Graphics Grammar → Sentences:

Rules for better data visualization

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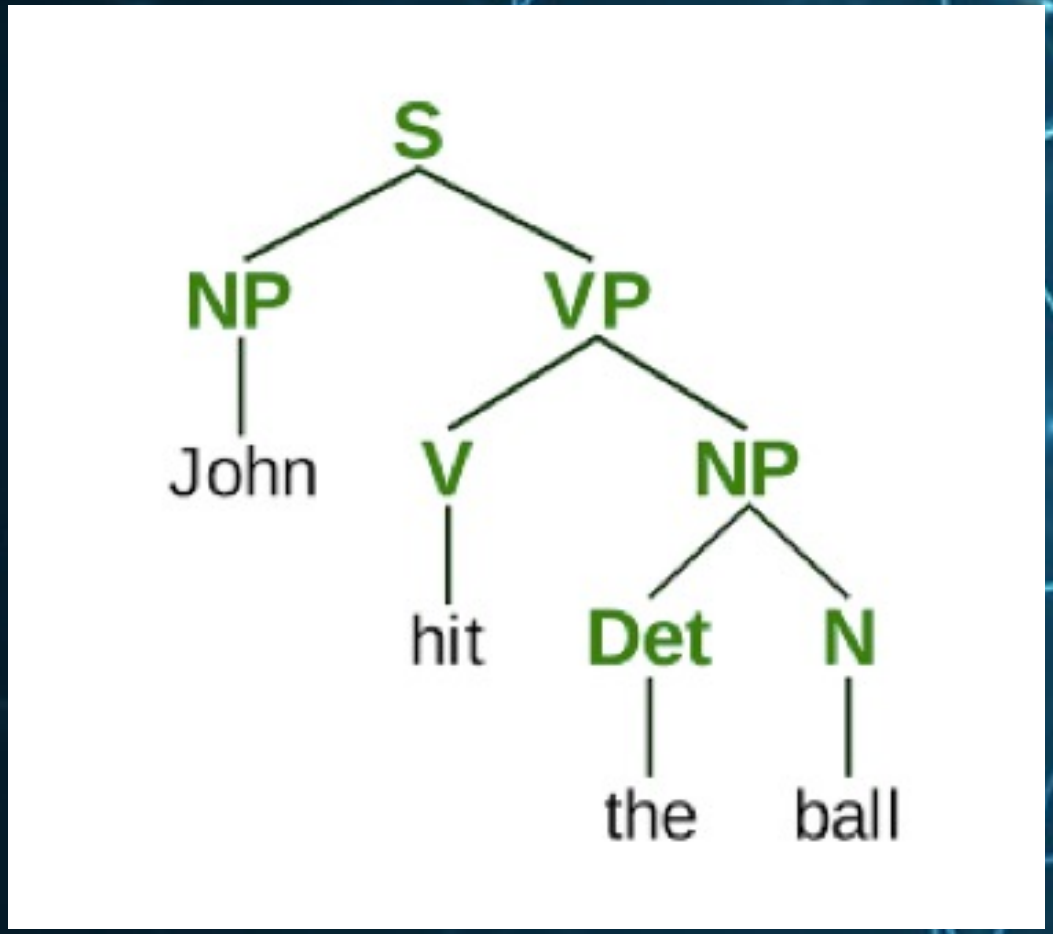
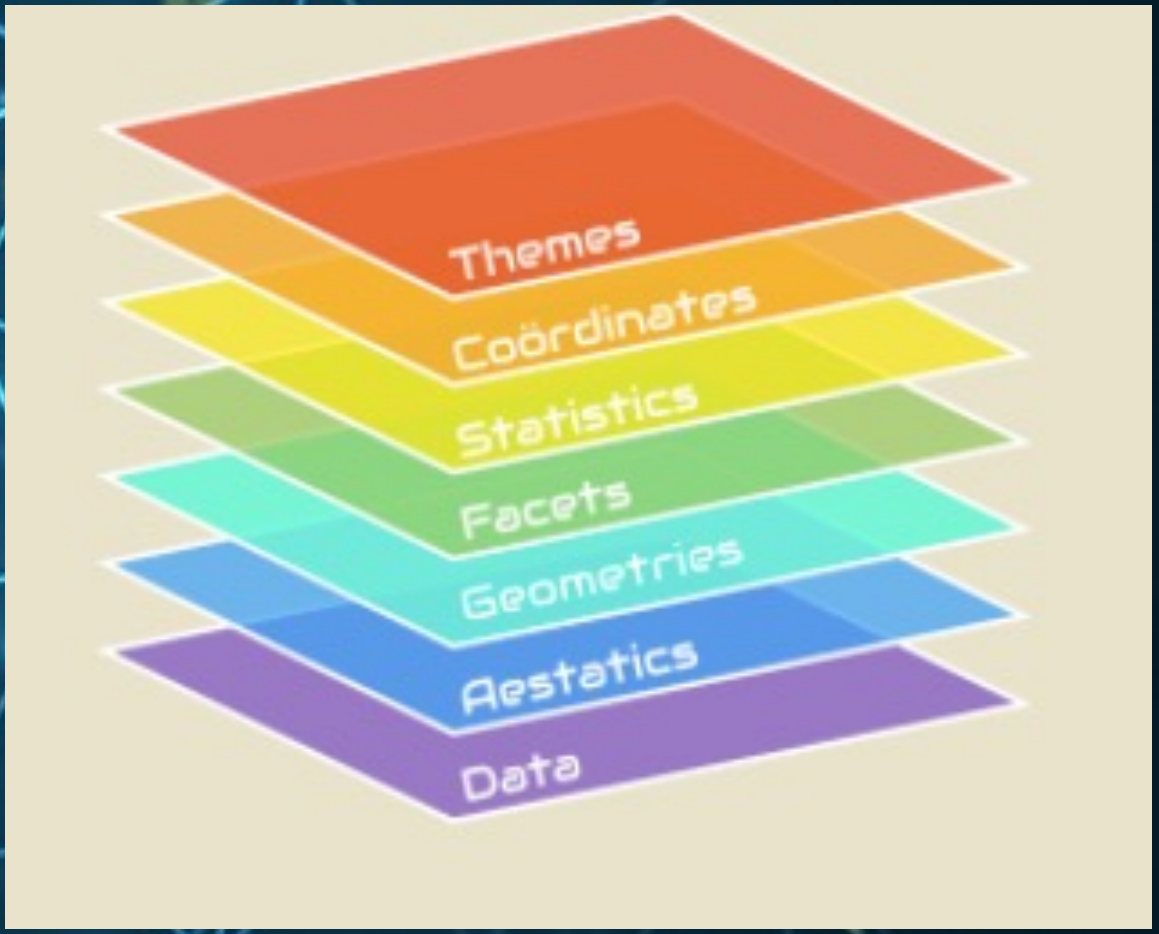
PSYC 6135 Mini Leader Presentation

