

Basic Spatial Arrangements

CSC444

Techniques, Lecture 1

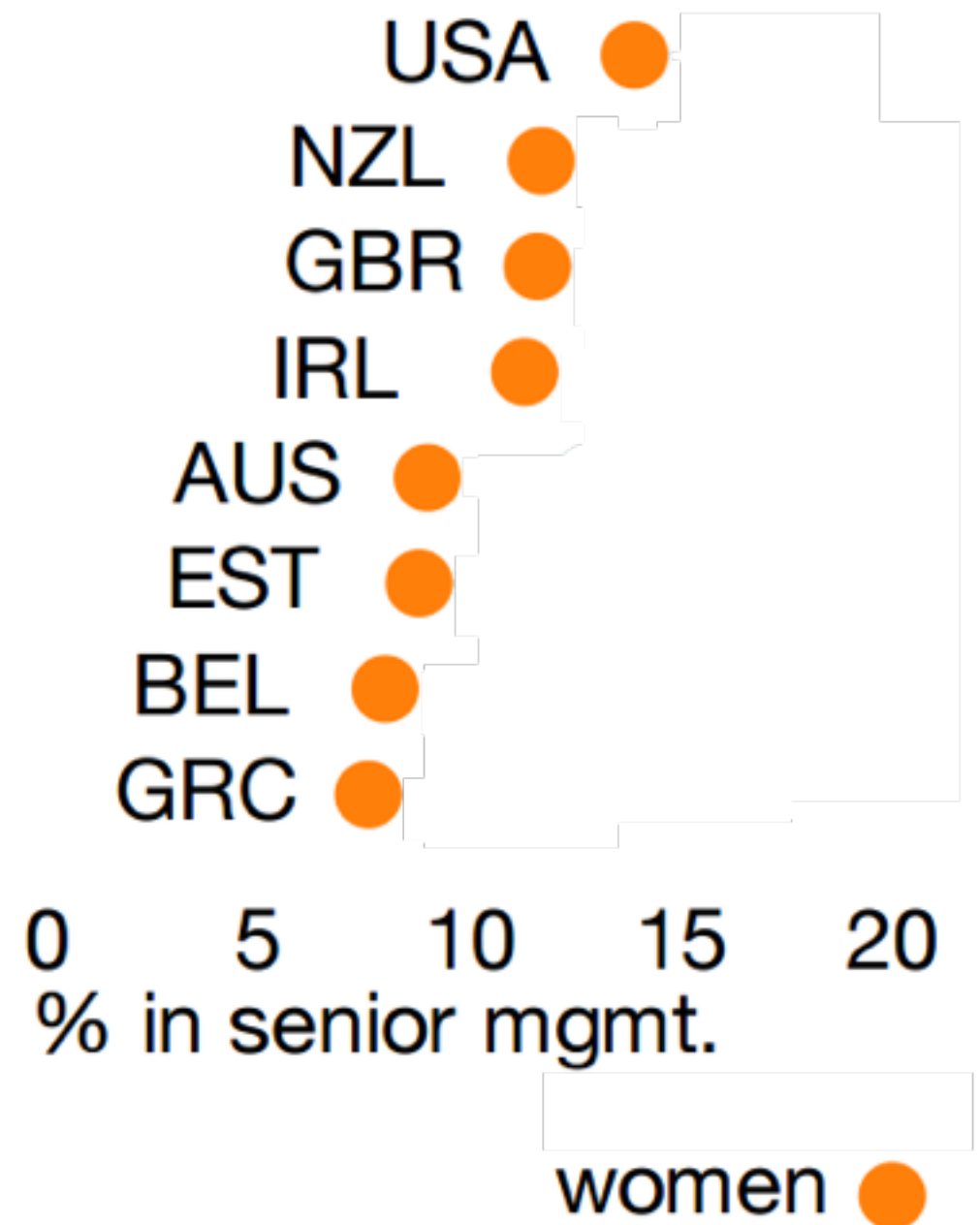
Suggested reading:

Munzner's Visualization Analysis and Design, **Chapter 7**

Few dimensions

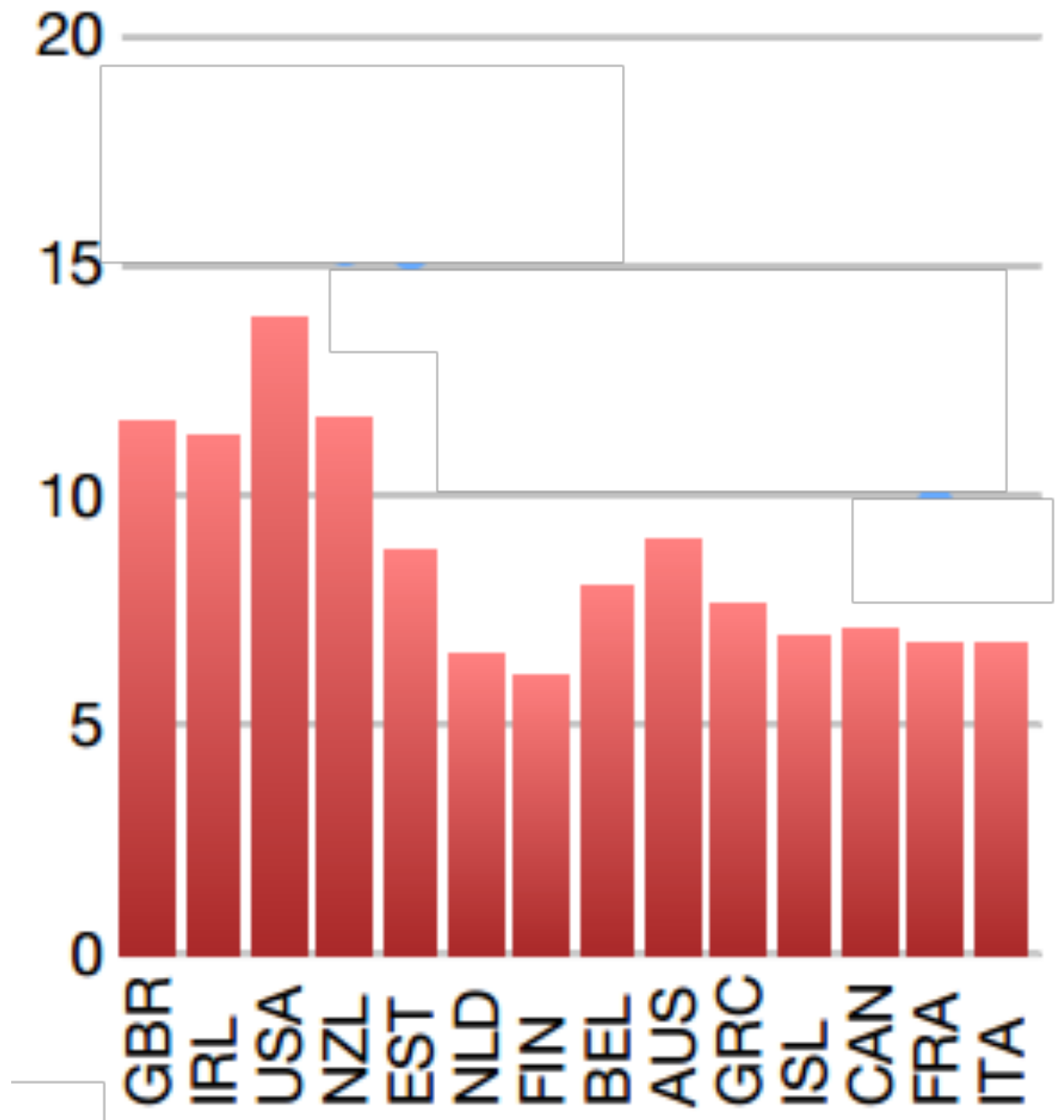
Dot Plots

- One categorical attribute (usually a “key”)
- One quantitative attribute (usually a “value”)

