

Data Visualization - 1.

Looking at Data (part 2)

Kieran Healy

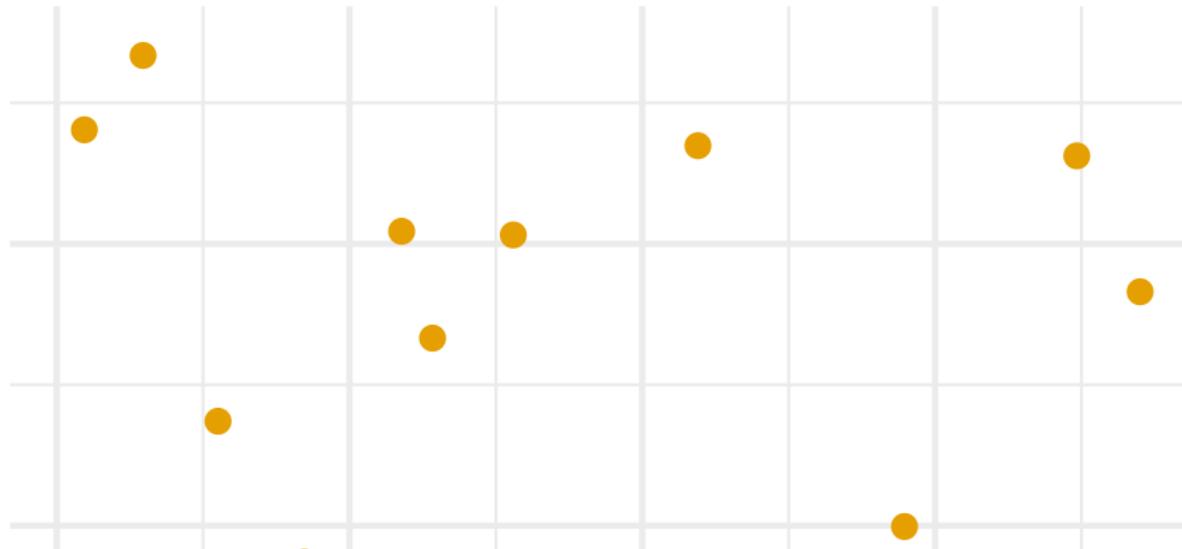
Code Horizons

December 10, 2023

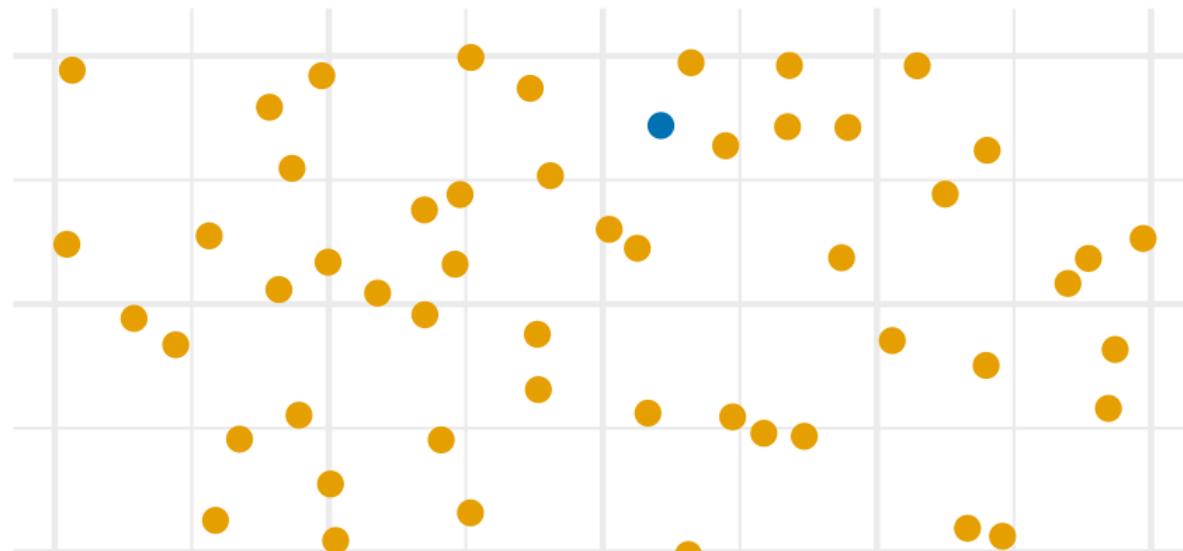
Looking at Data (part 2)

