KEY ELEMENTS IN THE GRAMMAR OF GRAPHICS:
DATA, AESTHETICS, GEOMETRIES

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7 LAYERS TO THE GRAMMAR OF GRAPHICS

Describes all the non-data ink	Theme	
Plotting space for the data	Coordinates	
Statistical models & summaries	Statistics	
Rows and columns of sub-plots	Facets	
Shapes used to represent the data	Geometries	
Scales onto which data is mapped	Aesthetics	
The actual variables to be plotted	Data	

Source: Ganes Kesari (2018) My Talk on Grammar of Graphics: The Secret Sauce of Powerful Data Stories

DATA, AESTHETICS AND GEOMETRIES

DATA

The variables that we want to plot.

AESTHETICS

The scales onto which we will map our data and how we translate and plot our data into what we want to see.

GEOMETRIES

The actual shape the data will take in the plot. Examples:

Line
Ribbon
Point
Letter
Box
Polygon
Etc

SCALES

SCALES - a part of aesthetics

scale controls the mapping from data to aesthetic attributes

Example from Wickham, H. (2012) A Layered Grammar of Graphics.
Journal of Computational and Graphical Statistics 19(1) 3–28.

POSITION ADJUSTMENTS

Position adjustment - a part of Geometries

Examples:
- stack
- jitter
- dodge (side-by-side)

Source: Professor Rafael Irizarry (2019) *Introduction to Data Science*