Winter 2022

English Grammar

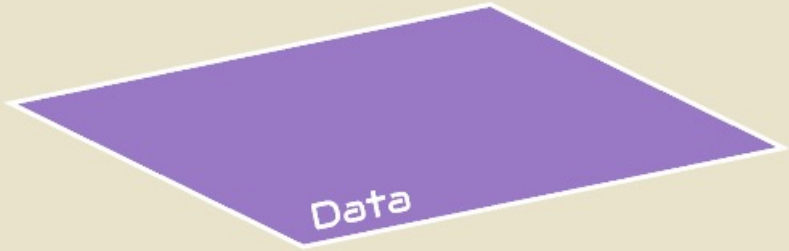


Graphics Grammar



Grammar of Graphics

xy, 3902, 29, 9,
4756, x, 72, 633,
647, 617, 827, 3,
1, 21, 45, tyu, 6,
987, 457, 283, 8,
4, 5, 671, 34, 67,
x, 981, hu, 89, 5

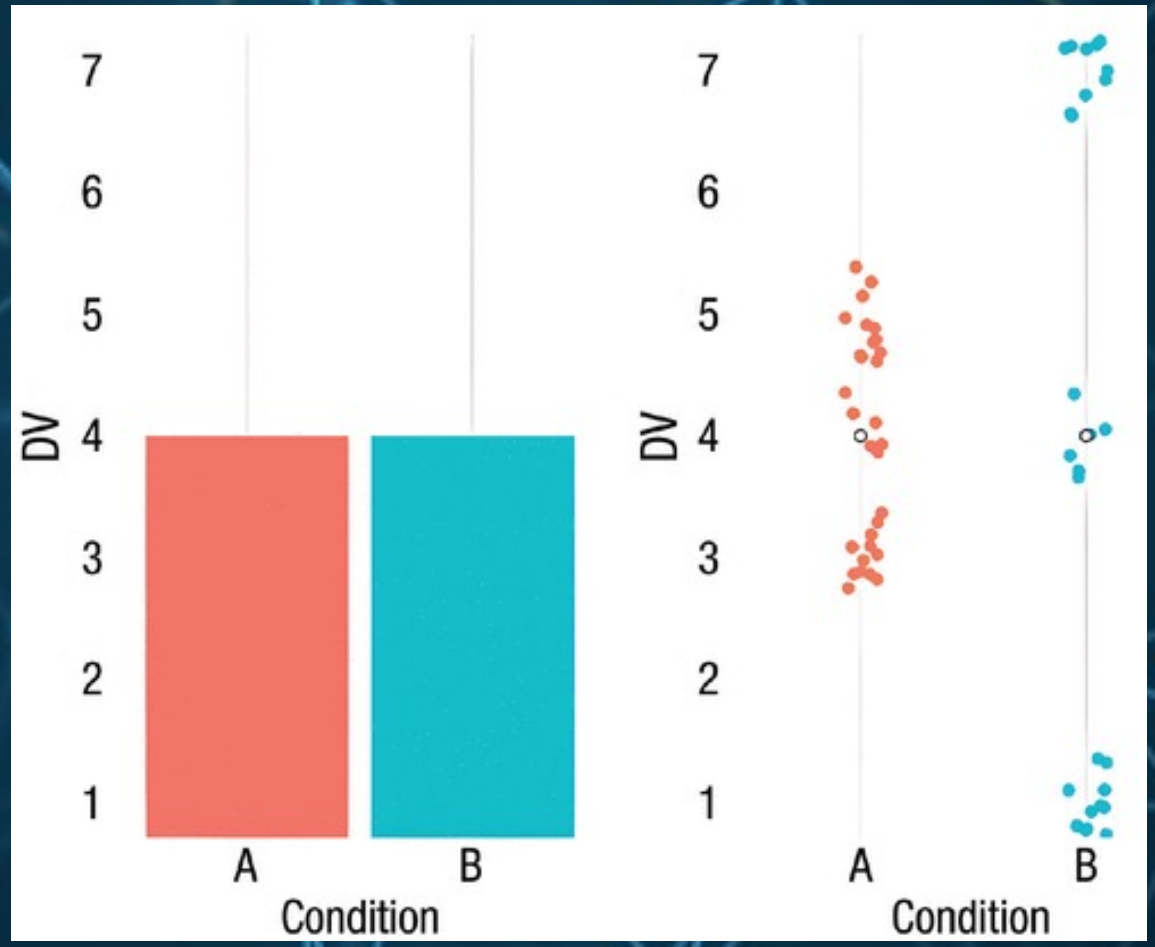


The Grammar of Graphics. Visual by Thomas de Beus