Pre-Attentive Processing

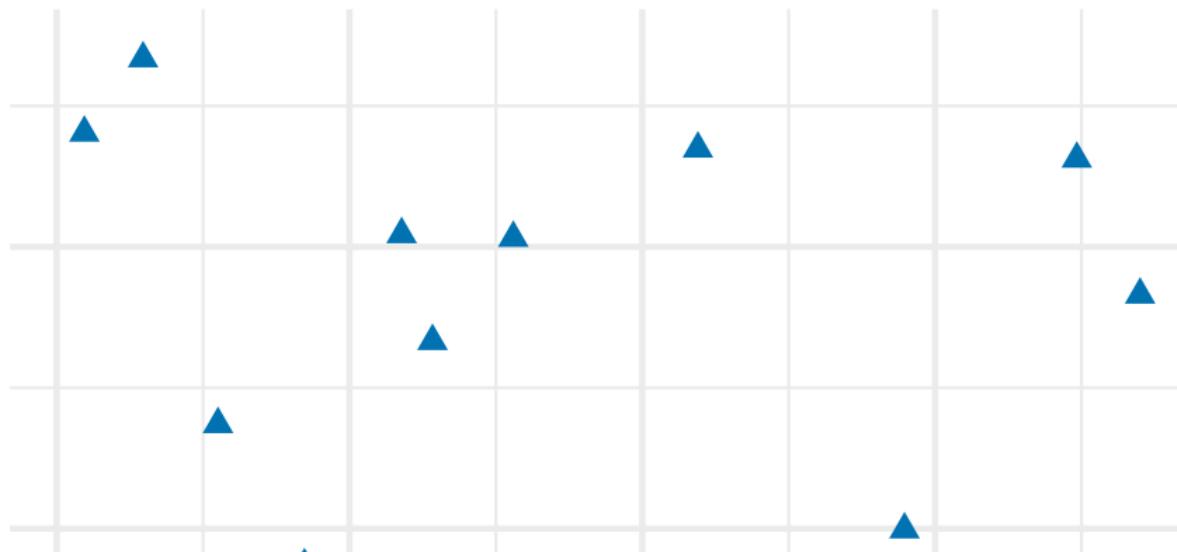
Color only, N = 20



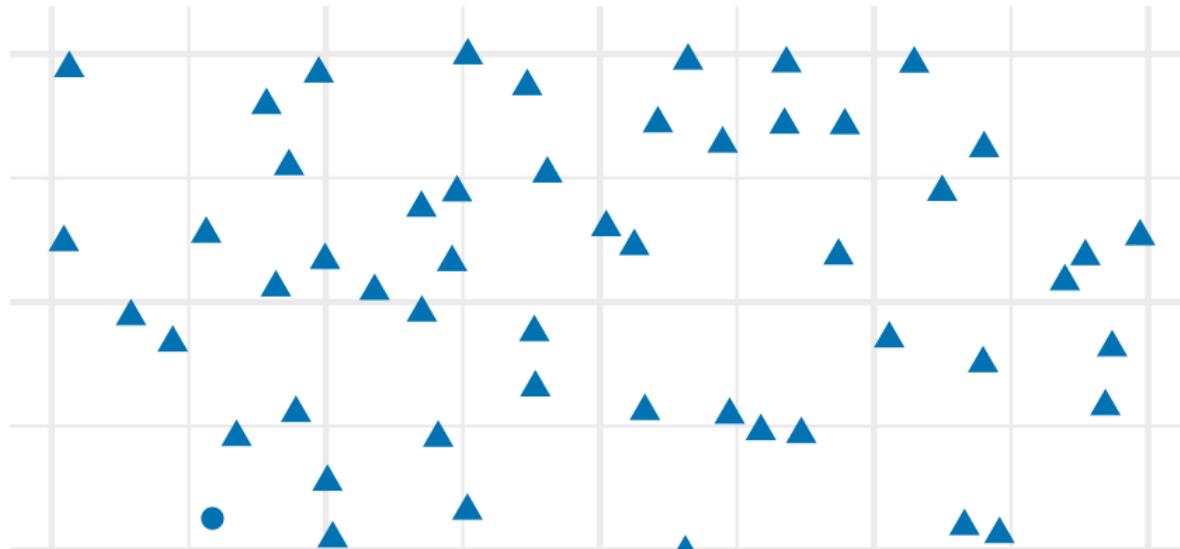
Color only, N = 100



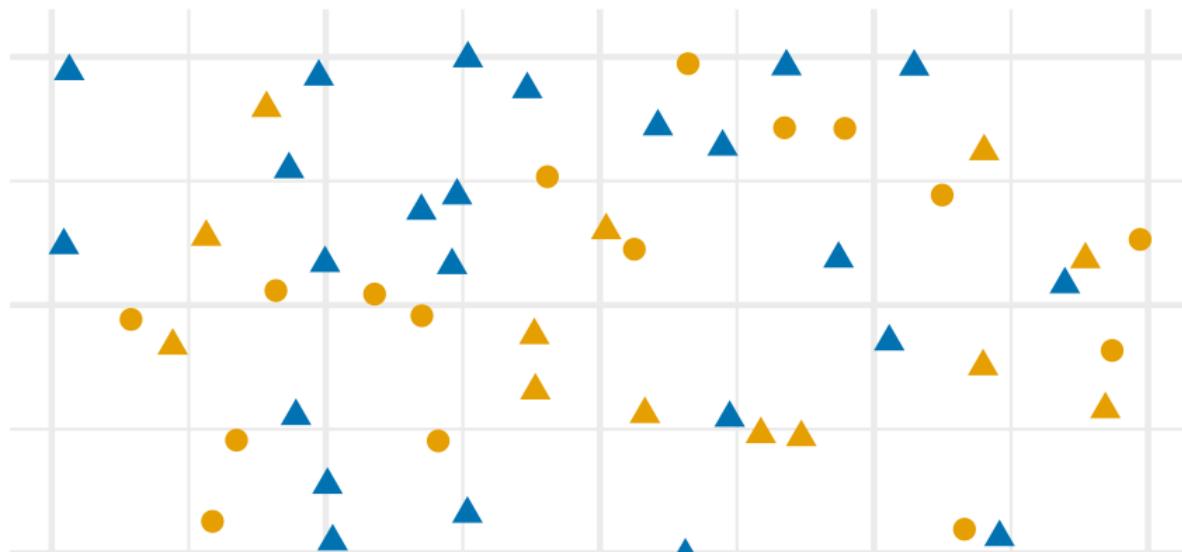
Shape only, N = 20

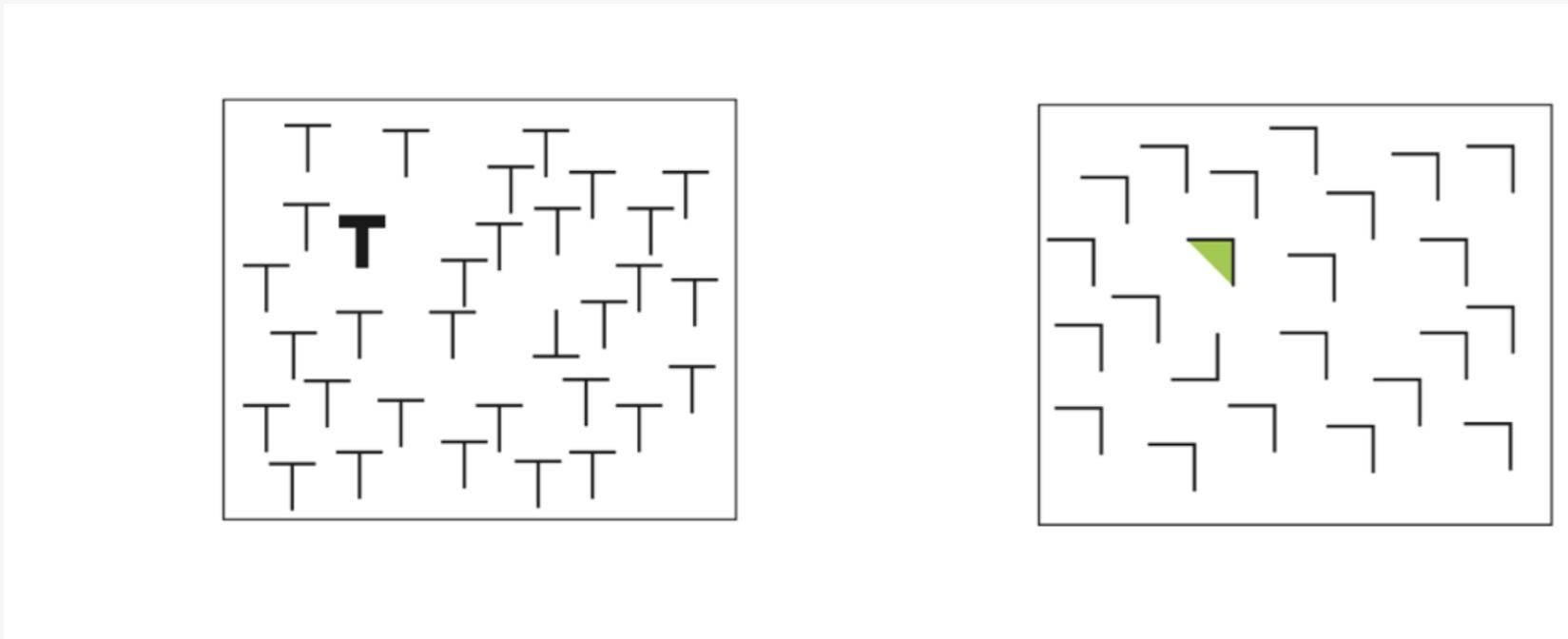


Shape only, N = 100

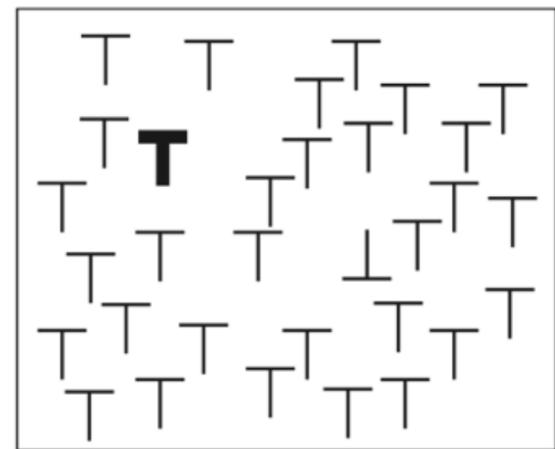


Color and Shape, N = 100

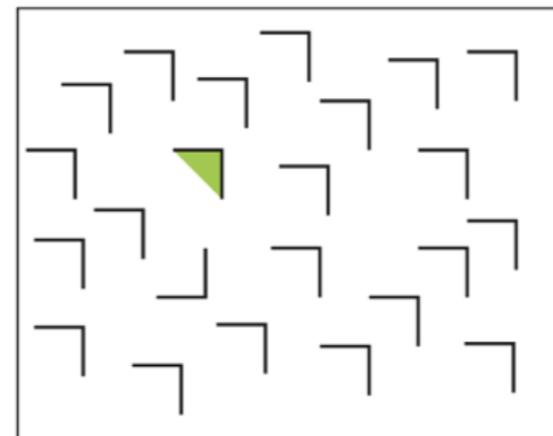




 difficult
 easy

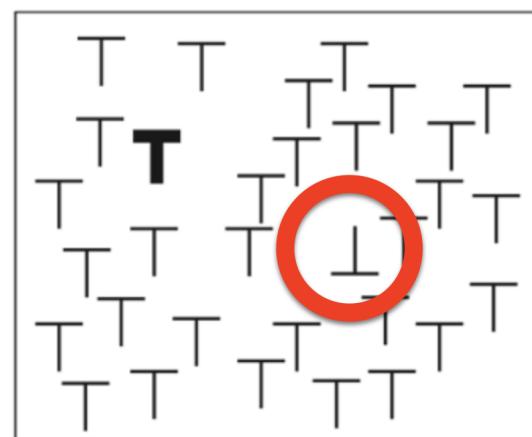


 difficult
 easy



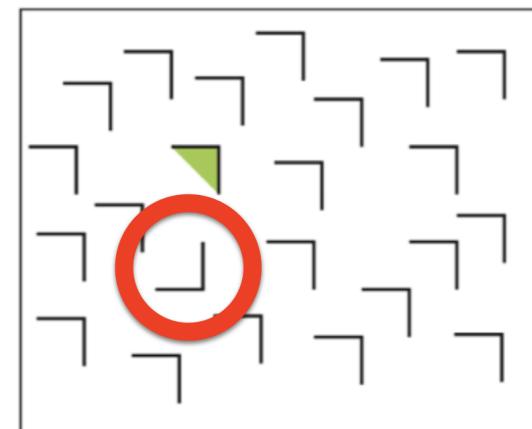
\perp
difficult

T
easy



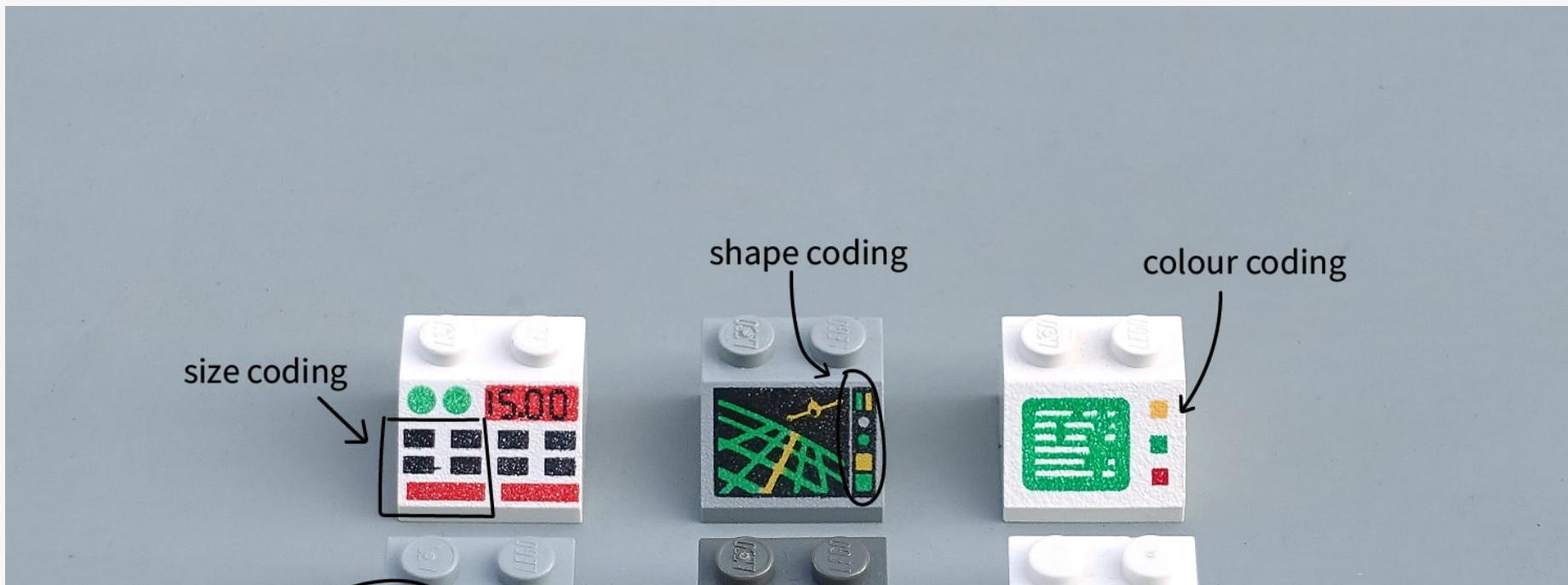