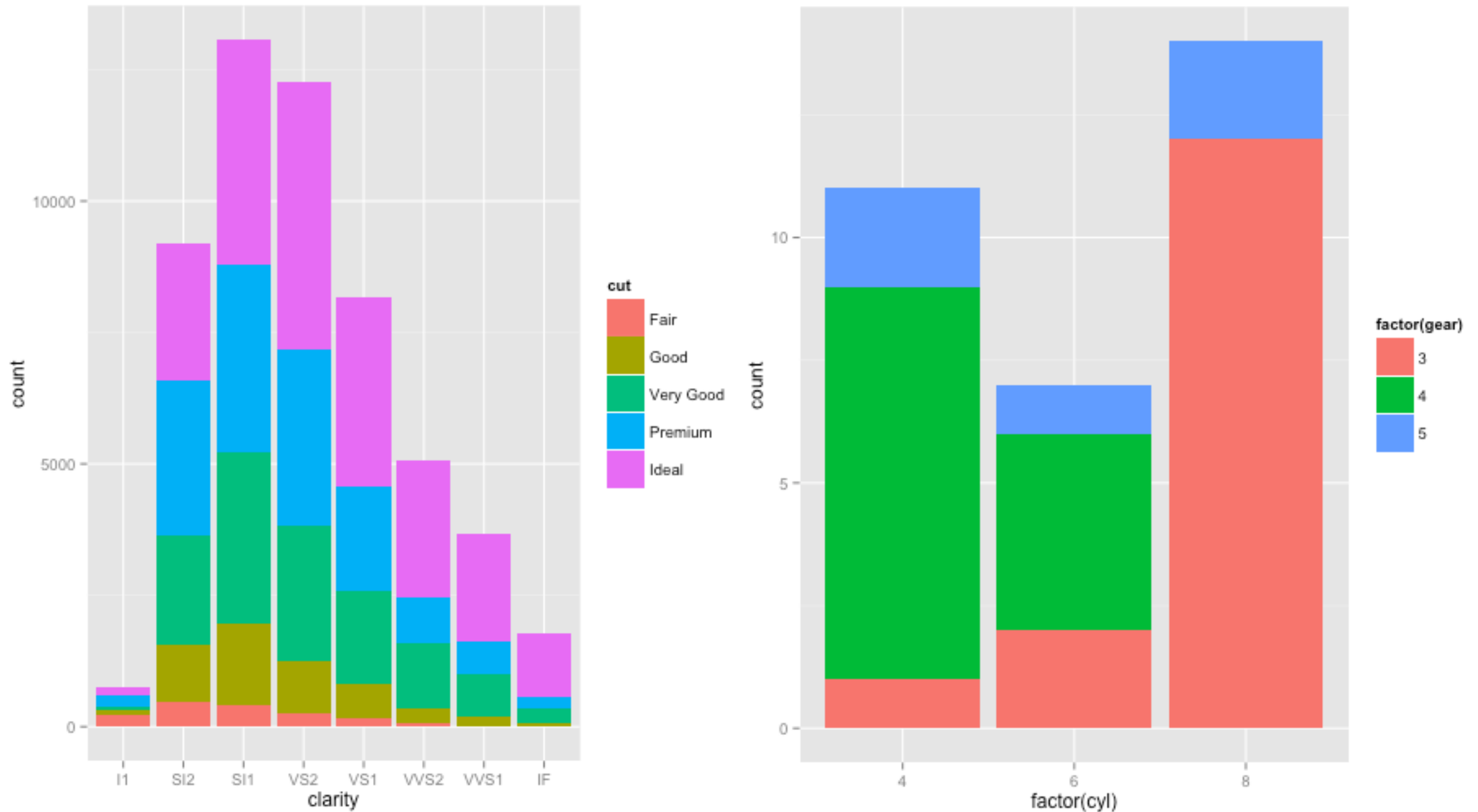


Bar Charts

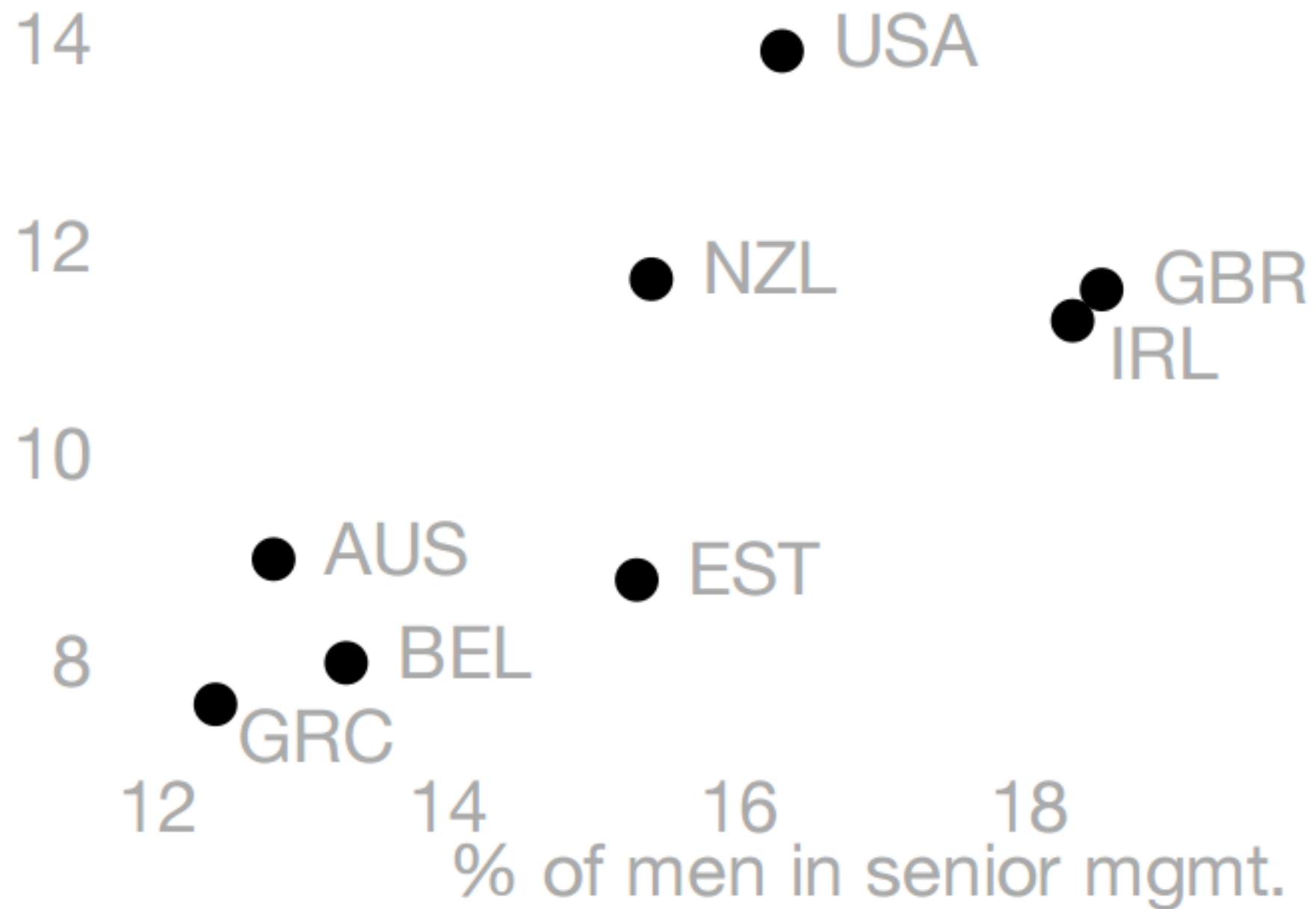
- One categorical attribute (usually a “key”)
- One quantitative attribute (usually a “value”)
- But usually not the best option, given Cleveland and McGill



