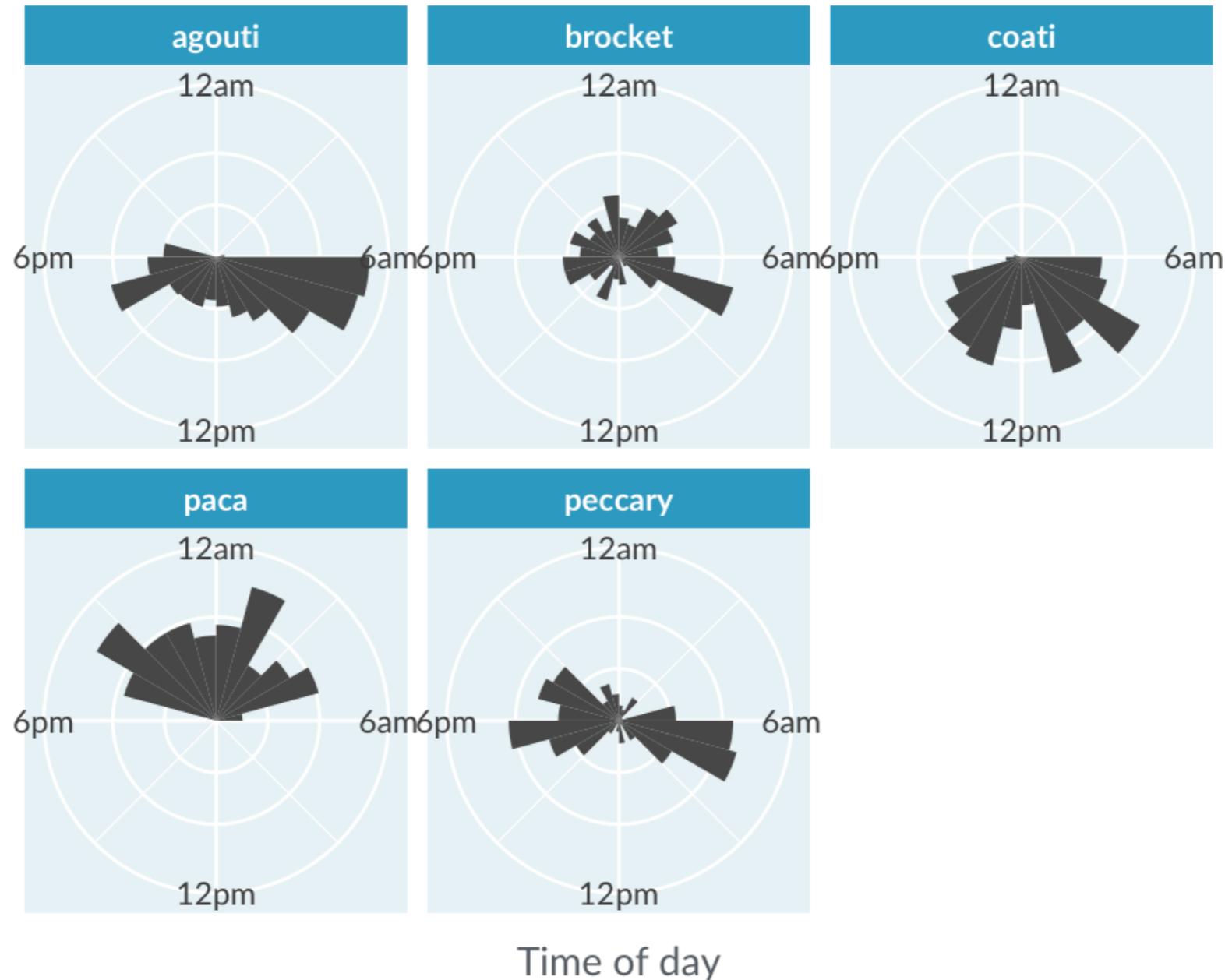
Correlation heatmap: show related variables