\sqcup
difficult

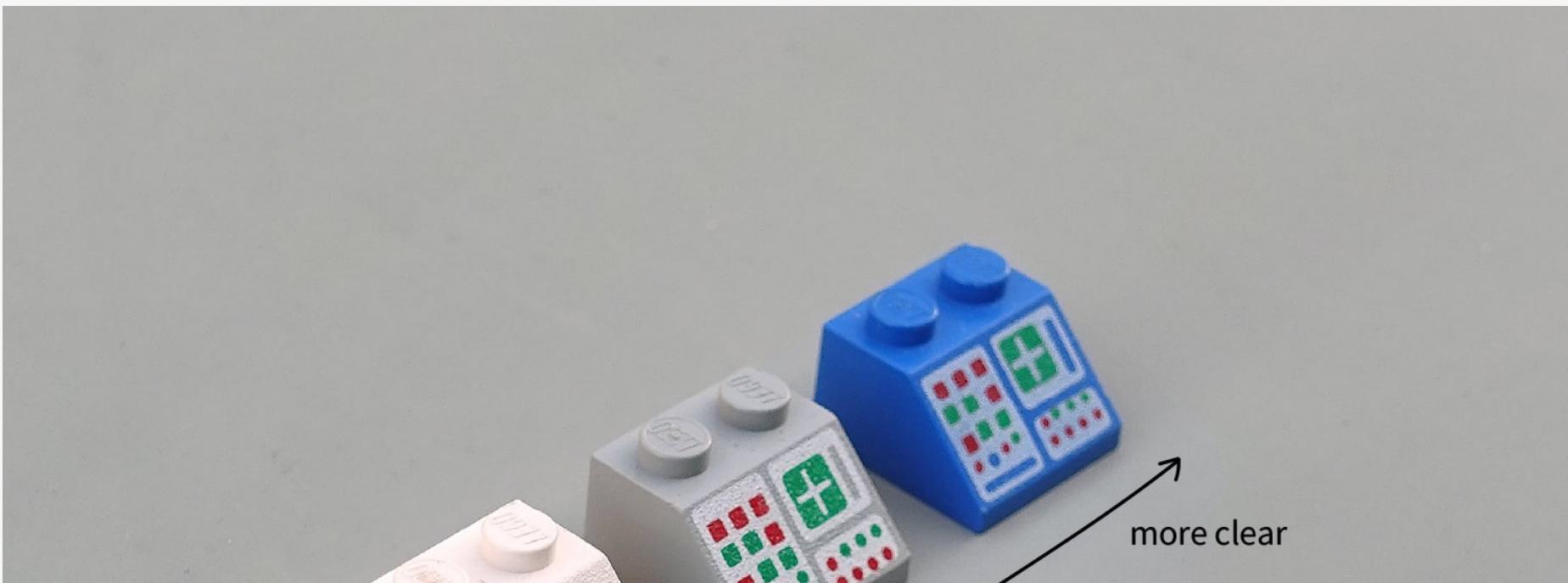
easy



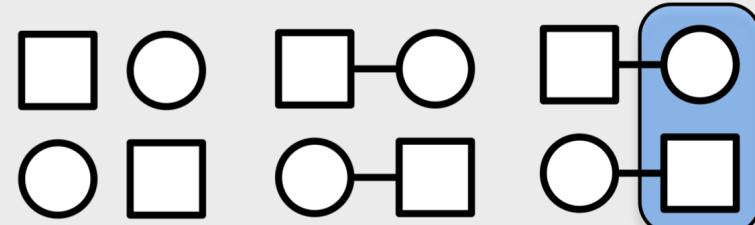
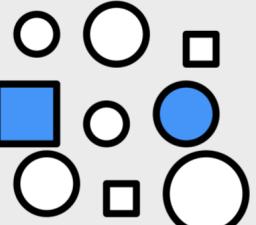
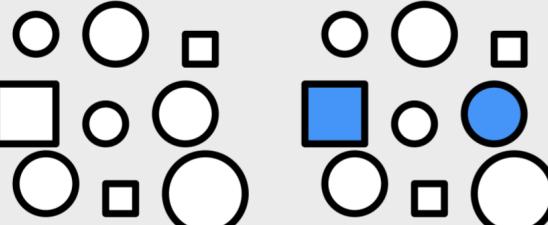
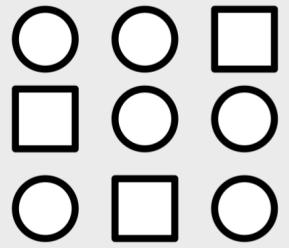
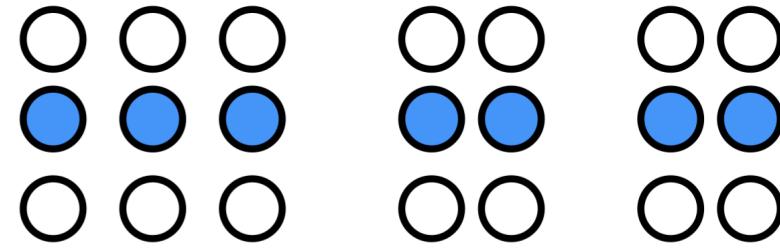
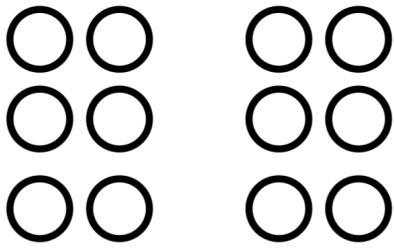
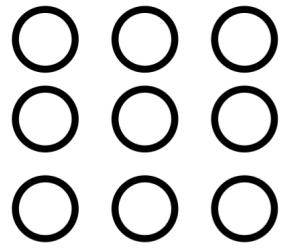
Gestalt Inferences and Design







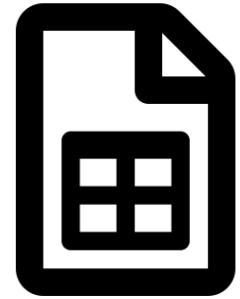
more clear



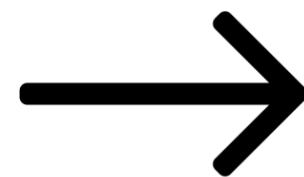
Encodings or mappings for
data

What's a graph, anyway?