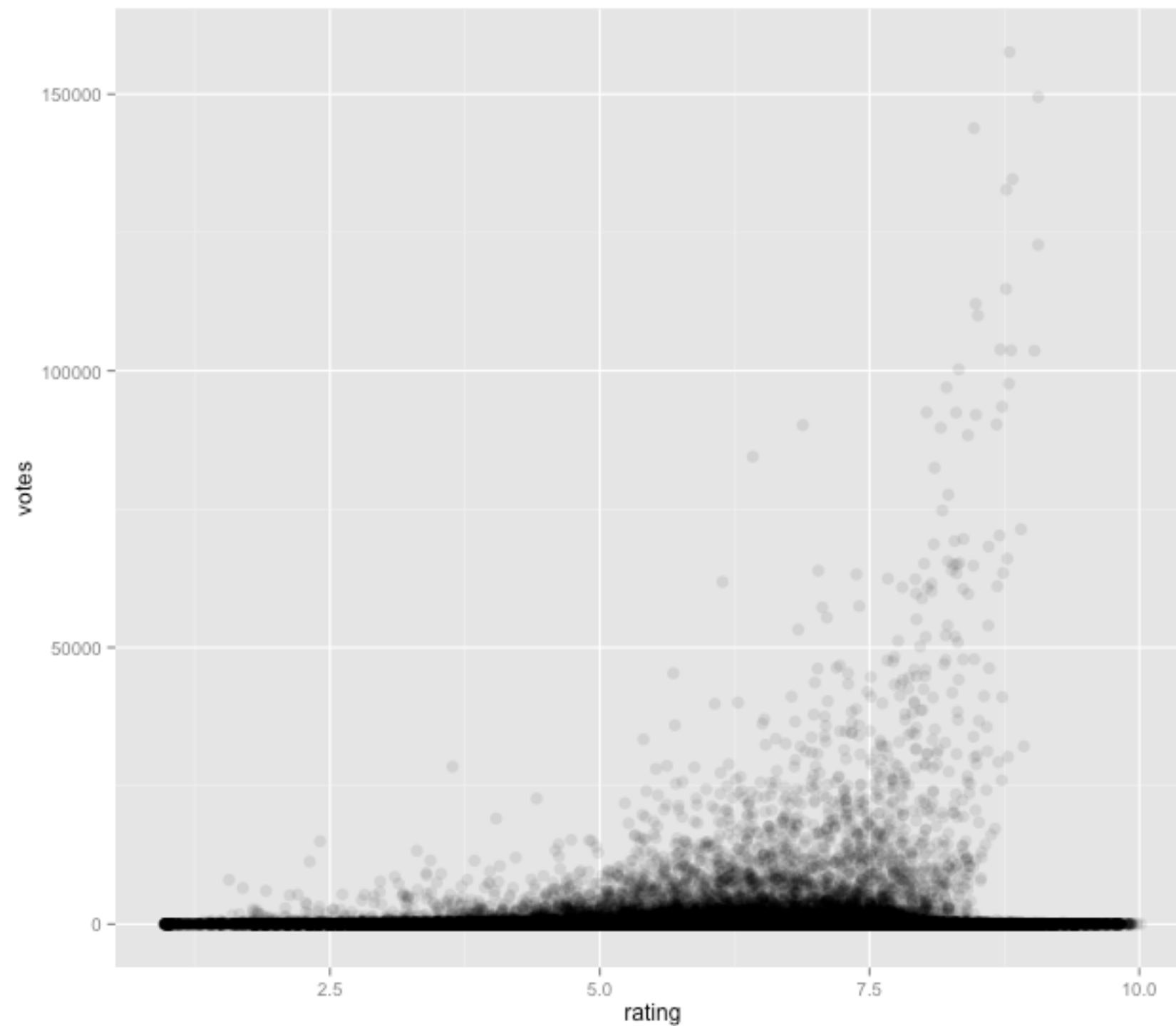
Stacked Bar Charts



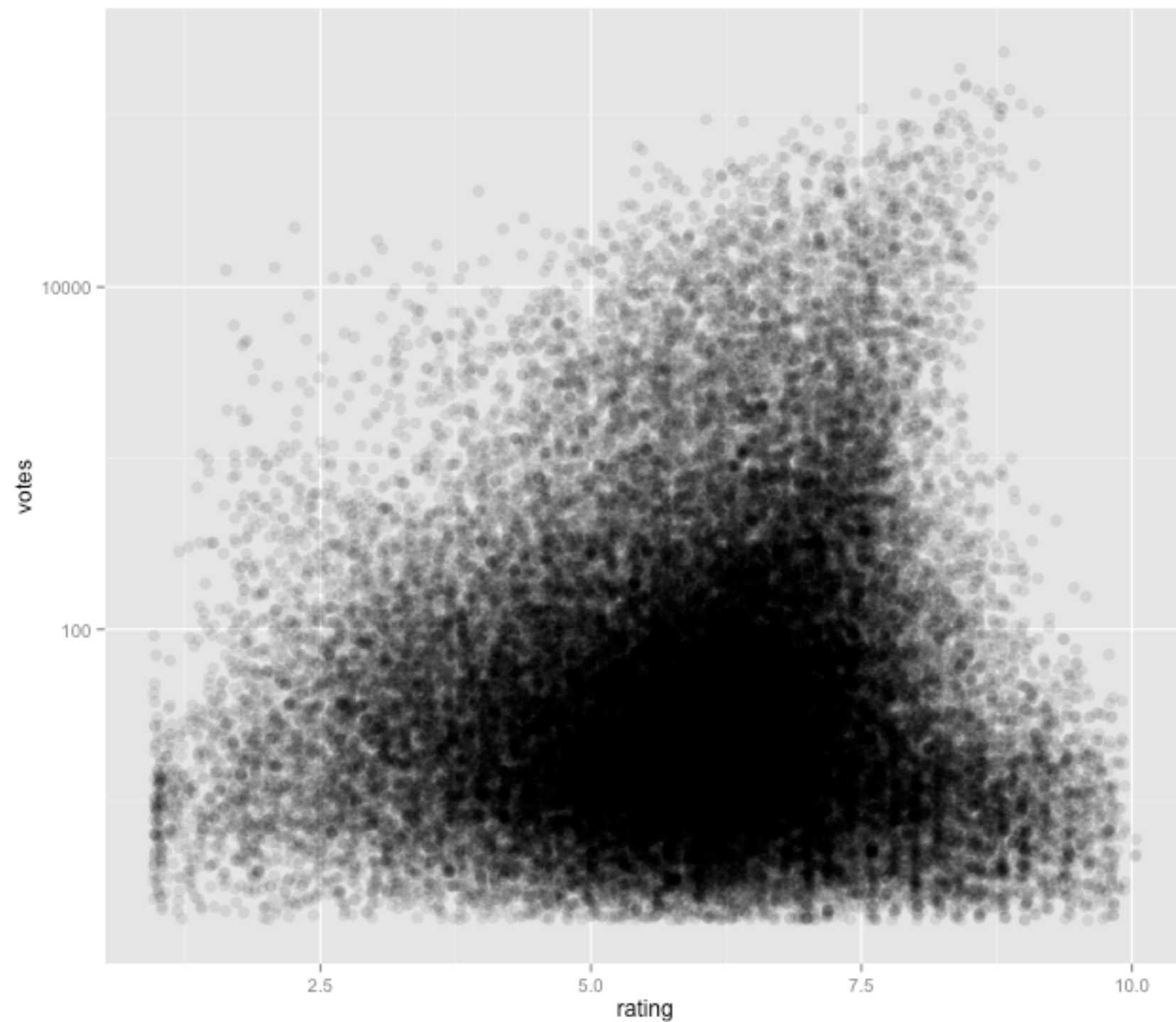
Scatterplots