”grammar tells us what words make up our graphical “sentences,” but offers no advice on how to write well. How can we build on top of the grammar to help data analysts build compelling, revealing graphics?“

Rules for doing better data visualization

Rule 1: Show as much data as possible



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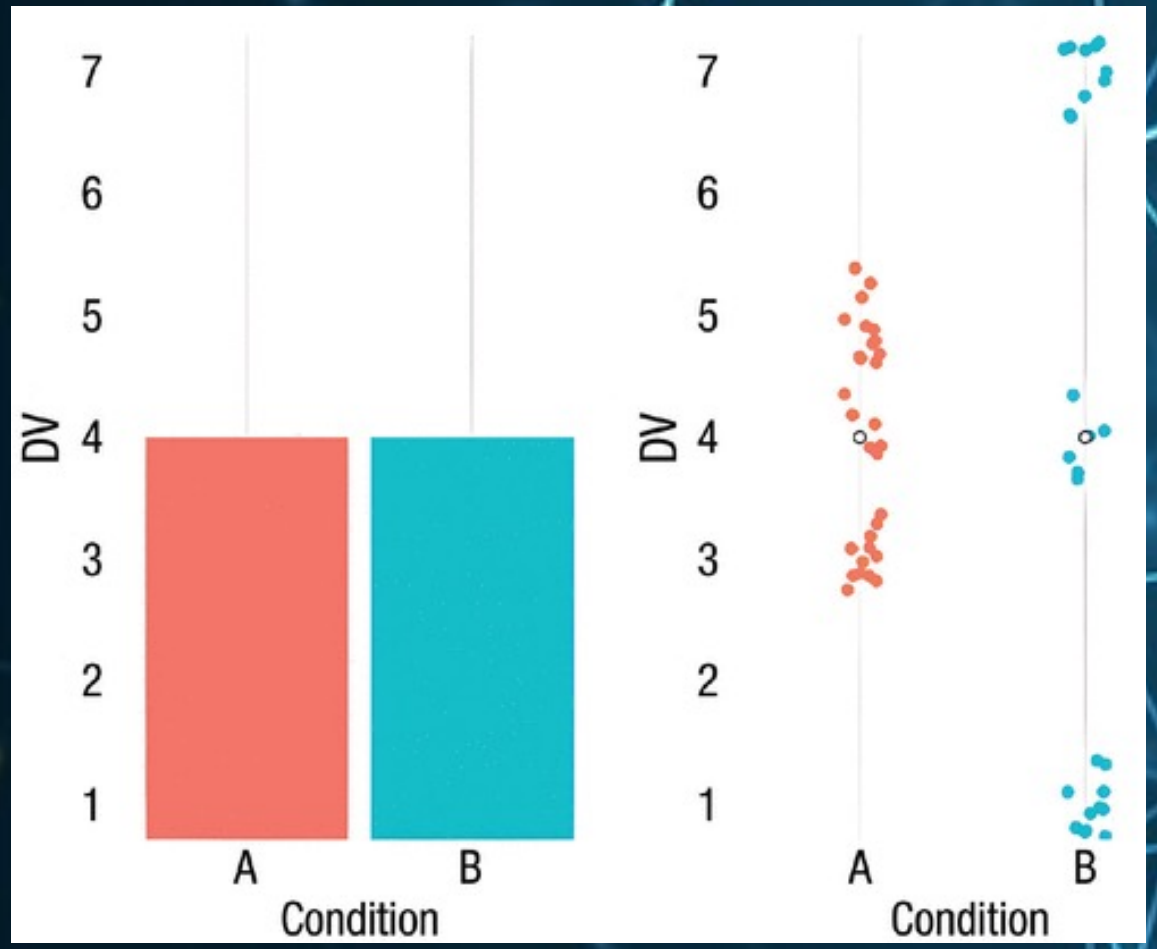