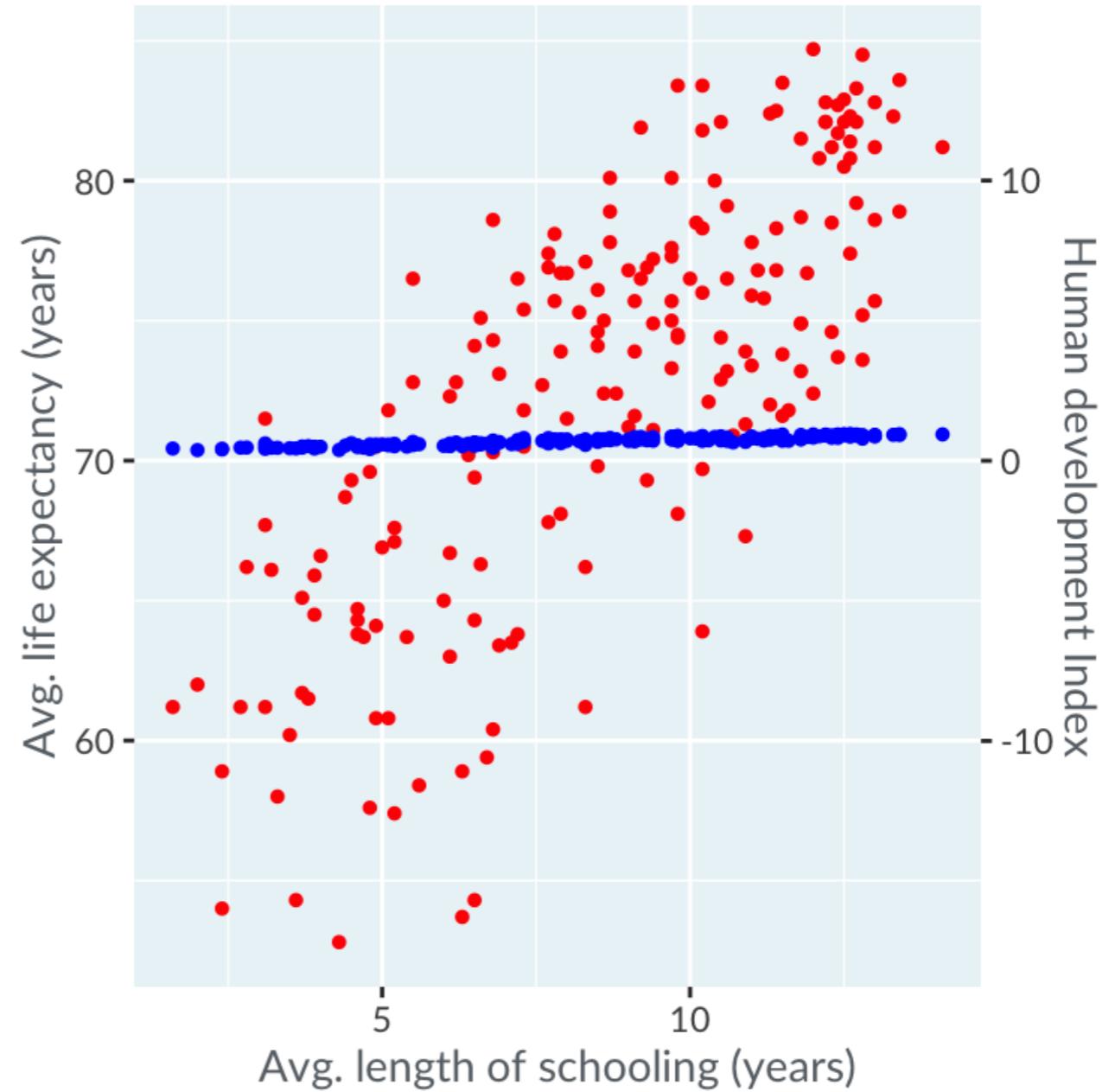
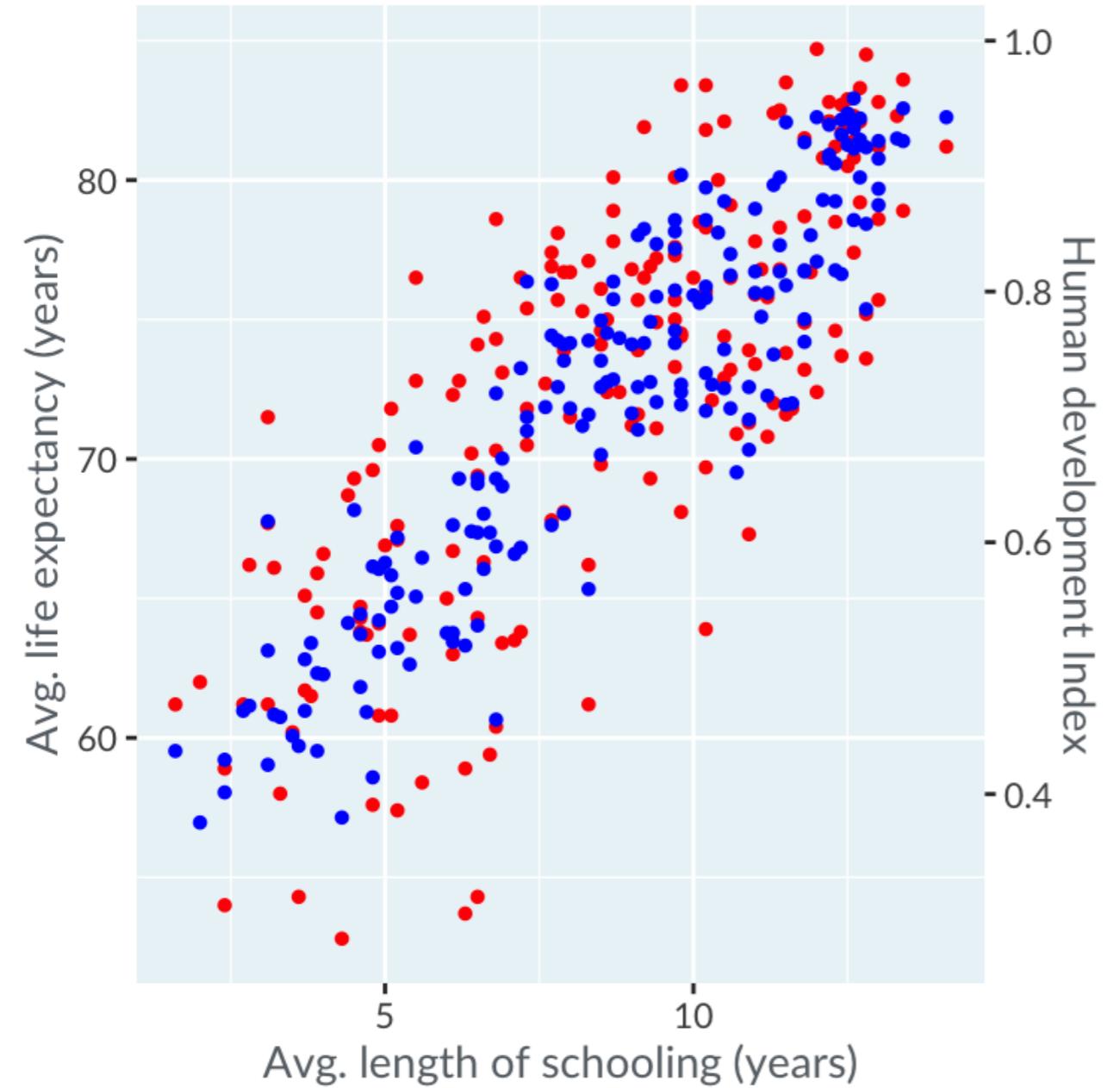
Parallel coordinates plot: find patterns across variables