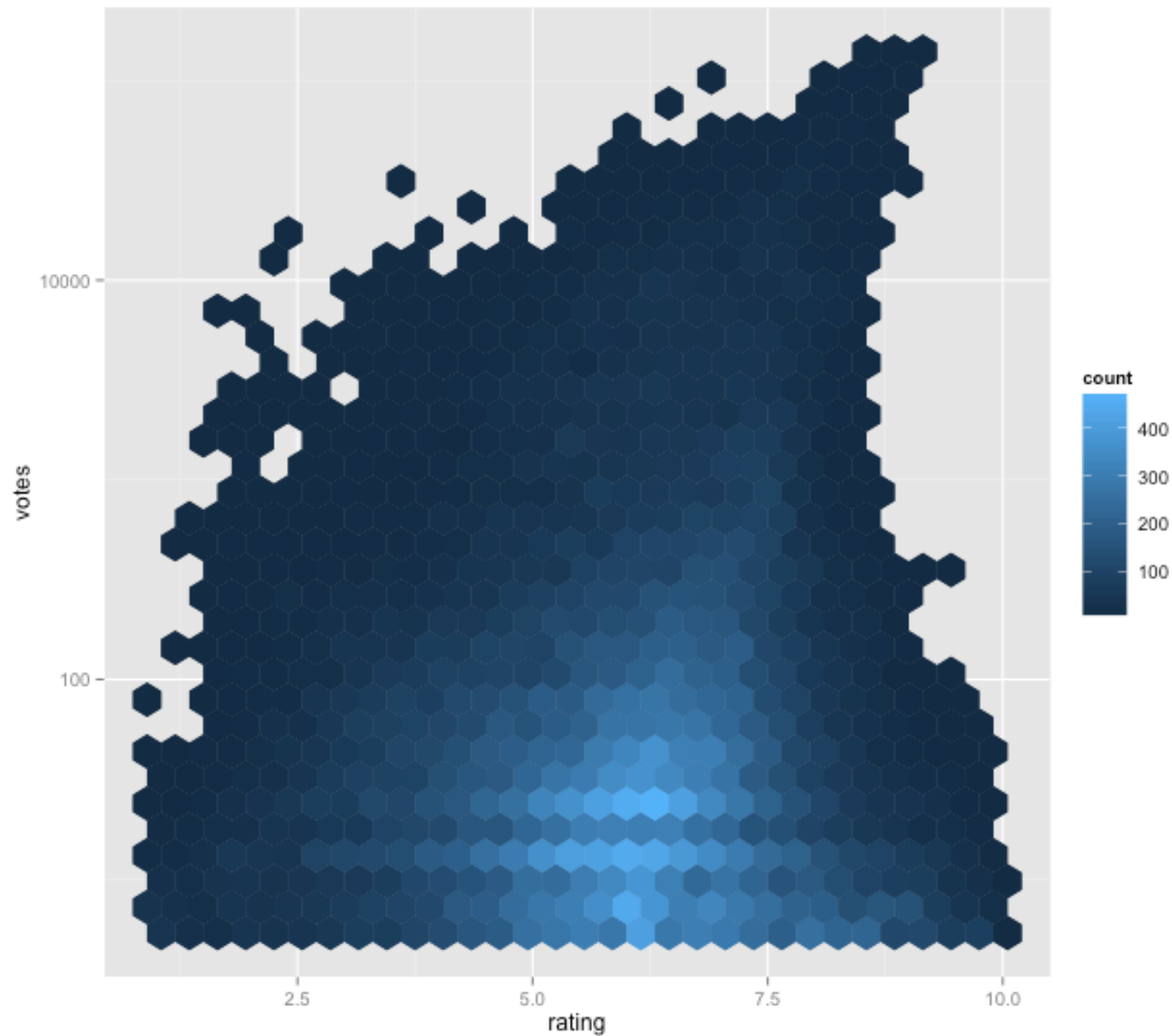
Transformations



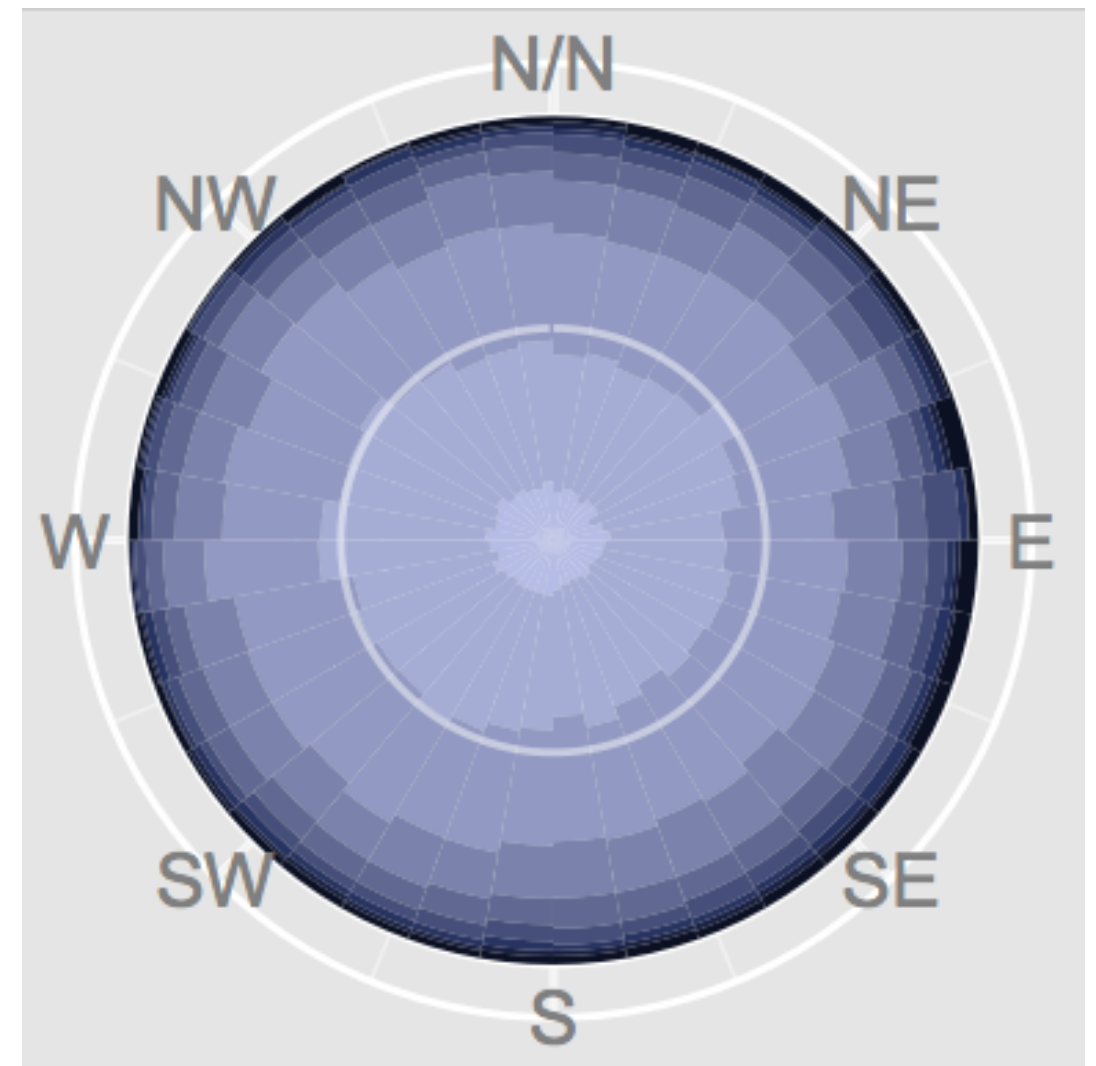
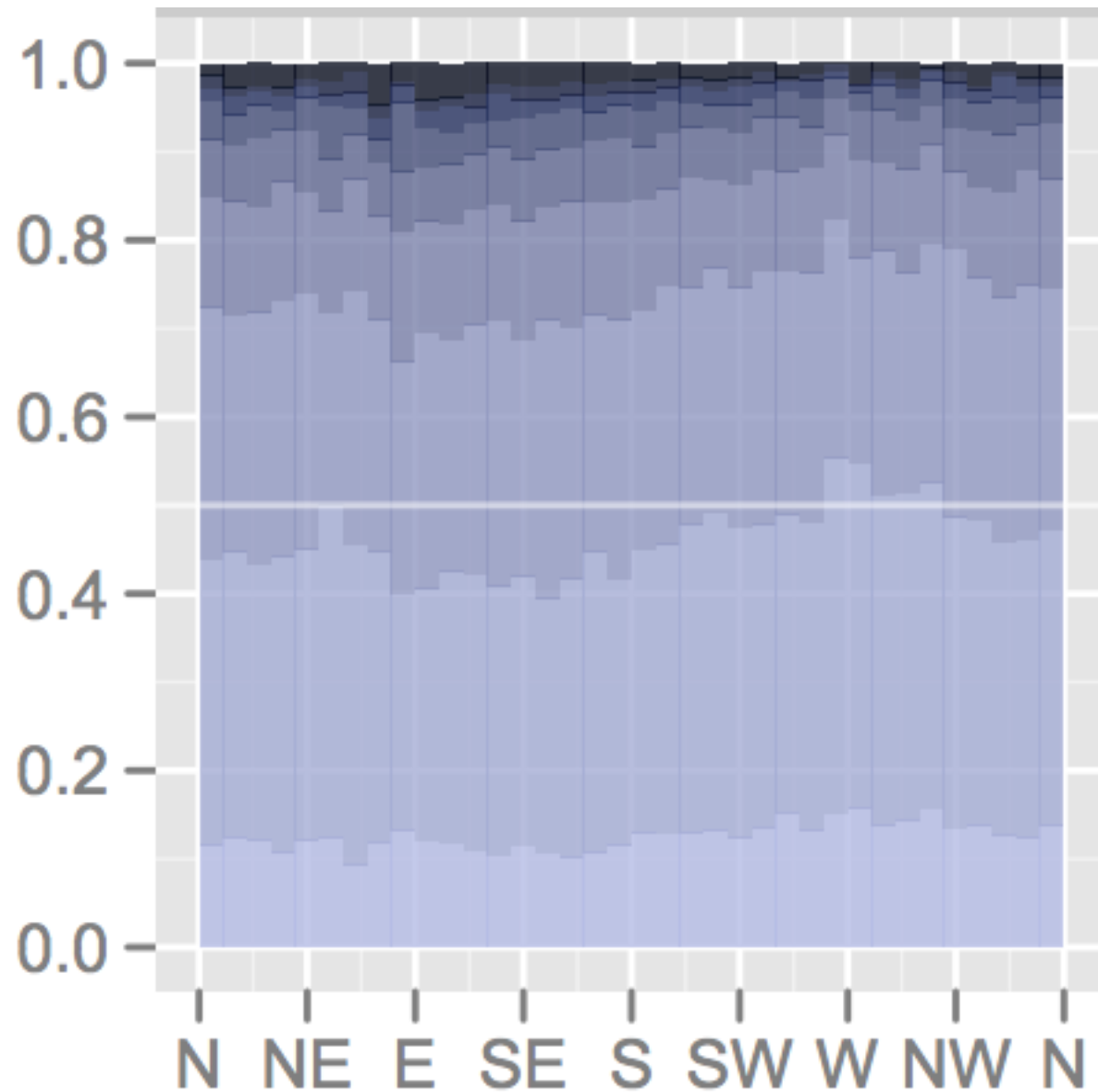
Transformations