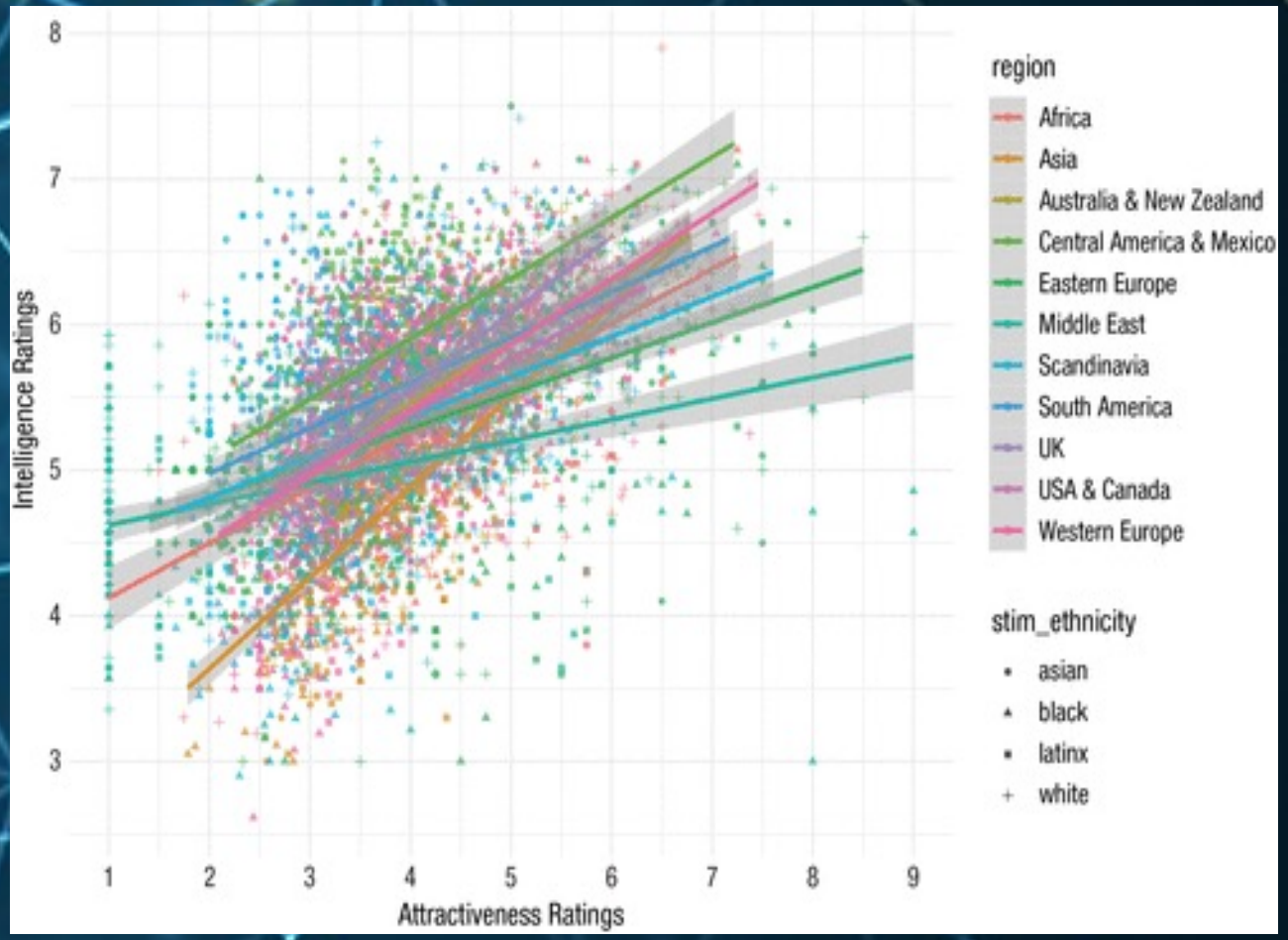

Rule 2: Use an effective geometry to show data

Comparisons

Proportions

Distributions

Relationships

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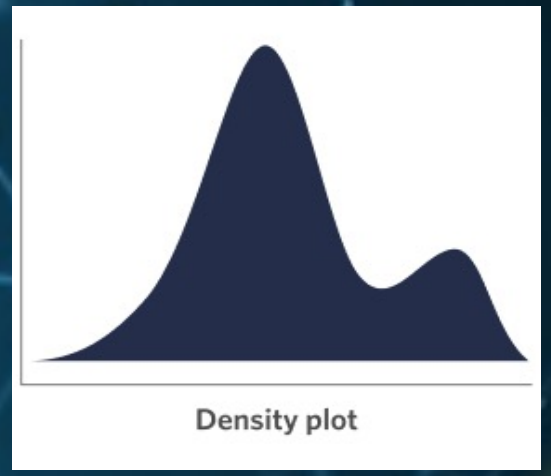
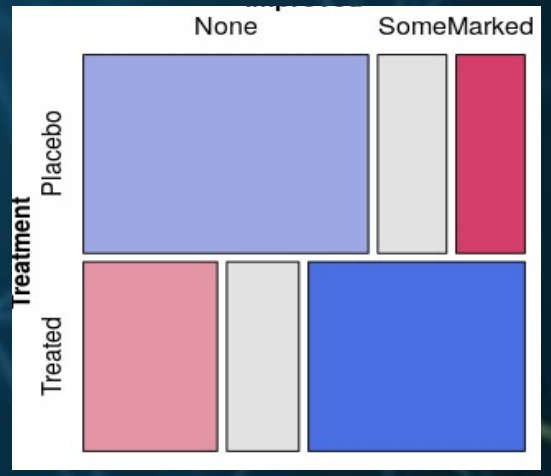
Proportions





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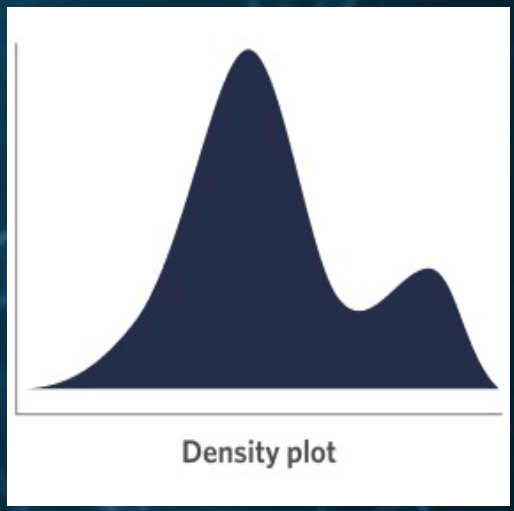
Distributions