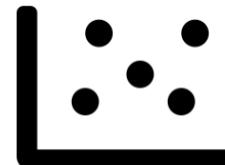
Data

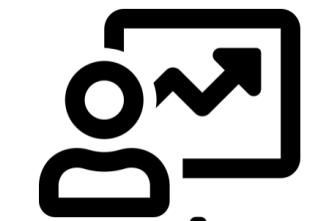


Encoded



or mapped

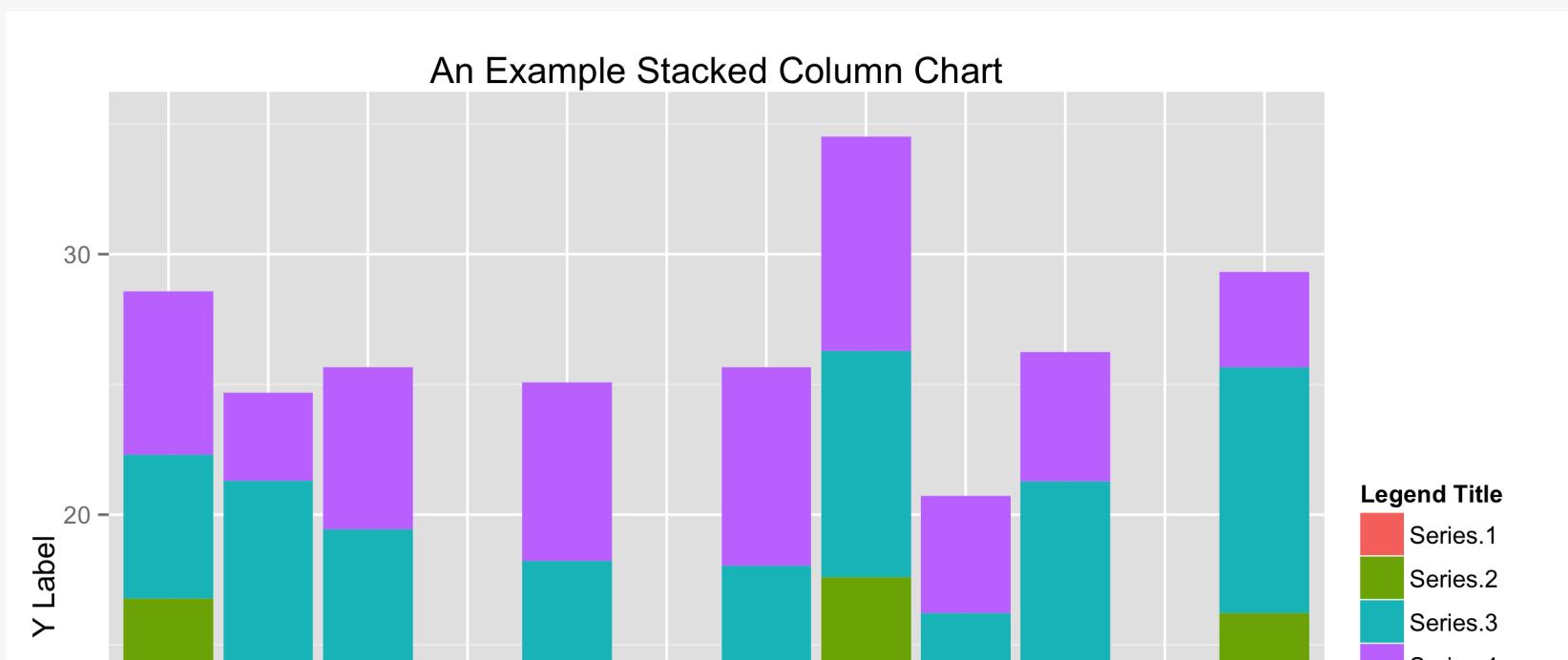


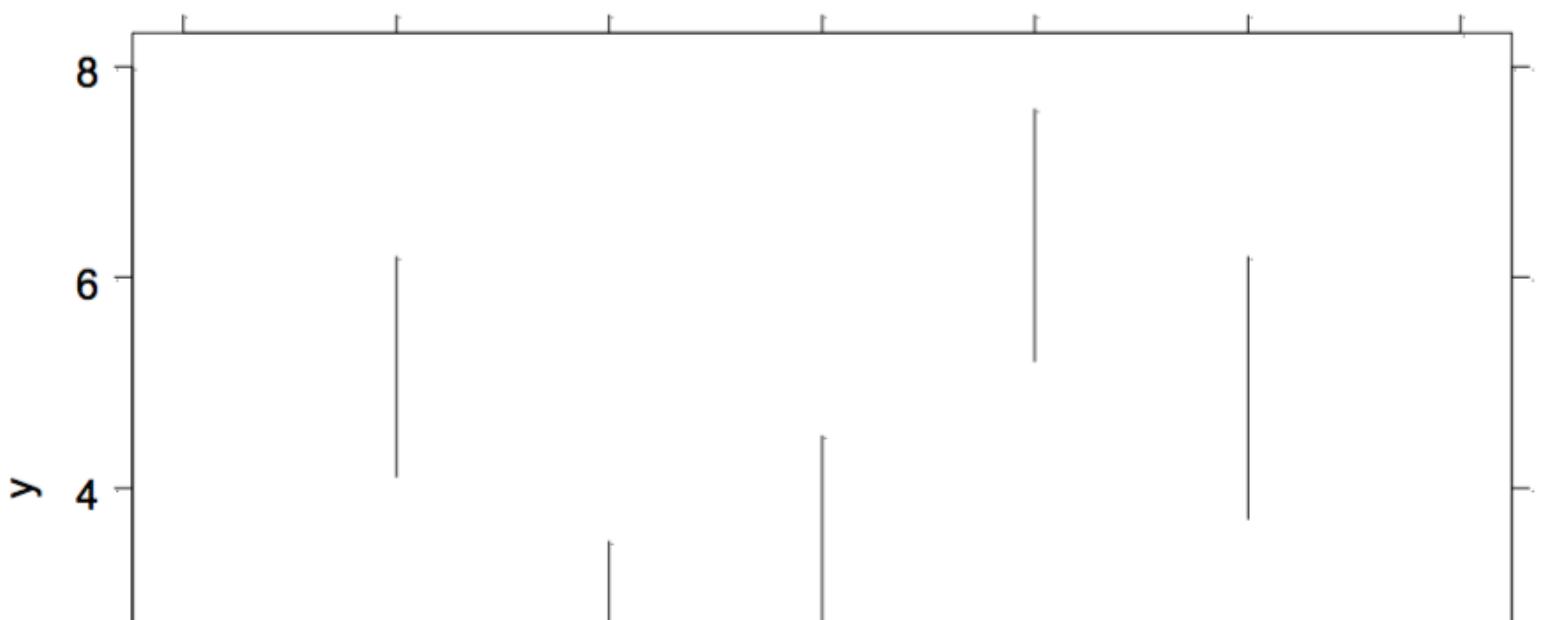


Decode

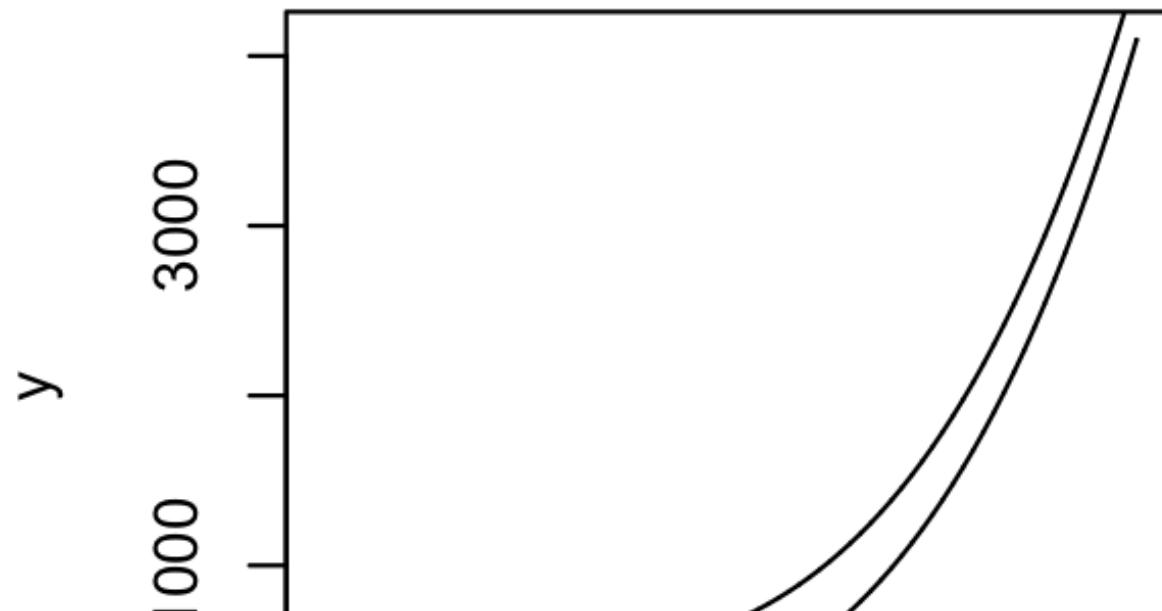


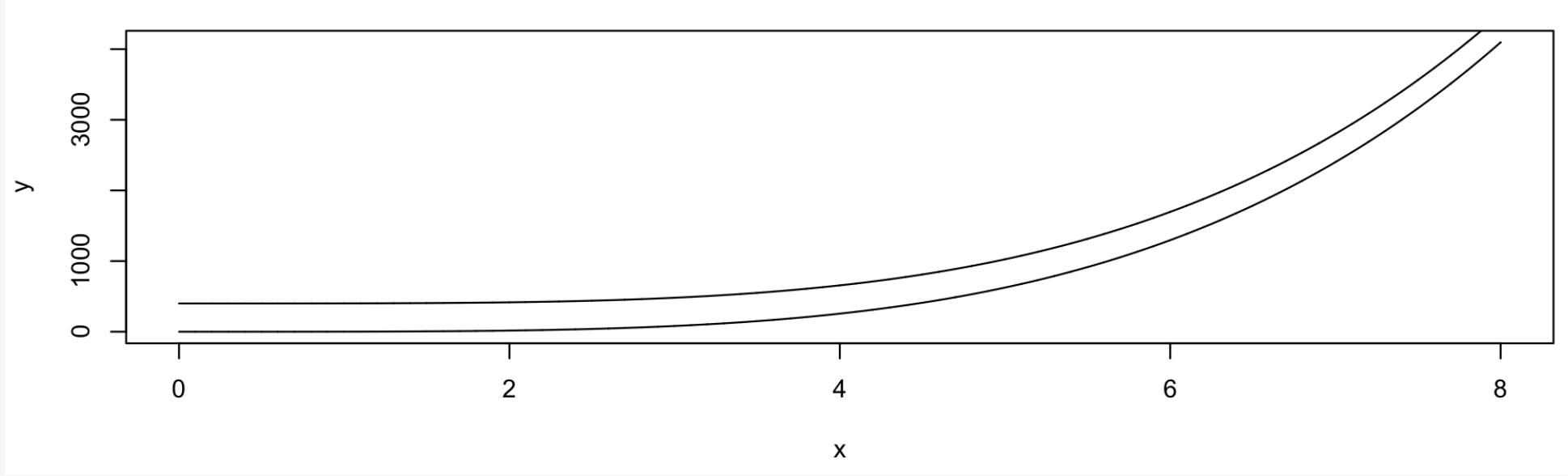
Visual tasks in decoding graphs



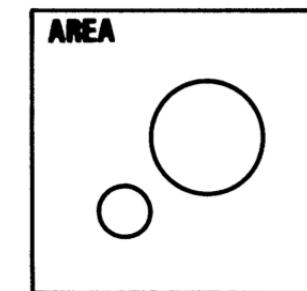
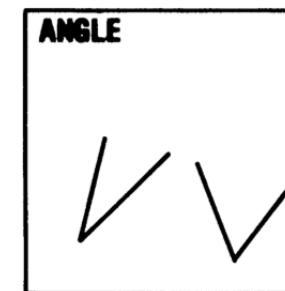
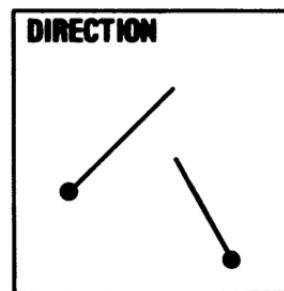
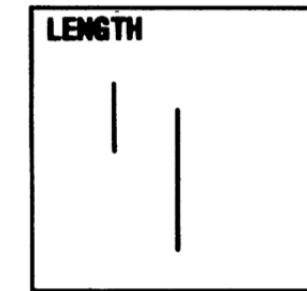
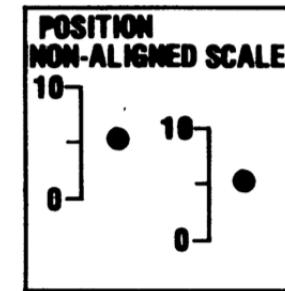
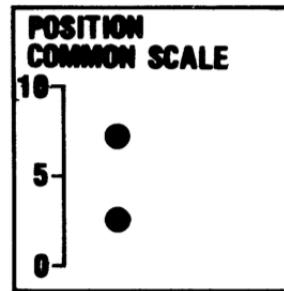