Transformations



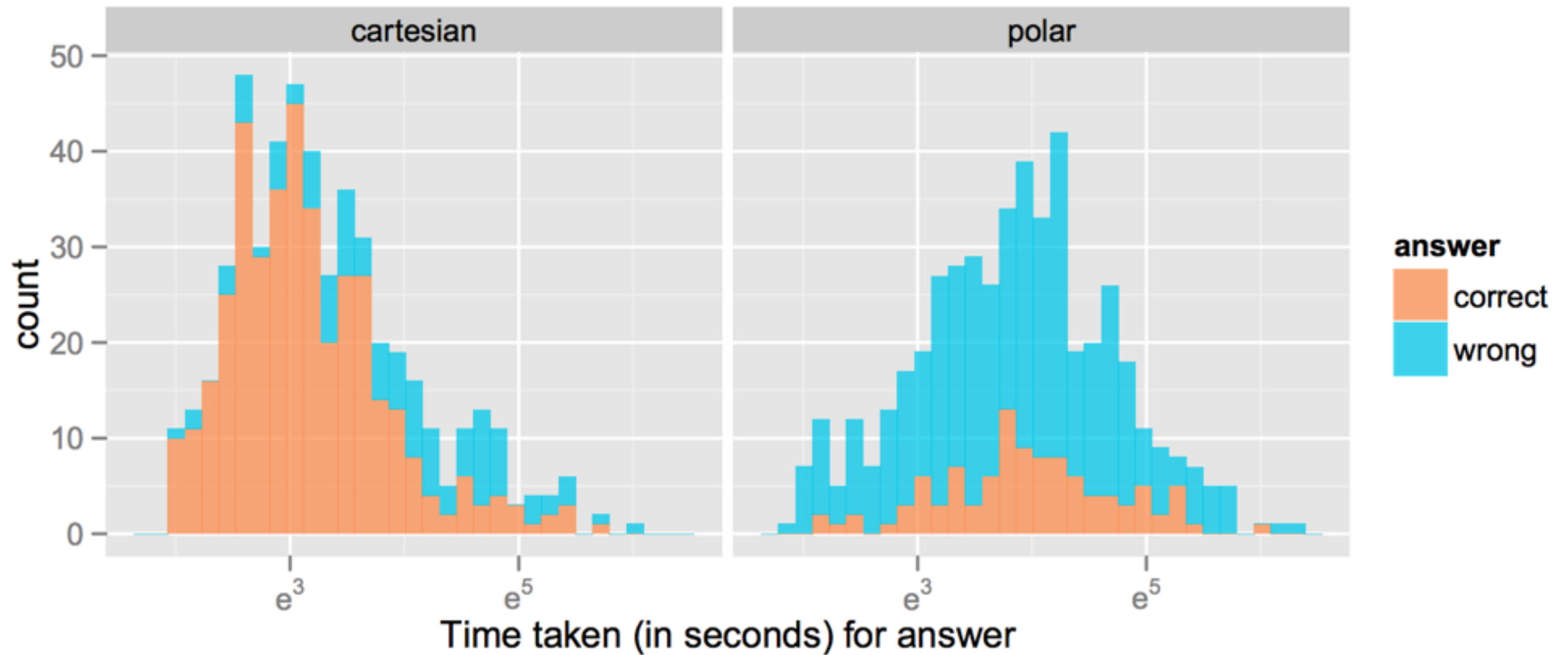
Transformations



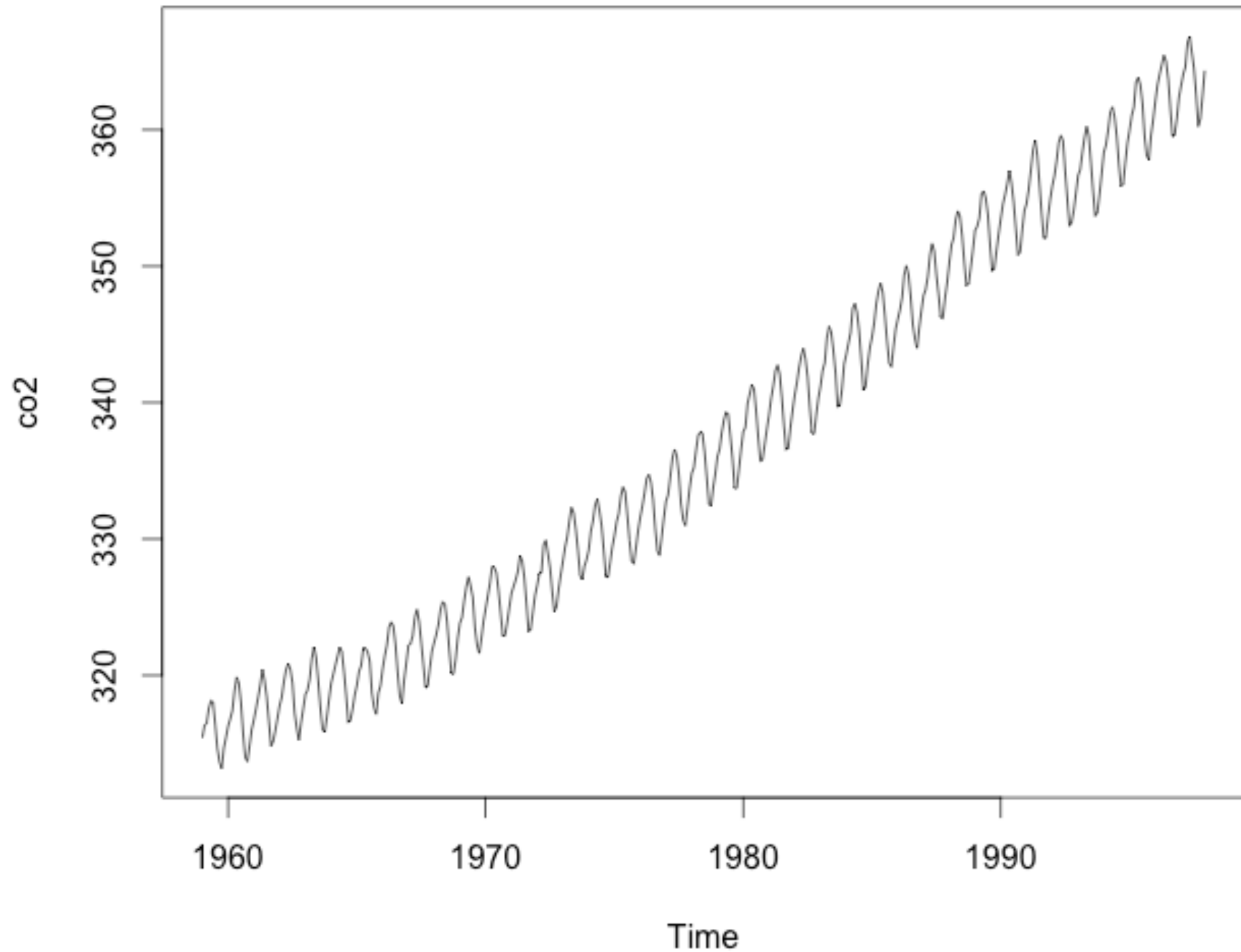
Hoffman et al., TVCG 2012

BUT

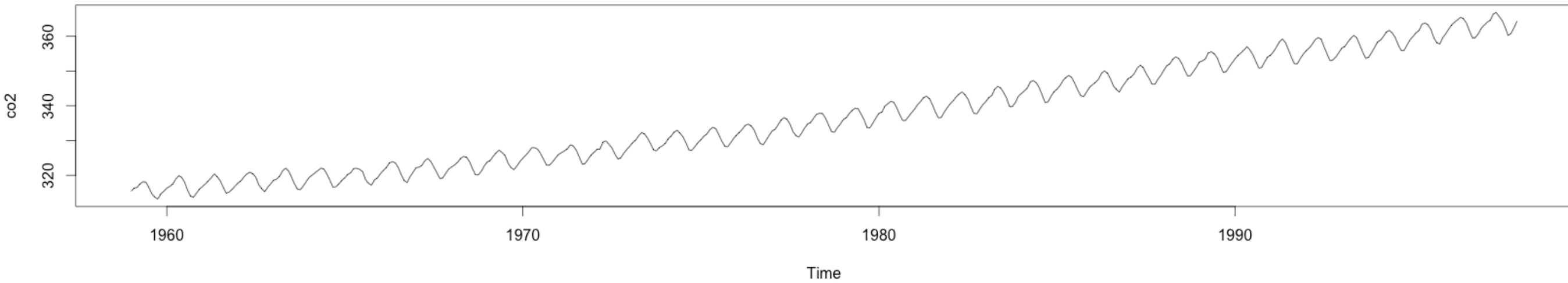
Transformations



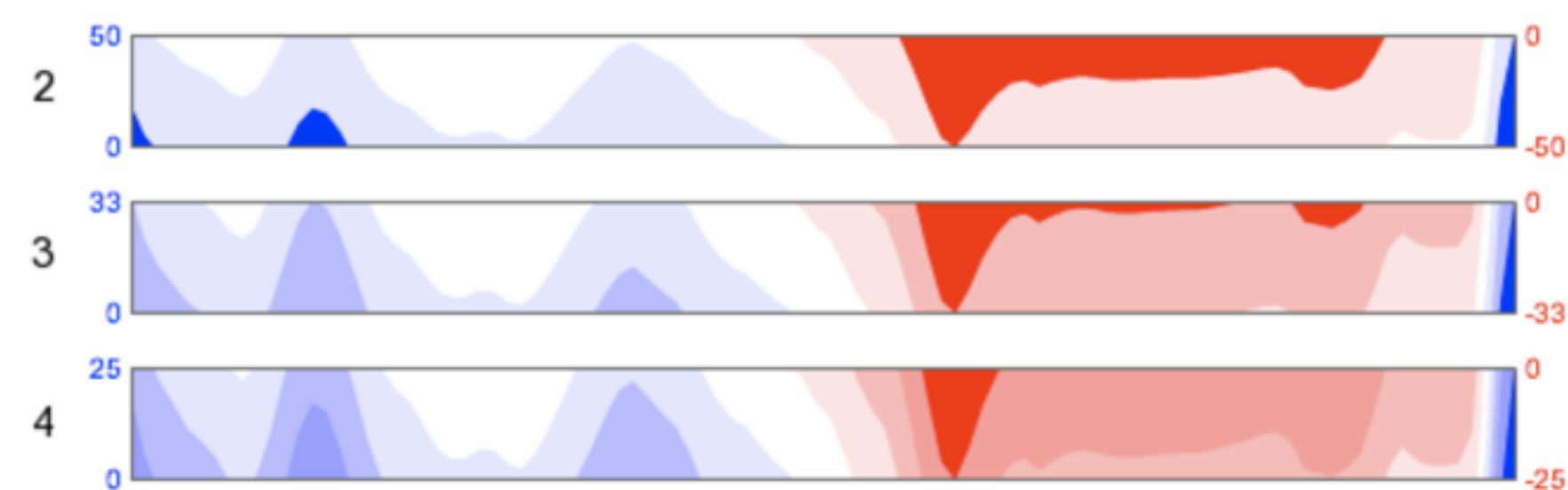
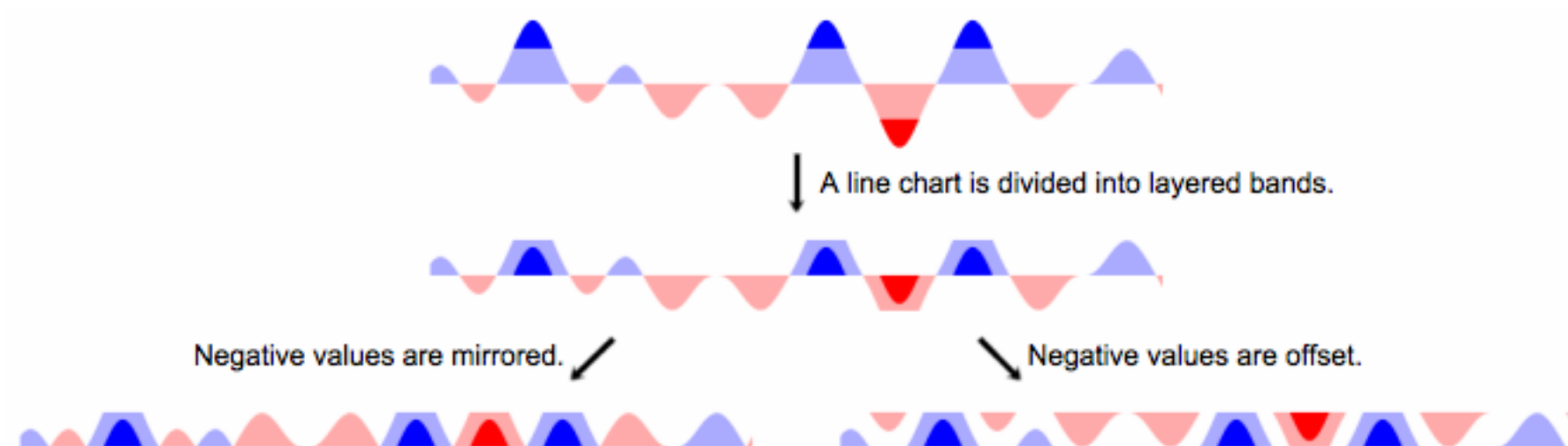
Line Charts