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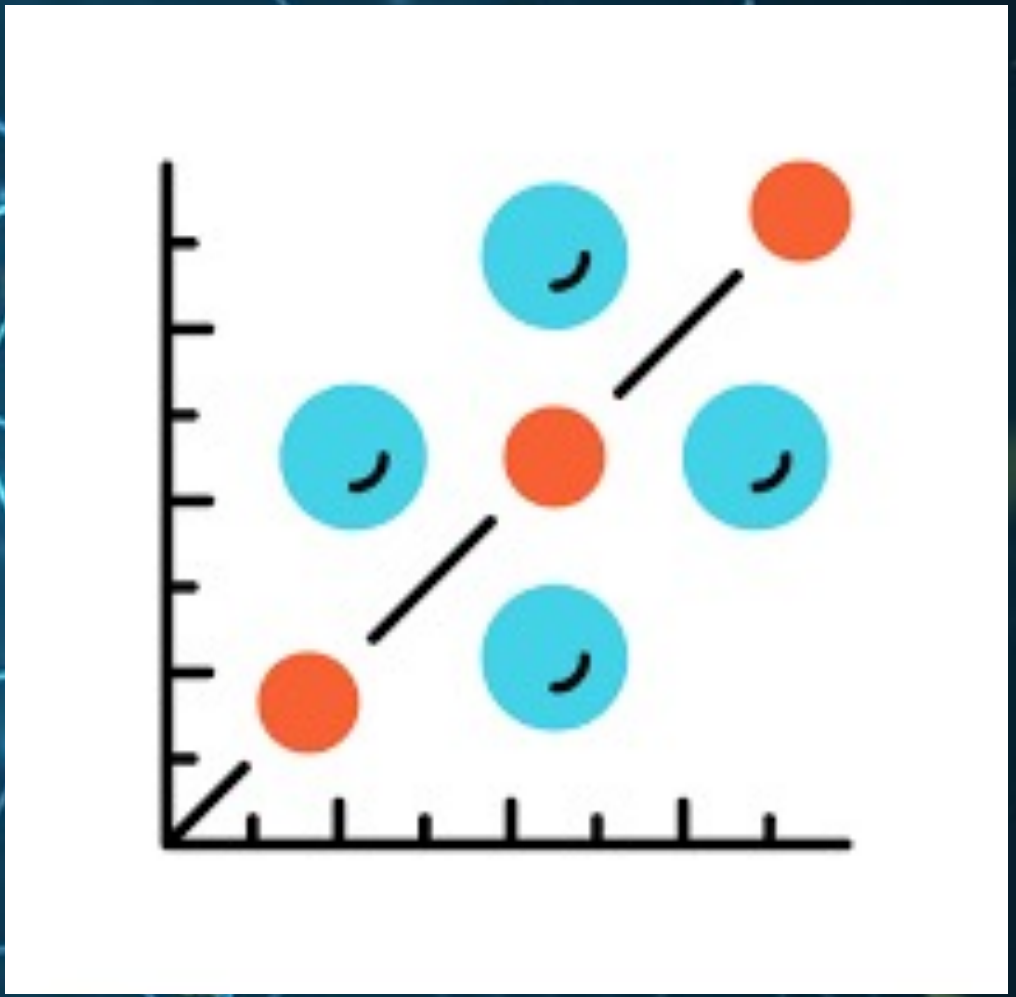
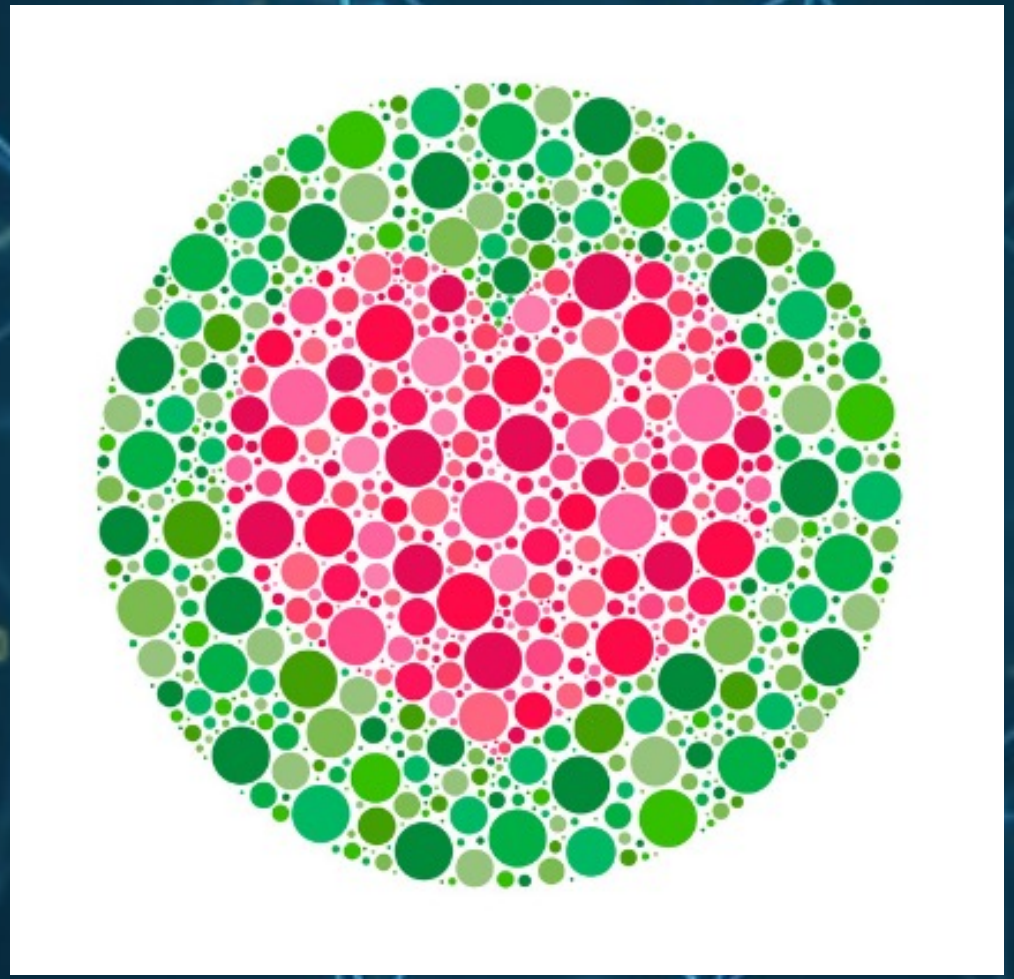
Relationships