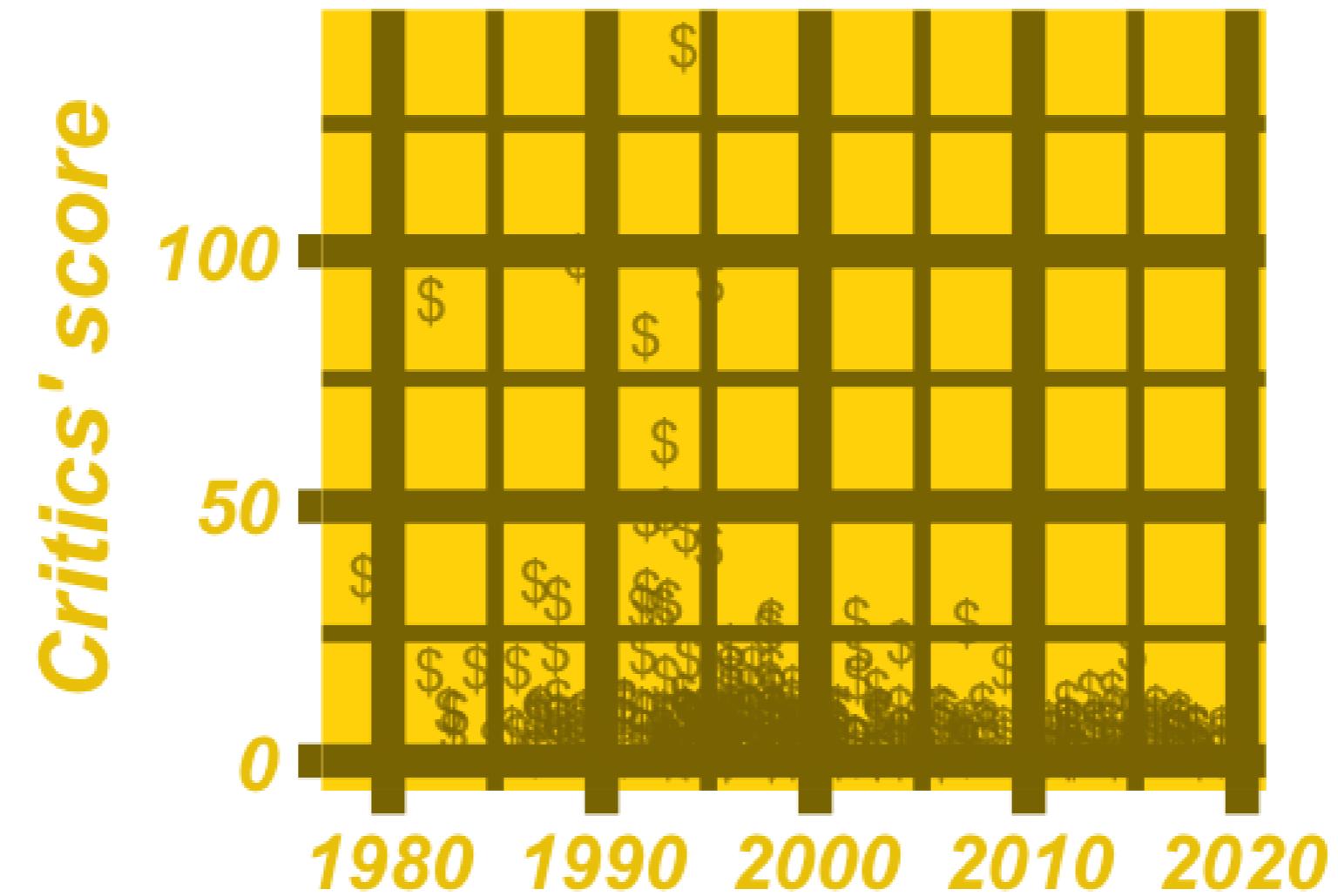
Rose plot: show a cyclical distribution



Dual axes are bad



Eliminate chartjunk



Next steps

- [Introduction to Data Visualization with ggplot2](#)
- [Introduction to Tableau](#)
- [Introduction to Data Visualization with Matplotlib](#)
- [Introduction to Data Visualization with Seaborn](#)

You made it!

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