Bank to 45 degrees

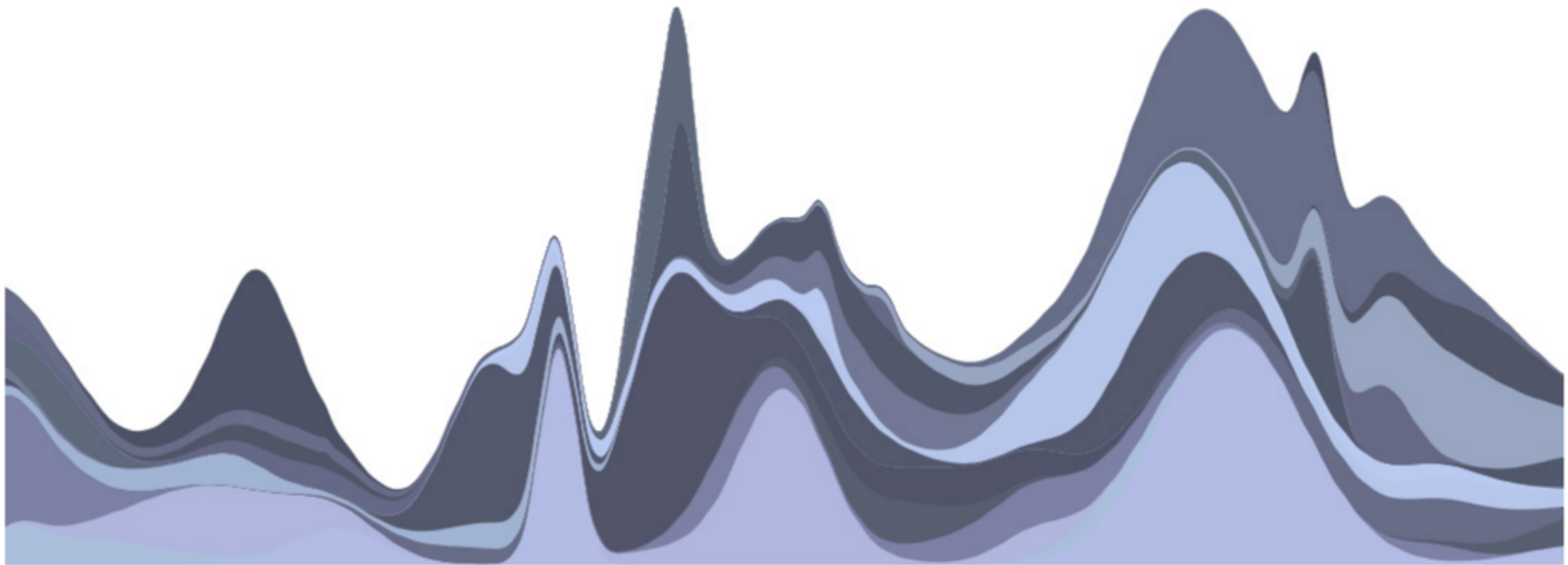


Horizon Charts



<http://bl.ocks.org/mbostock/1483226>

Streamgraphs



<http://www.leebyron.com/else/streamgraph/>

Streamgraphs

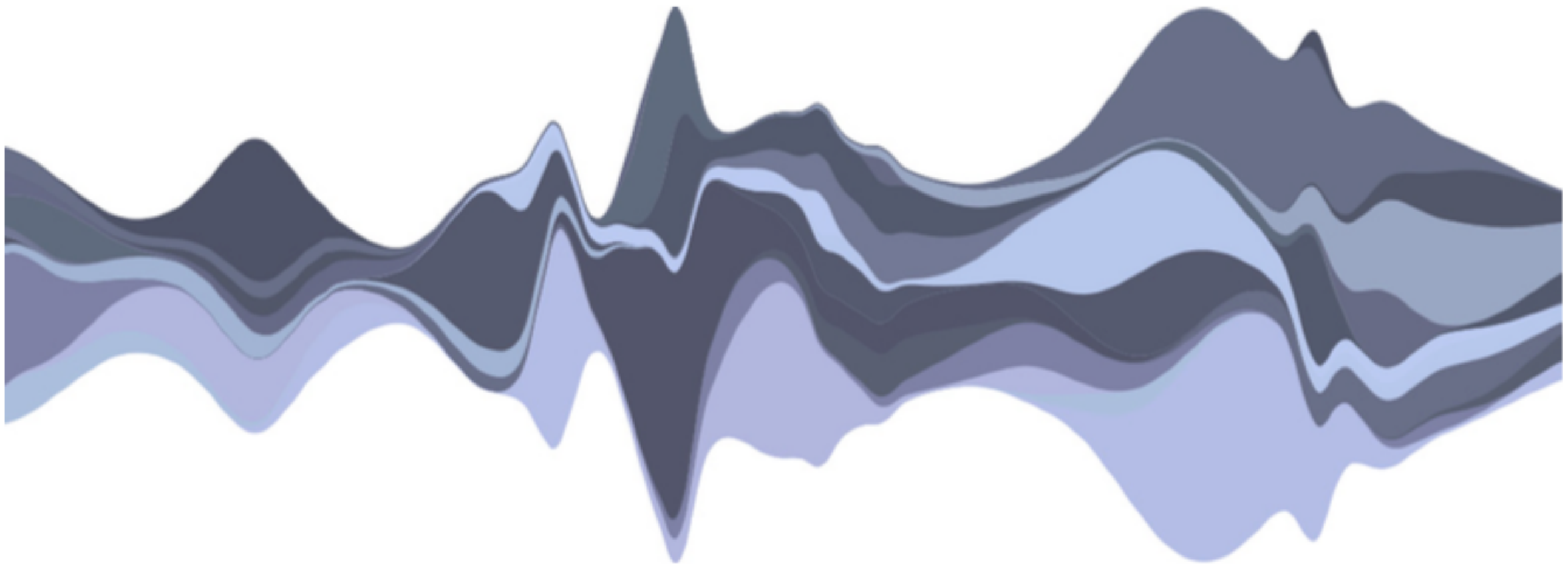


fig 6 – the same data set using the ThemeRiver layout algorithm

Streamgraphs

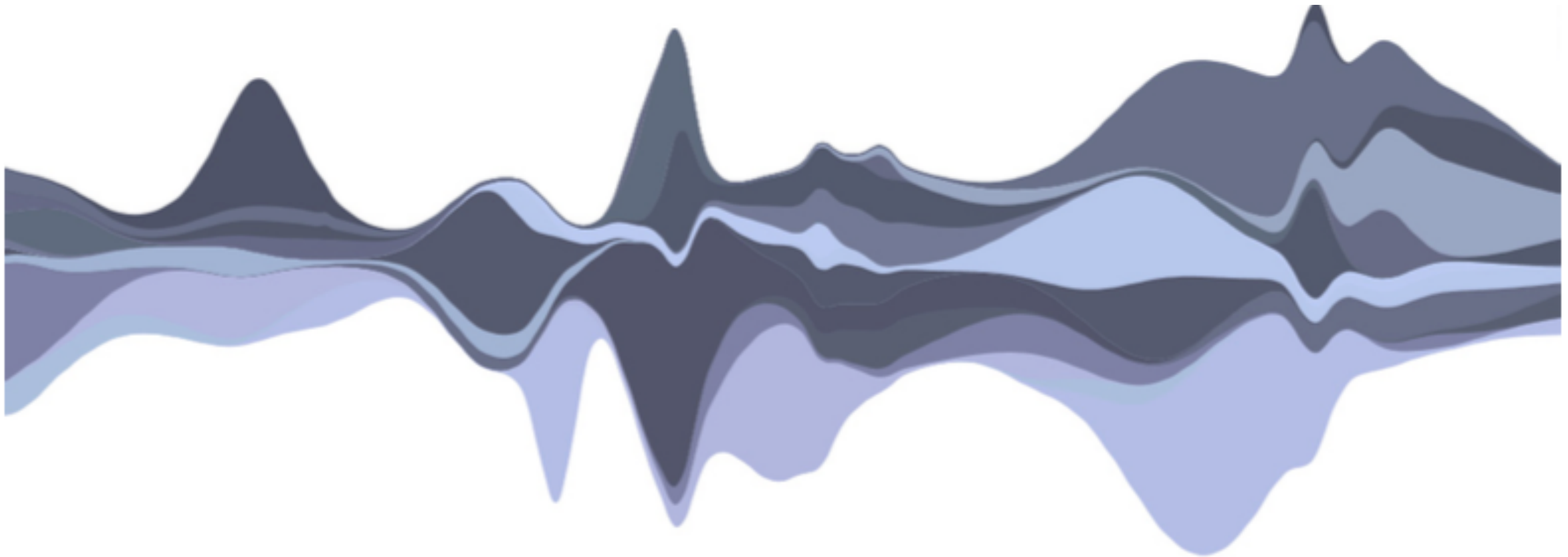


fig 7 – the same data set optimized to reduce the "wobble" function, or overall variation in slope

Streamgraphs

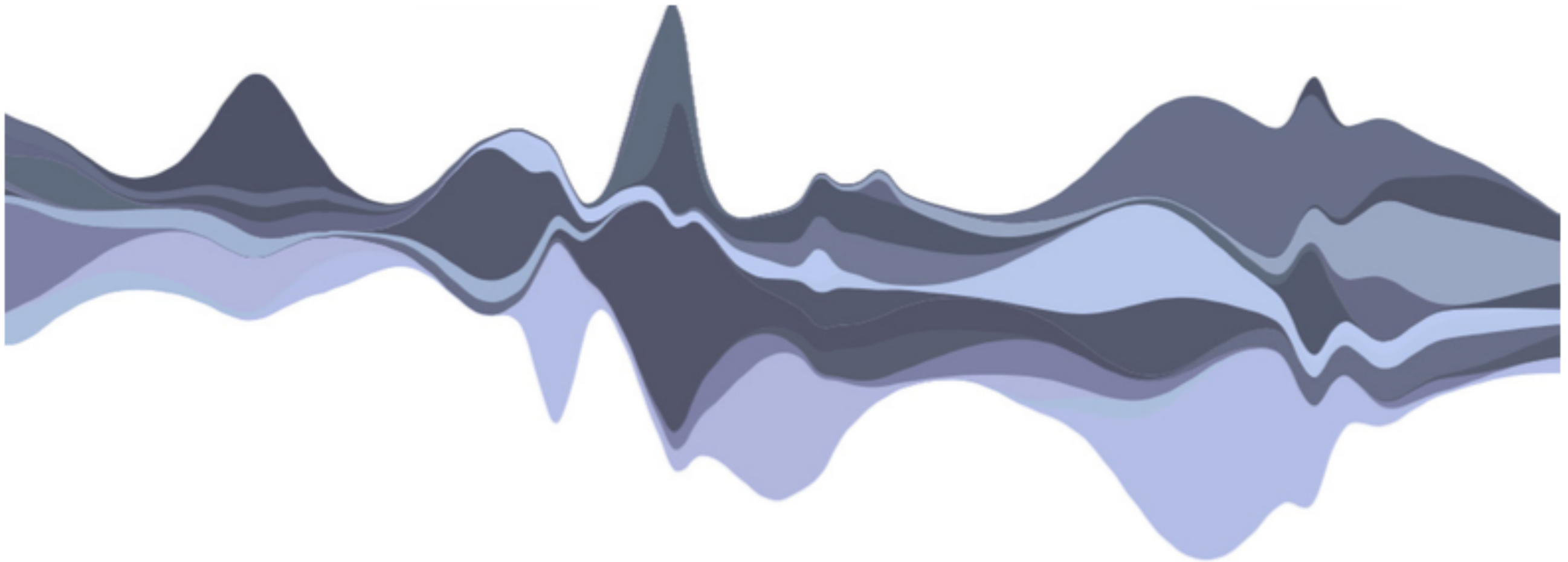
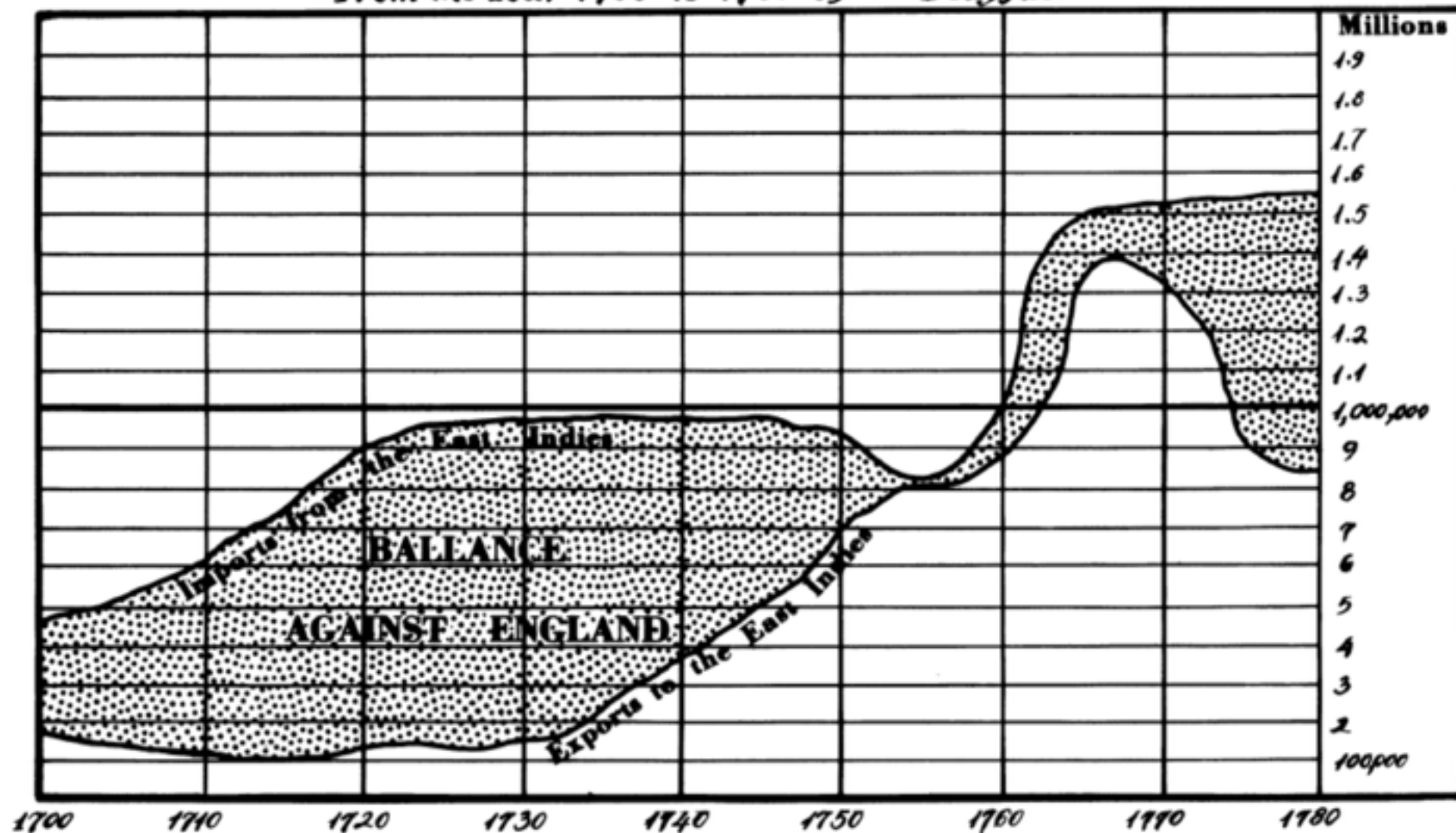


fig 8 – the same data set optimized to reduce the “weighted_wiggle,” the algorithm used in Streamgraph

Streamgraphs

CHART of EXPORTS and IMPORTS to and from the EAST INDIES
From the Year 1700 to 1780 by W. Playfair



The Bottom Line is Divided into Years the Right hand Line into HUNDRED THOUSAND POUNDS
Single the Right *is from Page 31st* *Published in the Act Done 16th Aug. 1785*