III





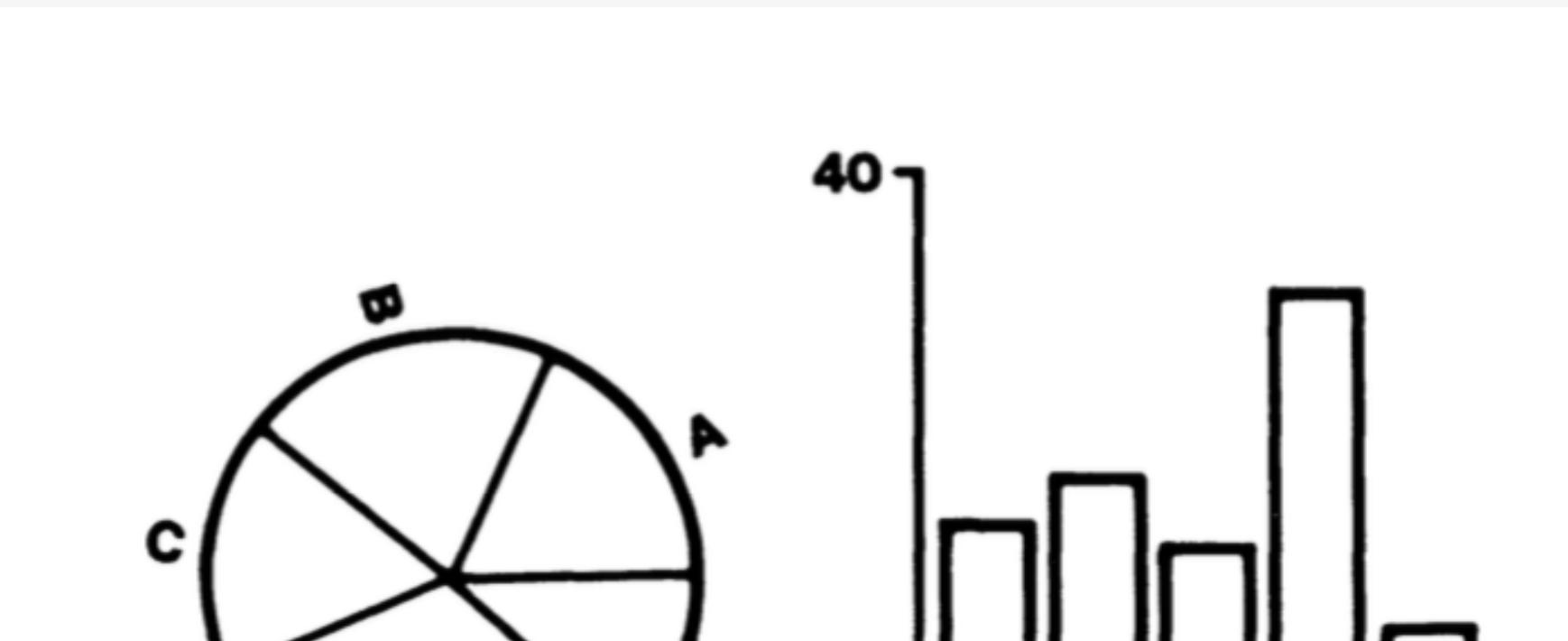
William Cleveland

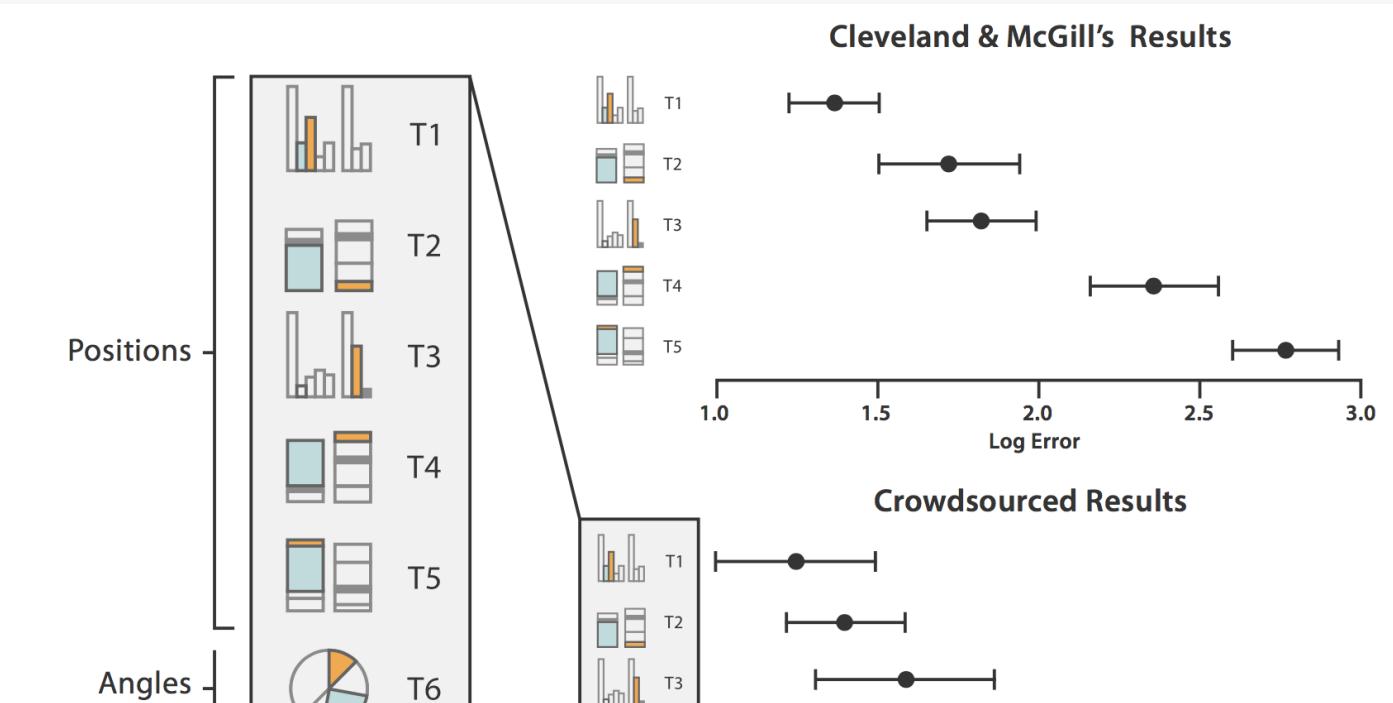


VOLUME

CURVATURE

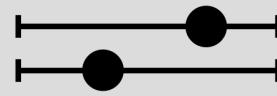
SHAADING



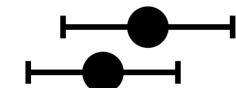


A rough hierarchy of
mappings for data

Position on a common scale



Position on unaligned scale



Length (1D as size)



Tilt or Angle



Area (2D as size)



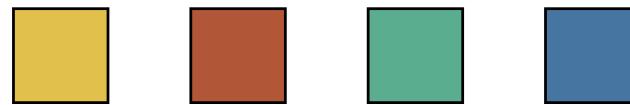
Depth (3D as Position)



Spatial Region



Color [hue]