Rule 3: Choose colour wisely



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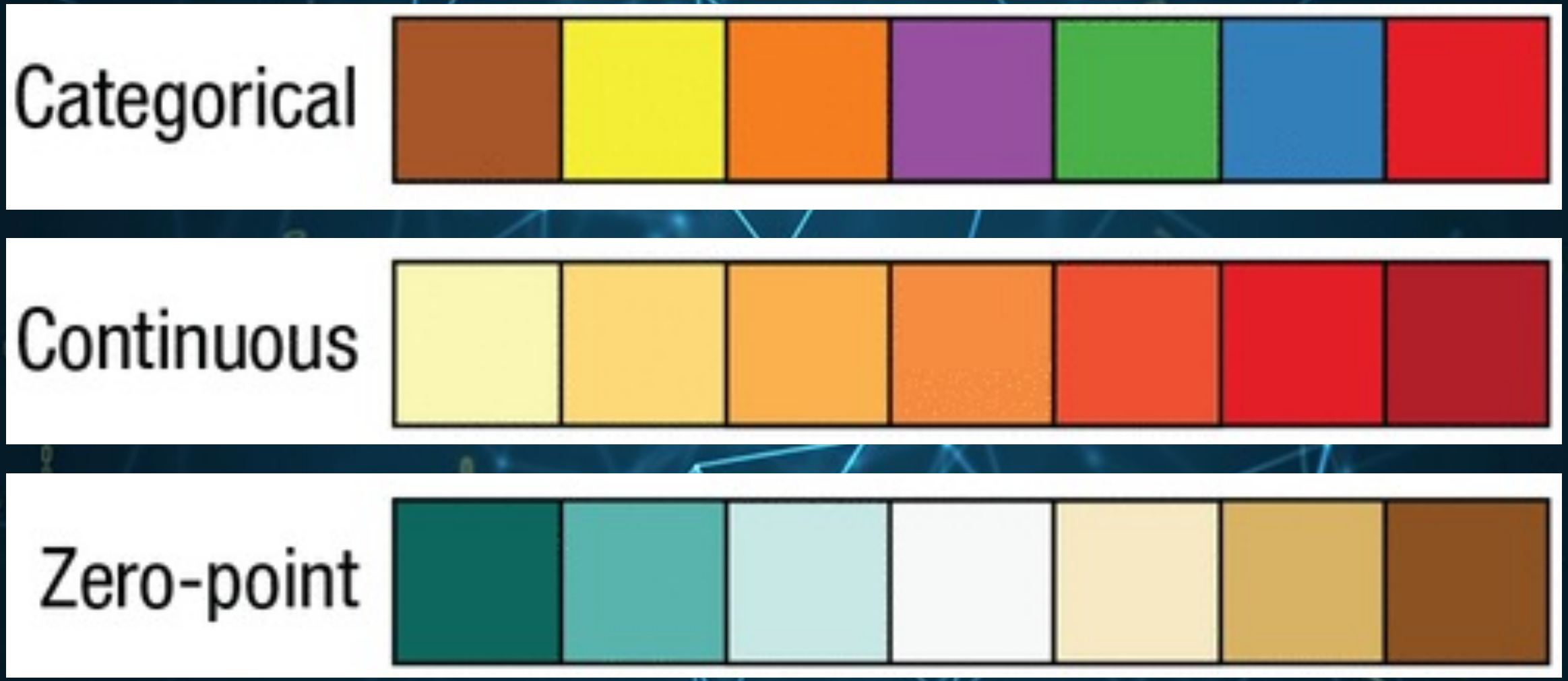

ColorBrewer (Brewer et al., 2003)