Streamgraphs

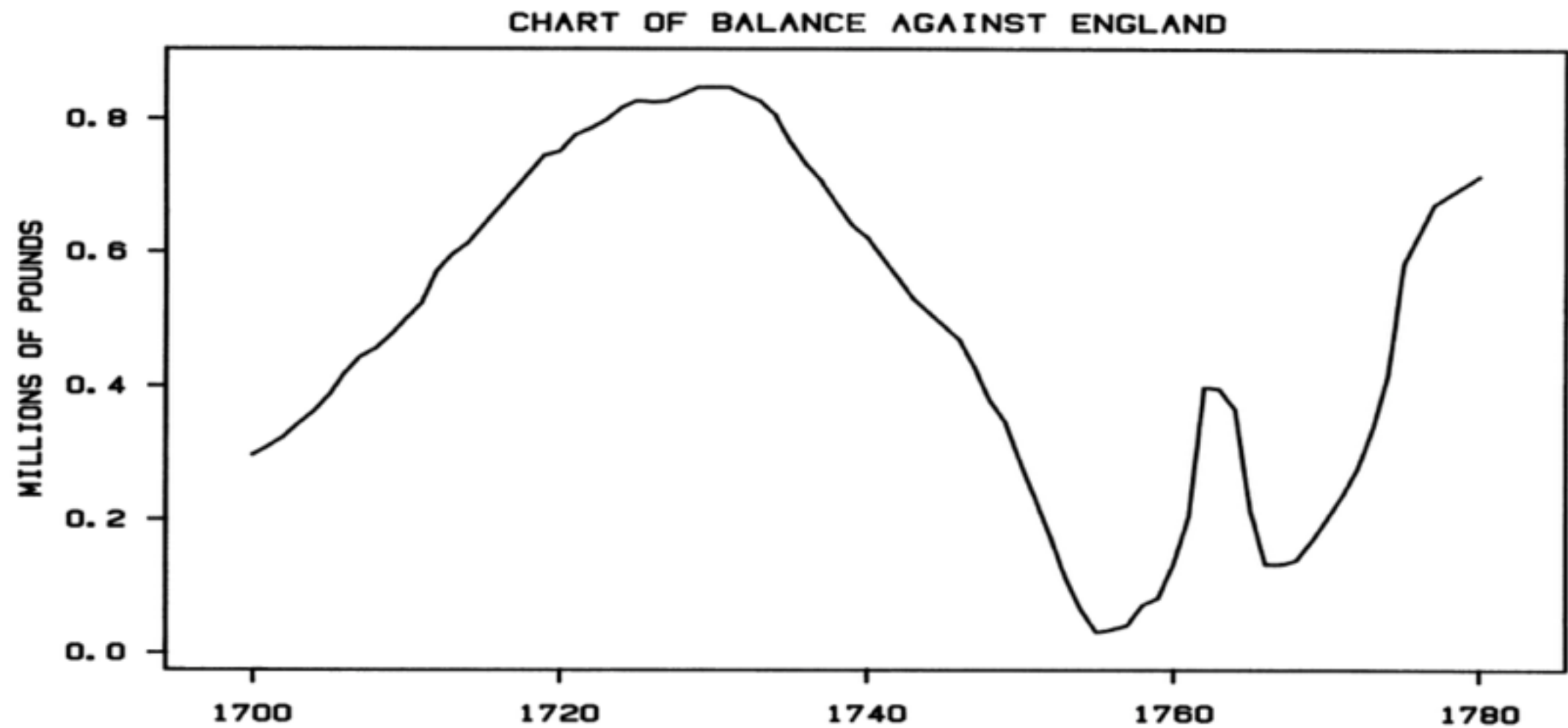


Figure 28. Playfair data.

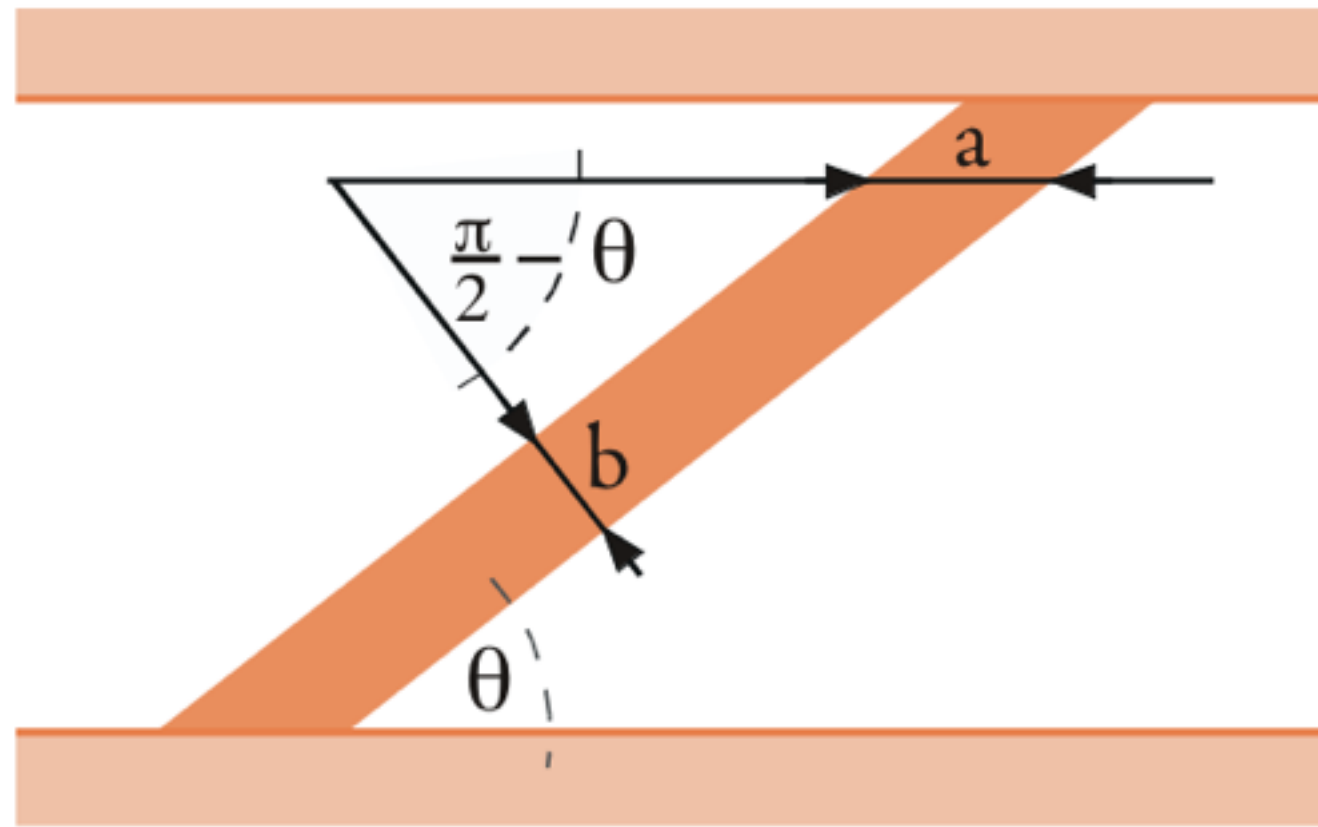
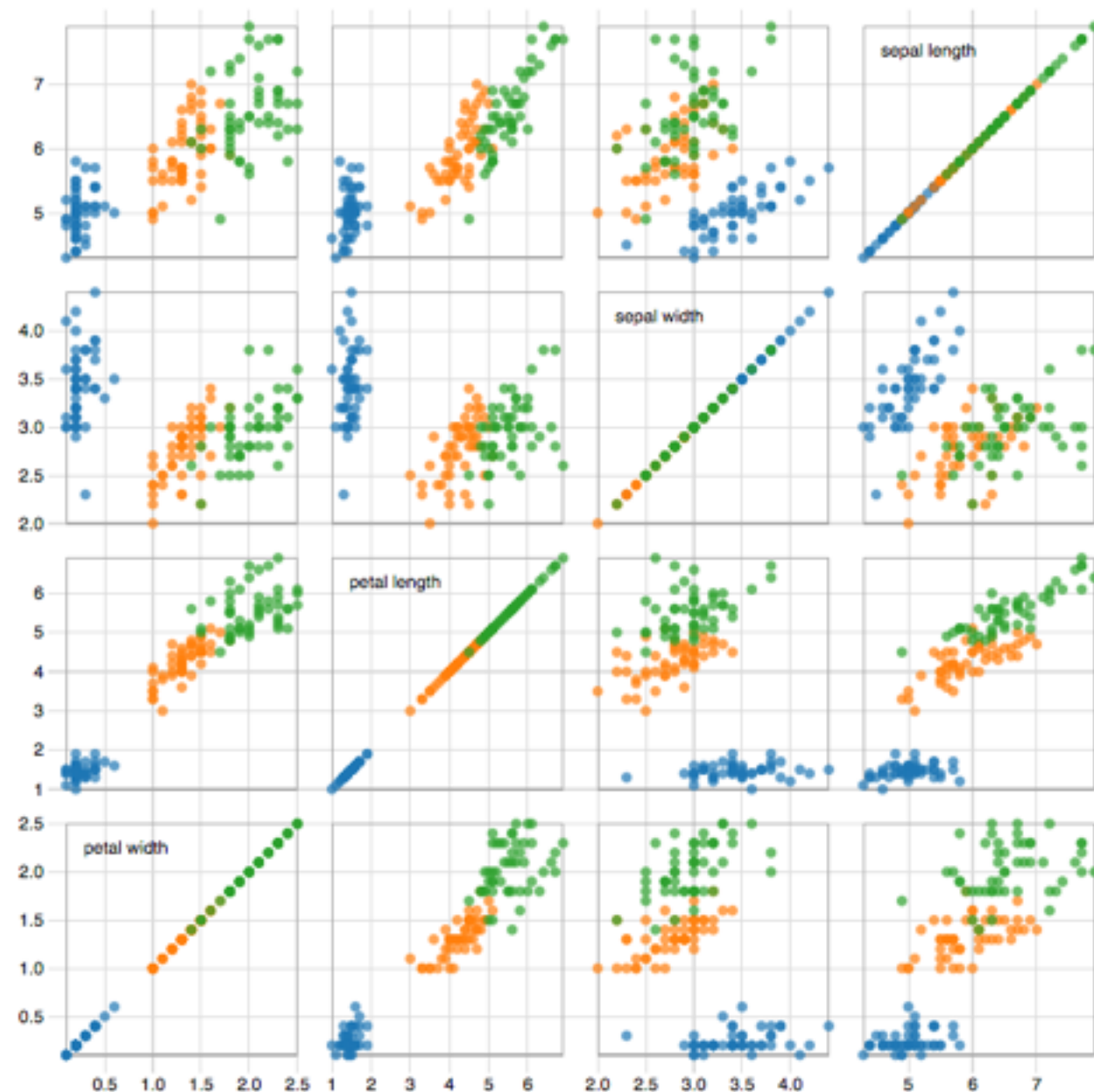


Fig. 5. Sketch of line width assessments: (a) is showing horizontal width, (b) shows width orthogonal to the slope. Survey results in section 4.2 indicate that observers associate line width more with orthogonal width w_o (b) than horizontal width w_h (a).