Honesty & judgment

Oceania

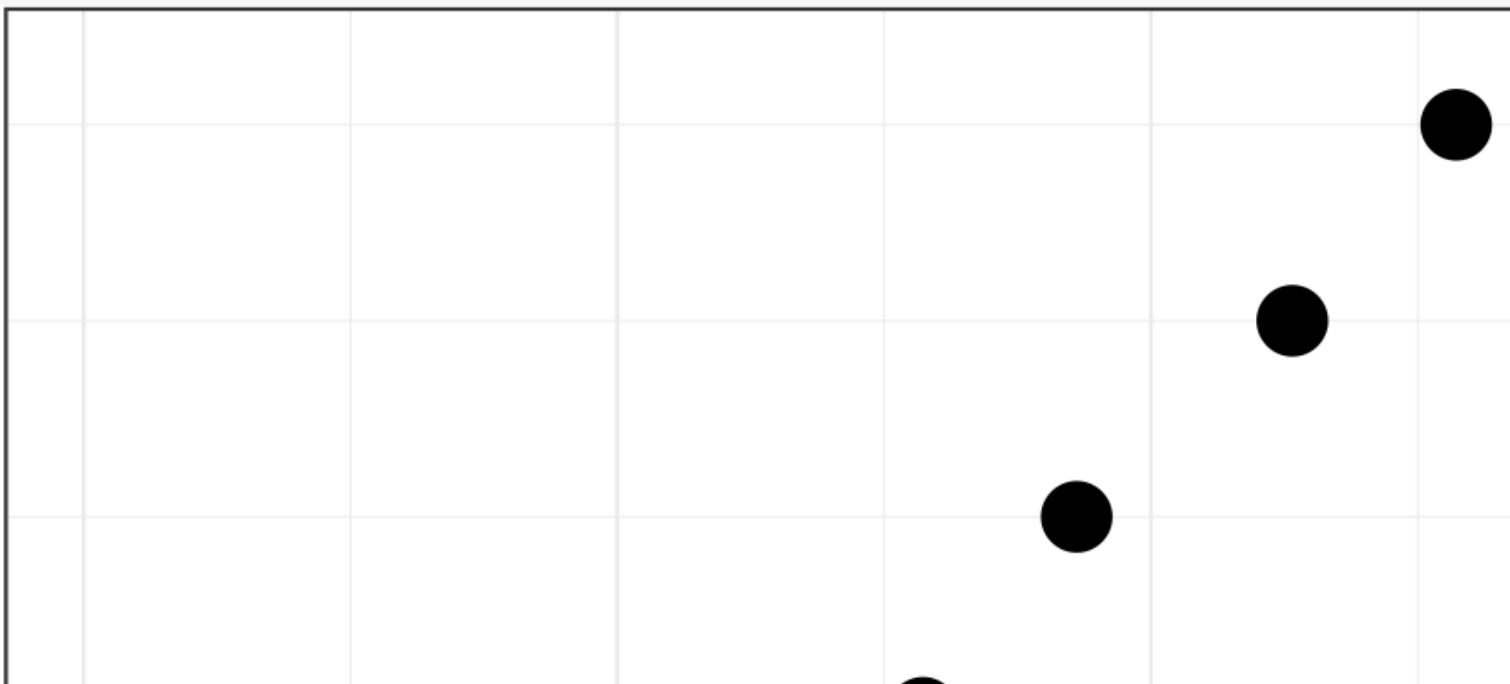
Europe

Americas

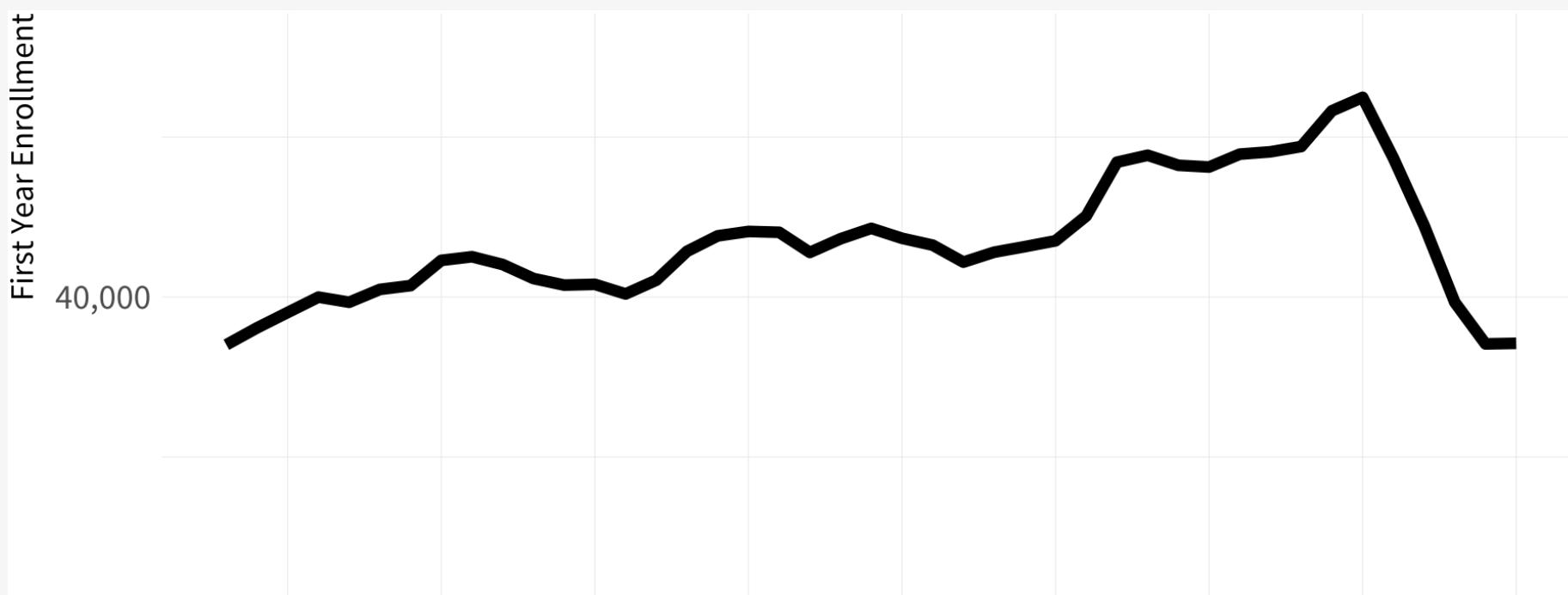


≡

Oceania
Europe
Americas







CLARITY



CLARITY
HONESTY

CLARITY
HONESTY

TRUTH

CONTEXT

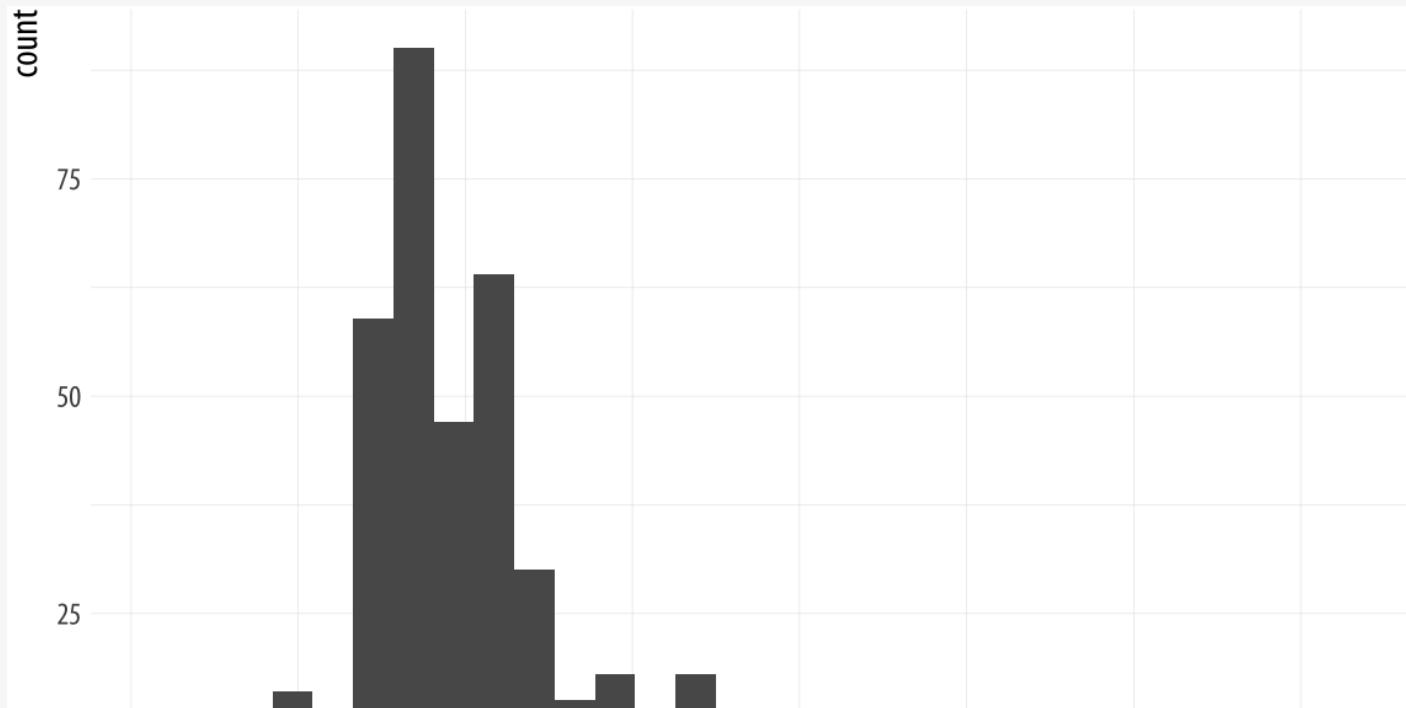
CONTEXT CONVENTION

CONTEXT CONVENTION

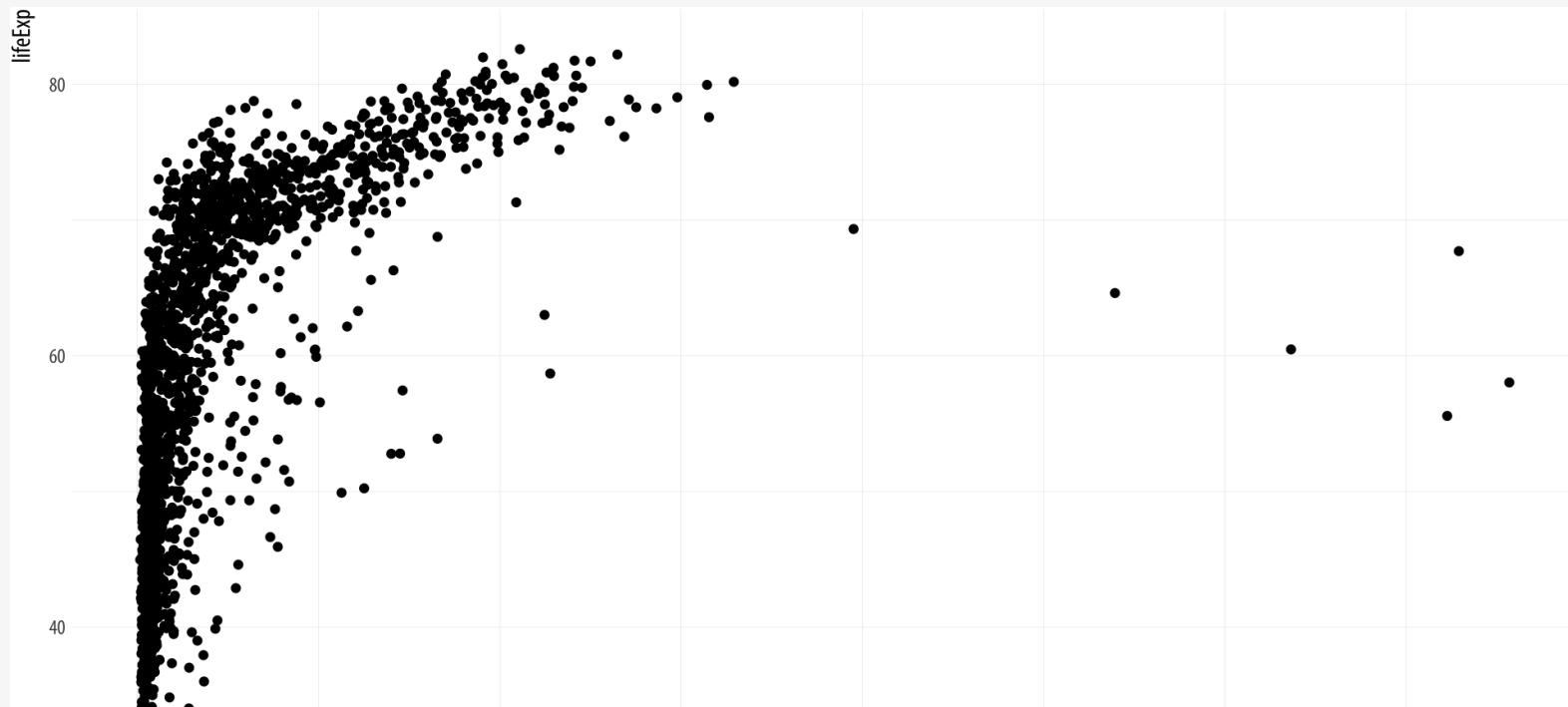
MEANING