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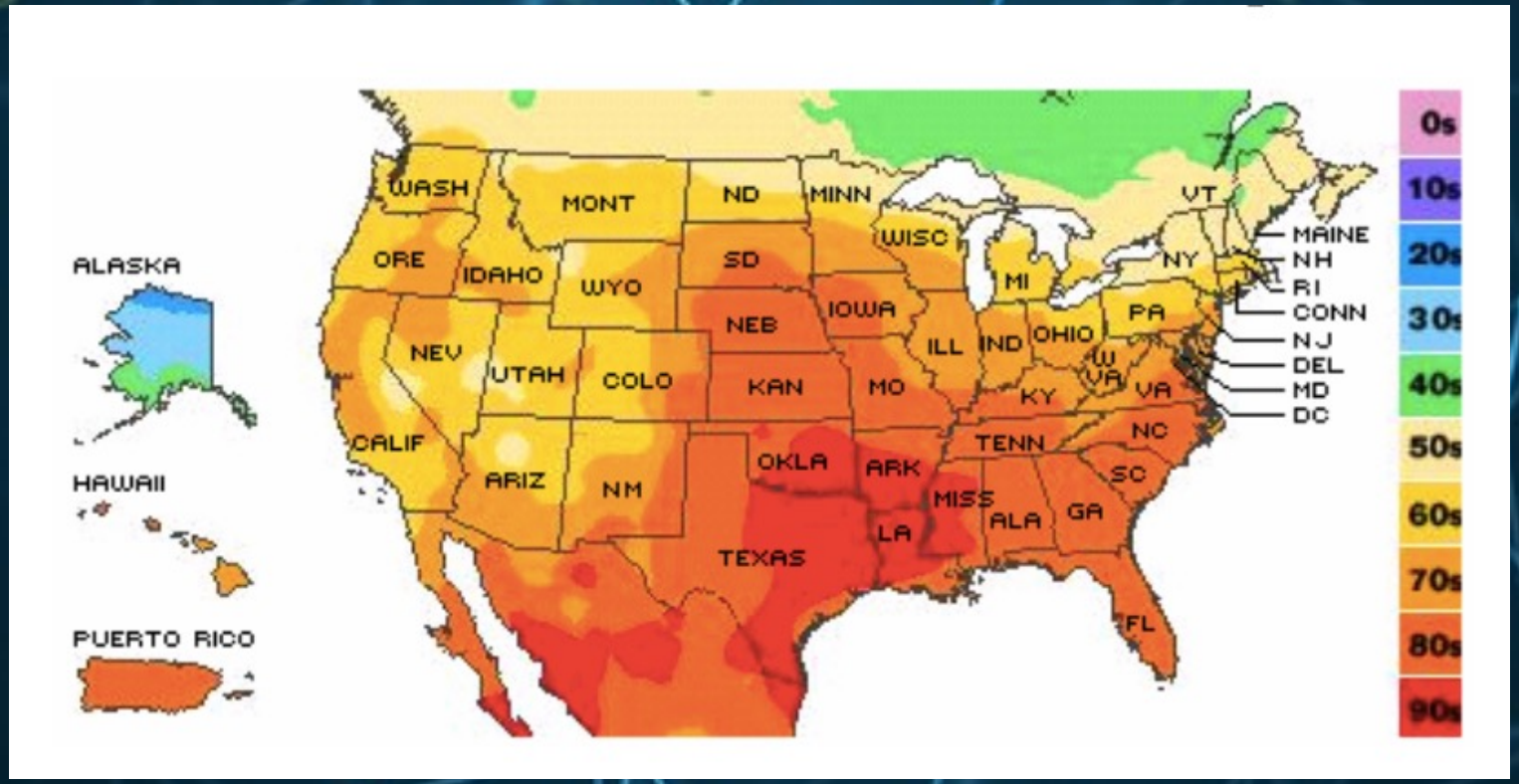

Additional Reading

Ismay, C., & Kim, A. Y. (2021). *Modern dive: Statistical Inference via Data Science*. https://moderndive.com/index.html
A freely and fully available online introduction to R and the tidyverse
Wickham, H., & Grolemund, G. (2017). *R for data science*. O'Reilly Media. https://r4ds.had.co.nz/
A freely and fully available online introduction to programming in R
Tutorials Point. *Learn ggplot2*. https://www.tutorialspoint.com/ggplot2/ggplot2_introduction.htm
A freely and fully available online introduction to ggplot2
Wilke, C. O. (2019). *Fundamentals of data visualization: A primer on making informative and compelling figures*. O'Reilly Media.
An excellent modern resource, with some portions available online, including some code for R.
Tufte, E. R. (1983). *The visual display of quantitative information*. Graphics Press.
The classic text on data visualization by an initial pioneer in the area
https://www.perceptualedge.com/
A website and blog maintained by data visualization expert Stephen Few, with numerous entries spanning back to 2006
Koponen, J., & Hildén, J. (2019). *Data visualization handbook*. Aalto korkeakoulusäätiö.
A practical guide to data visualization. For example, see here for comparisons of differential effectiveness of ways of conveying different types of values (e.g., shapes, color, line length, position, etc): "Visual variables," https://datavizhandbook.info/.