Graphing in practice

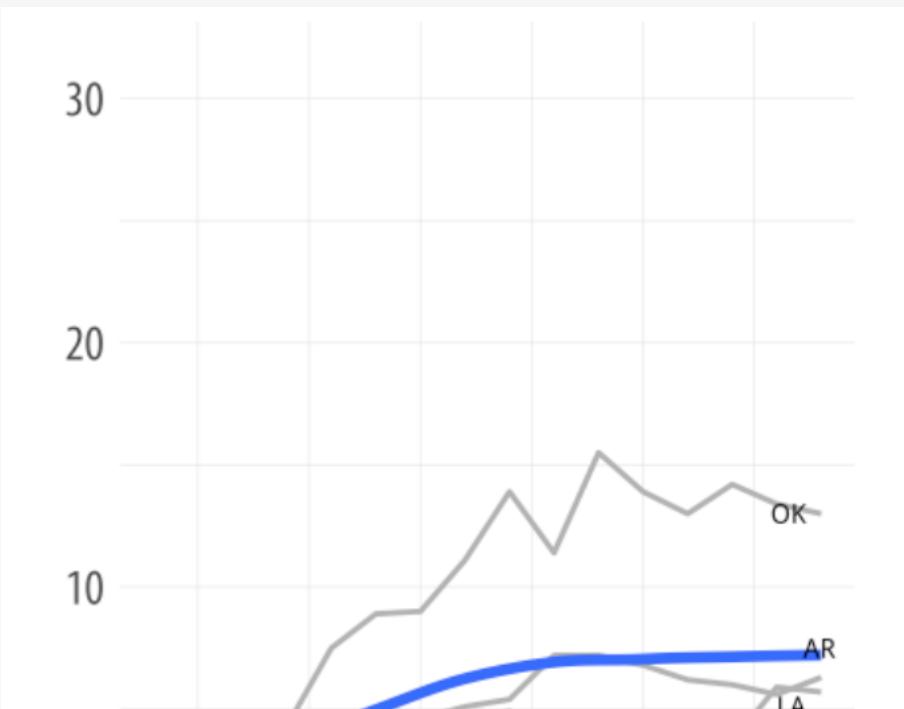
Workhorses



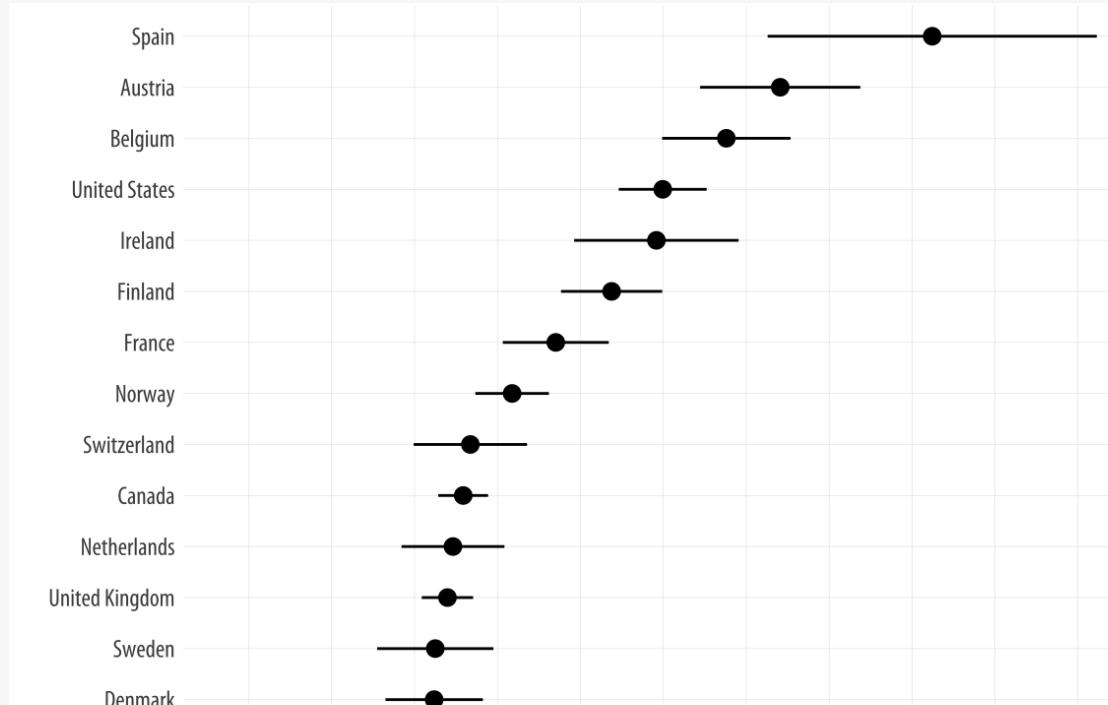
Workhorses



Workhorses



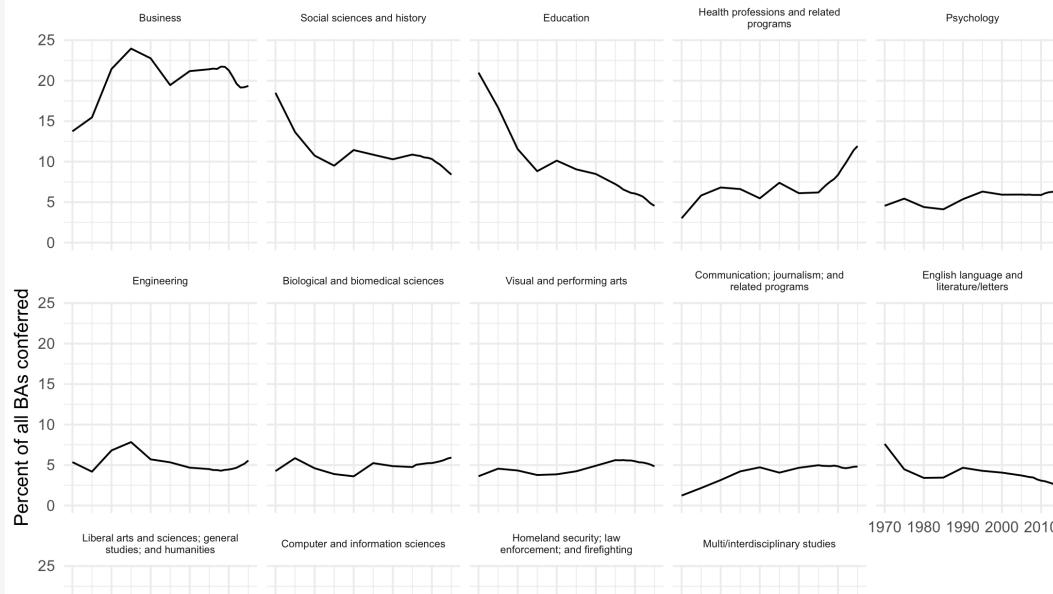
Workhorses



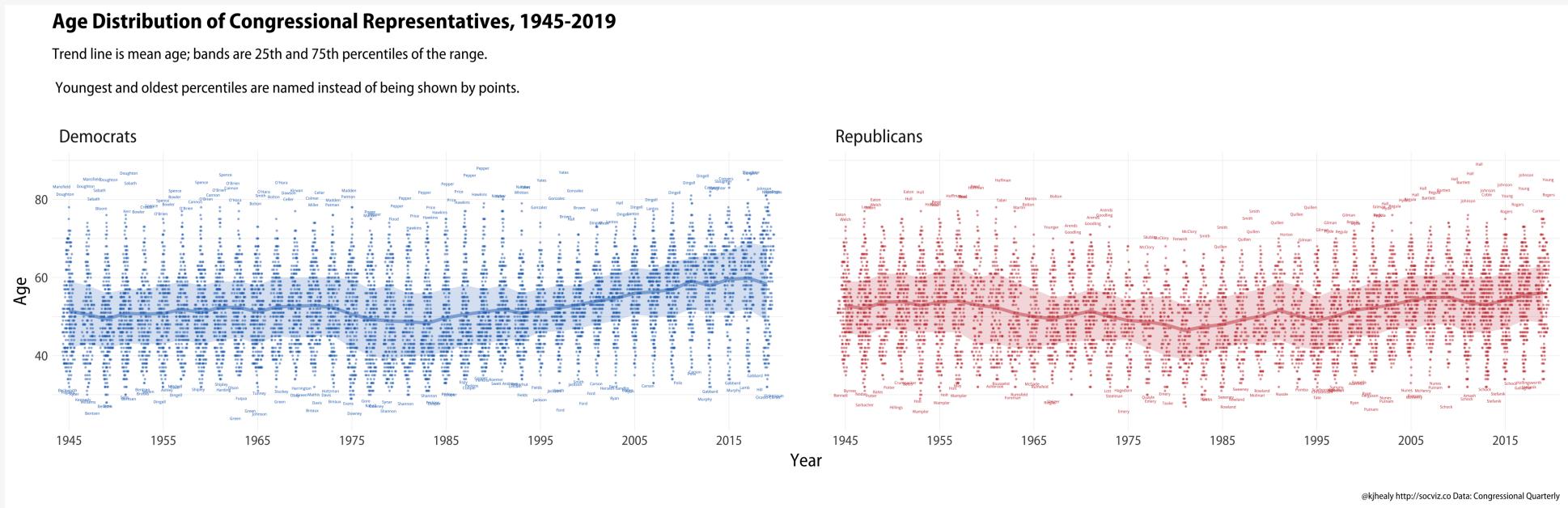
Workhorses

US Trends in Bachelor's Degrees Conferred, 1970-2015,
for Areas averaging more than 2% of all degrees

Observations are every 5 years from 1970-1995, and annually thereafter

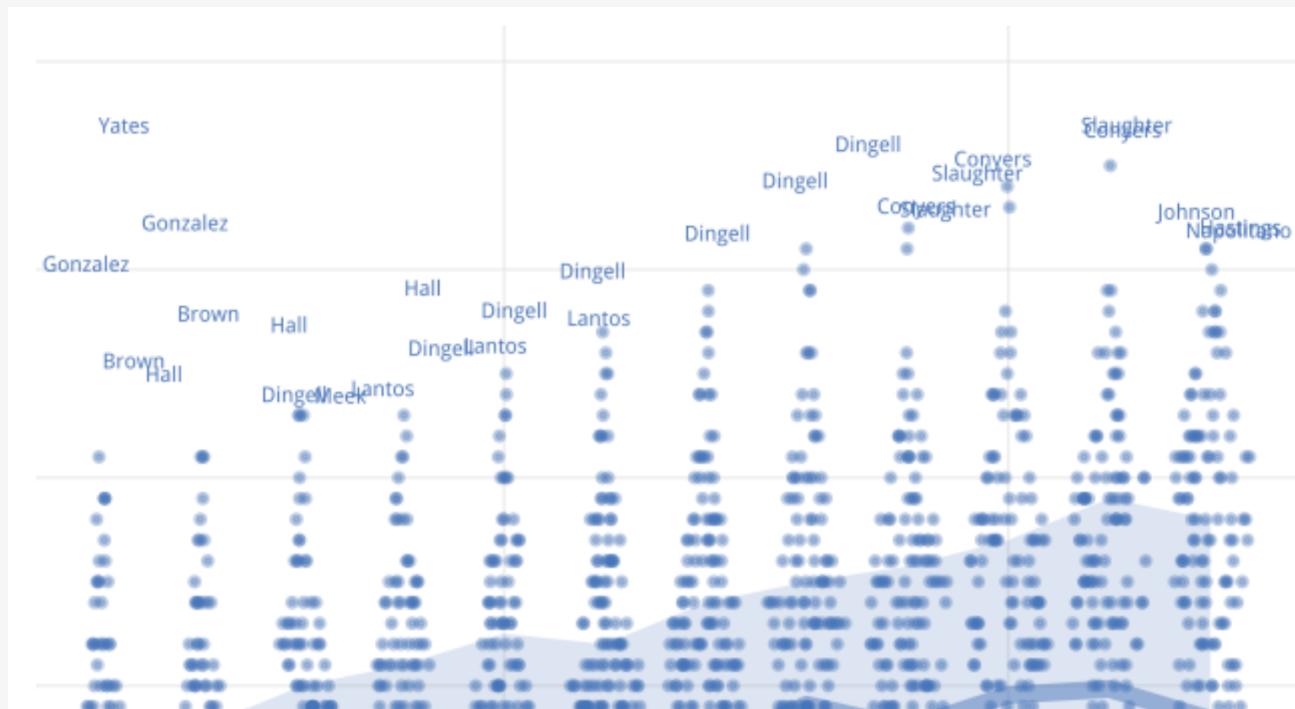


Show Ponies

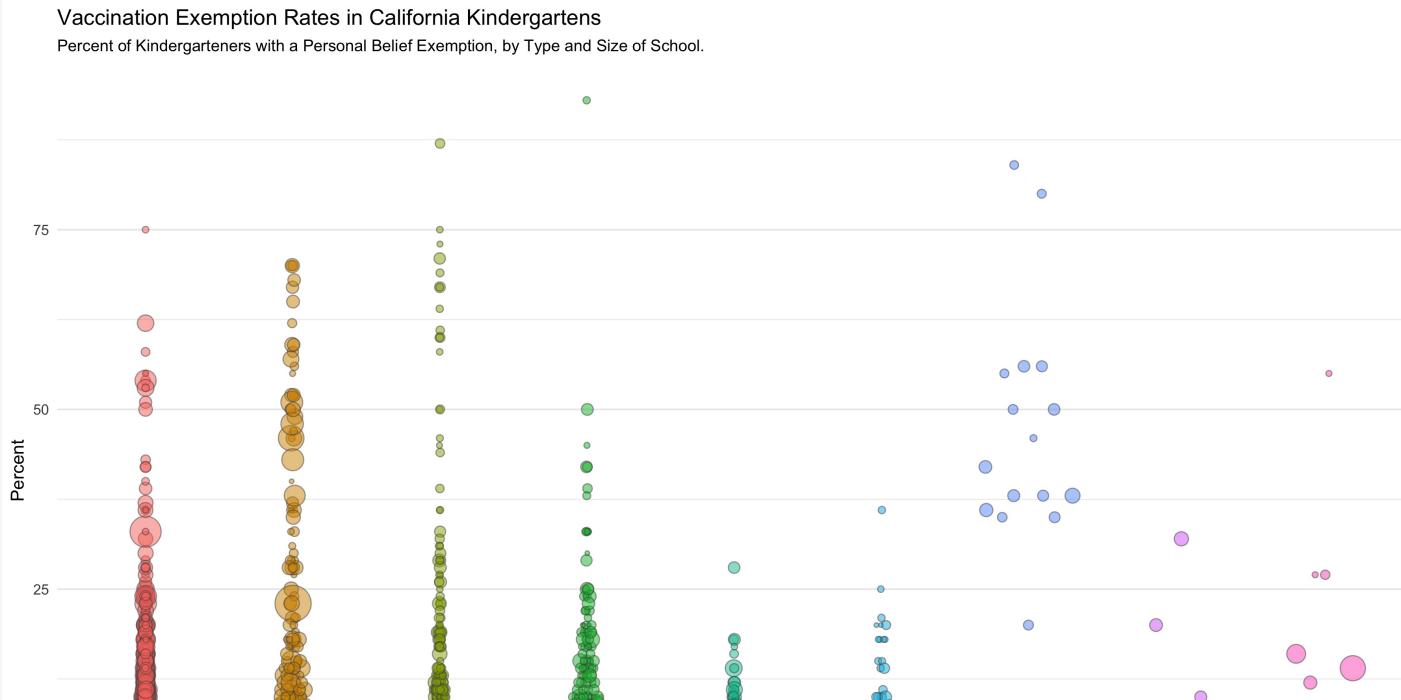


Congressional comparison

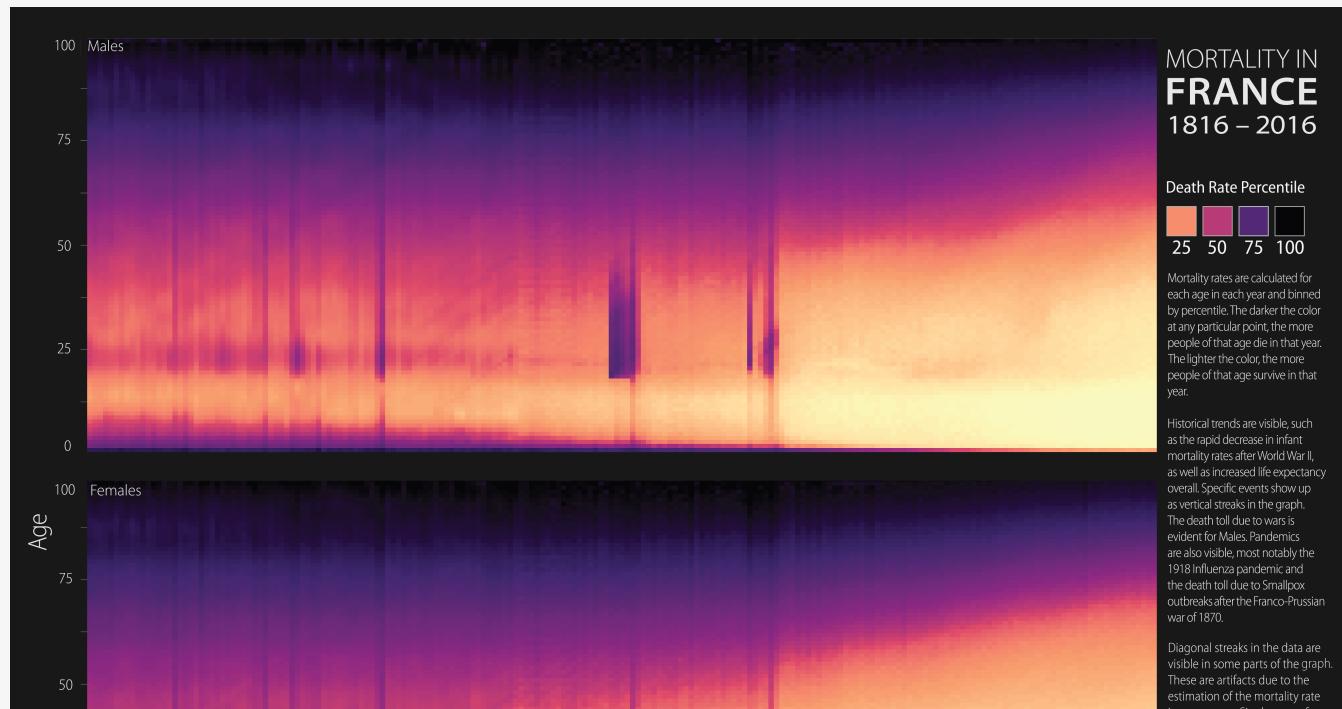
Show Ponies



Show Ponies



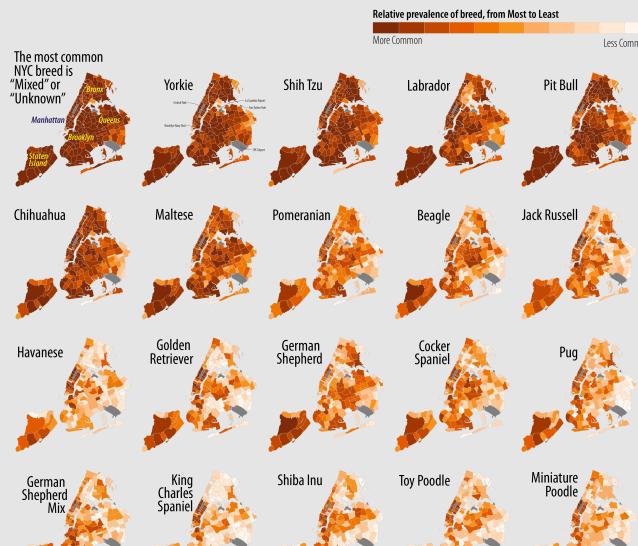
Show Ponies



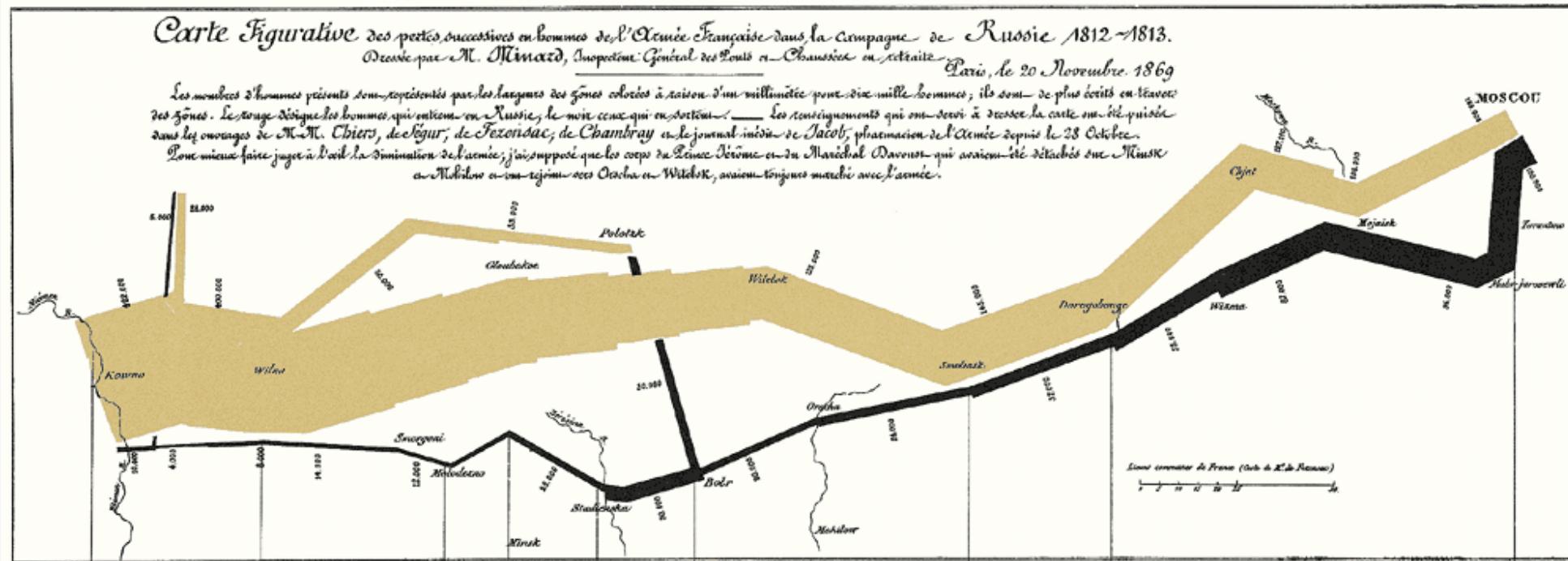
Show Ponies

Dogs of New York

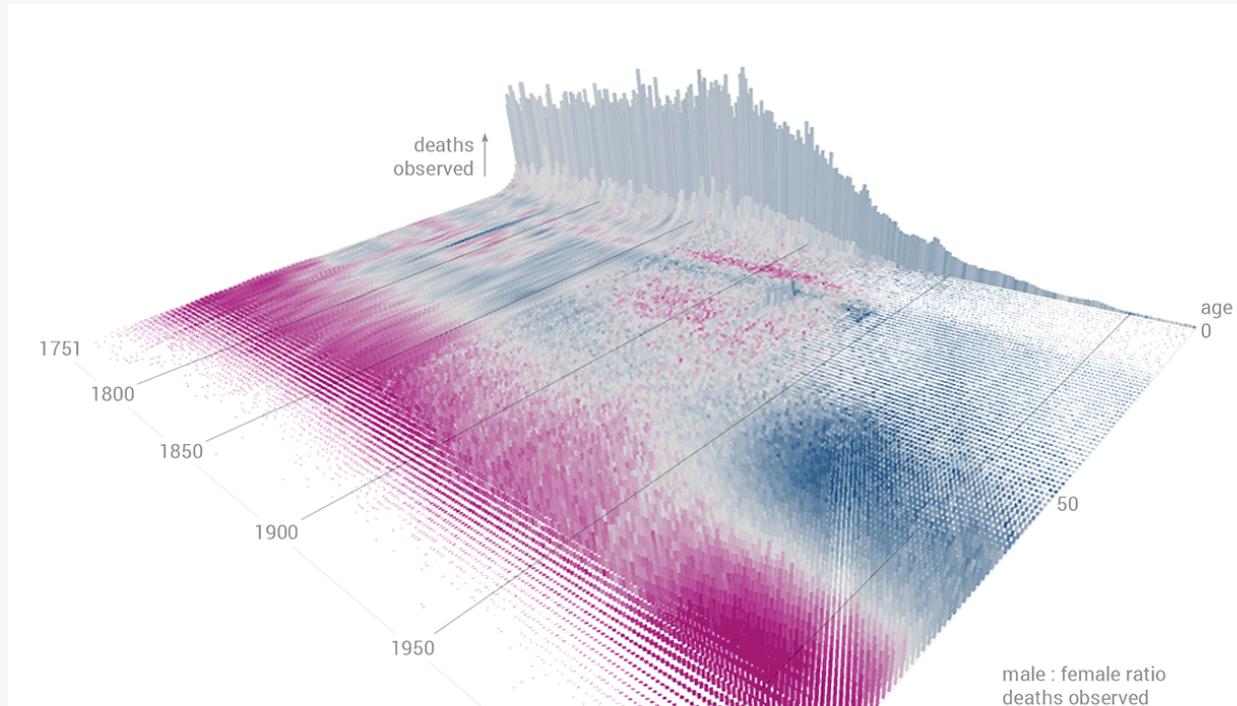
Based on data from New York City's Dog Licensing System, these maps show the relative prevalence of the twenty five most common breeds of dog, by zip code.



Unicorns ...



Unicorns ...



... or monsters