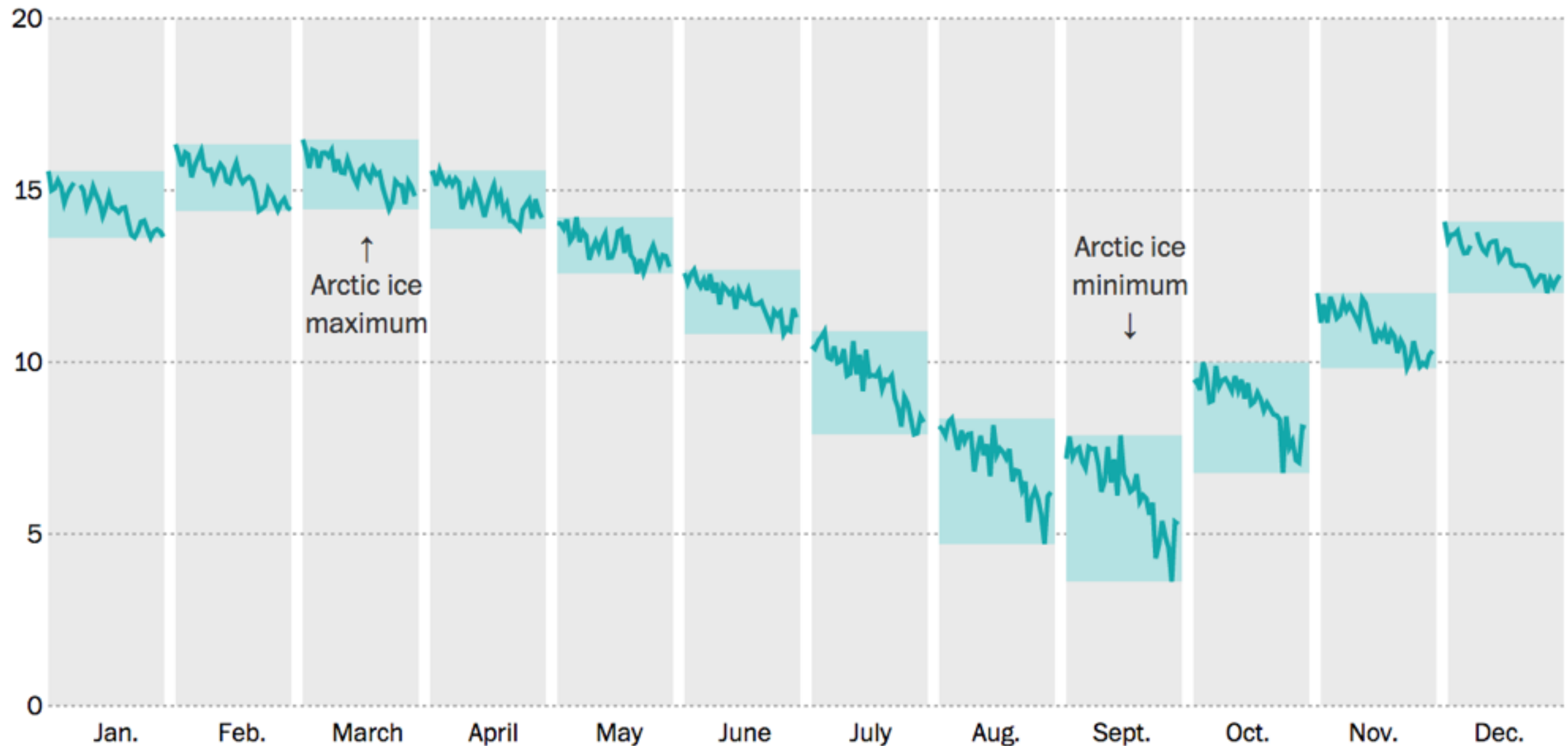
Many dimensions

Small Multiples



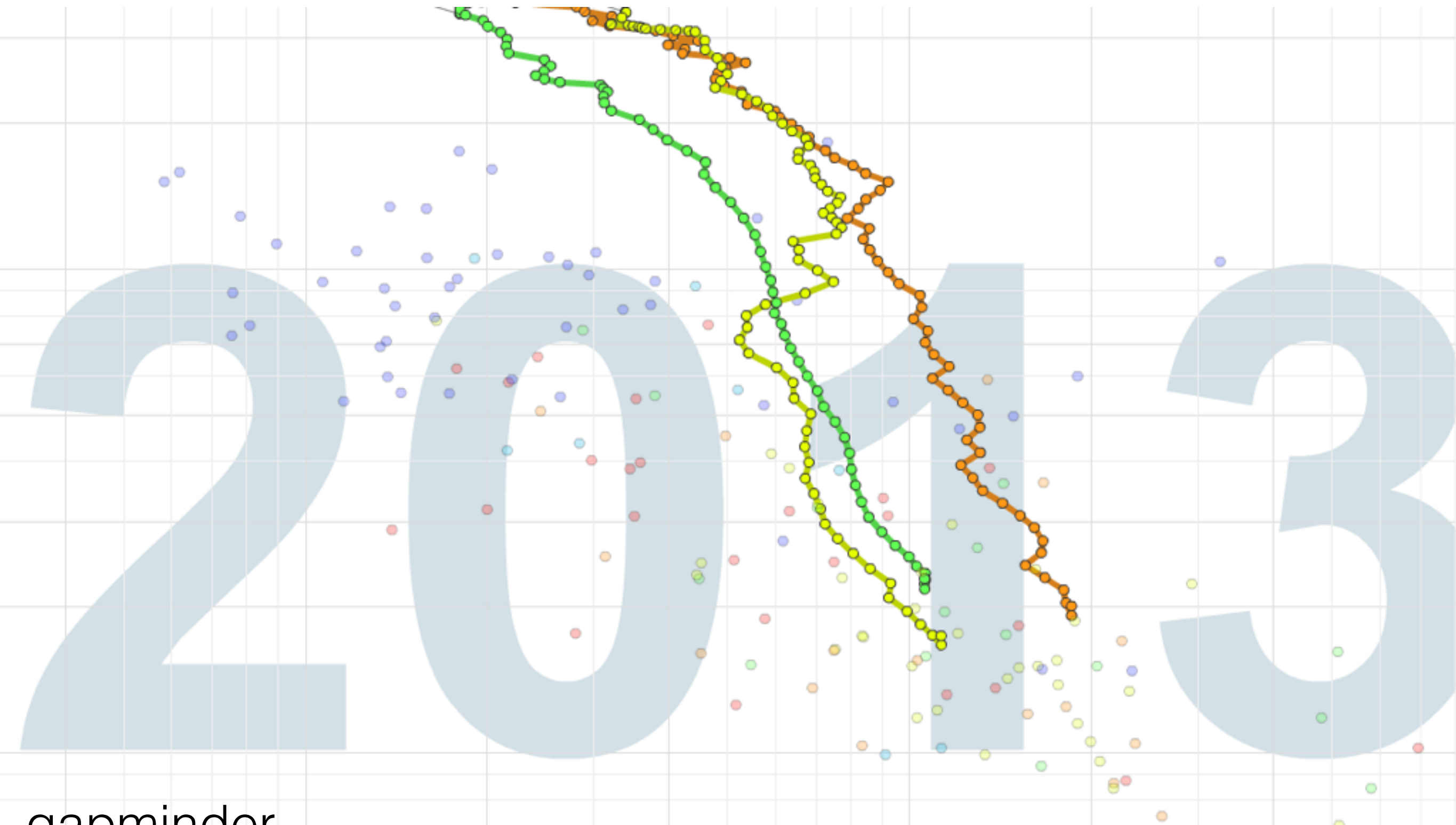
<http://blocks.org/mbostock/4063663>

Small Multiples

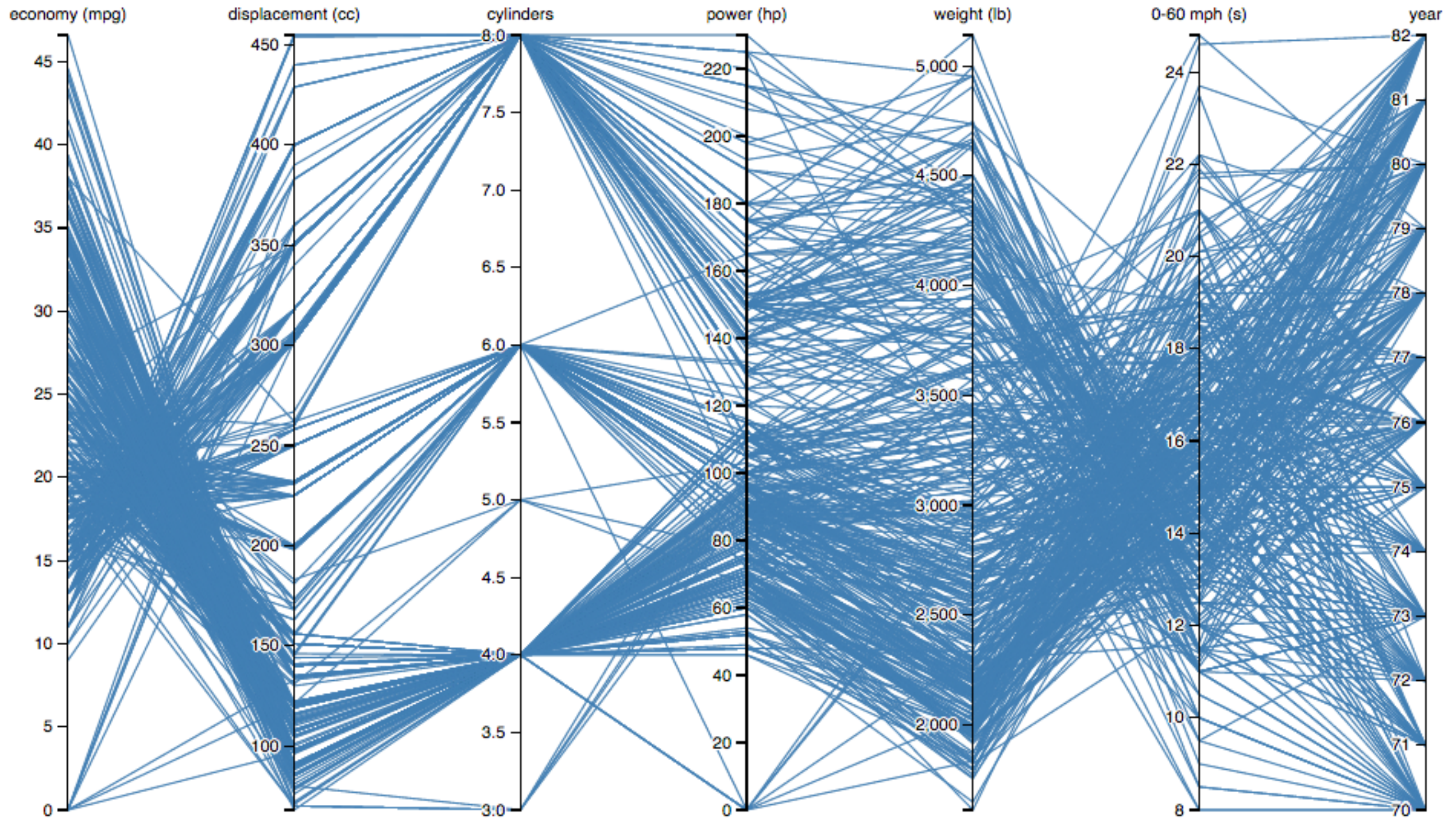


<http://www.washingtonpost.com/graphics/national/arctic-ice-2015/>

Multivariate Time Series



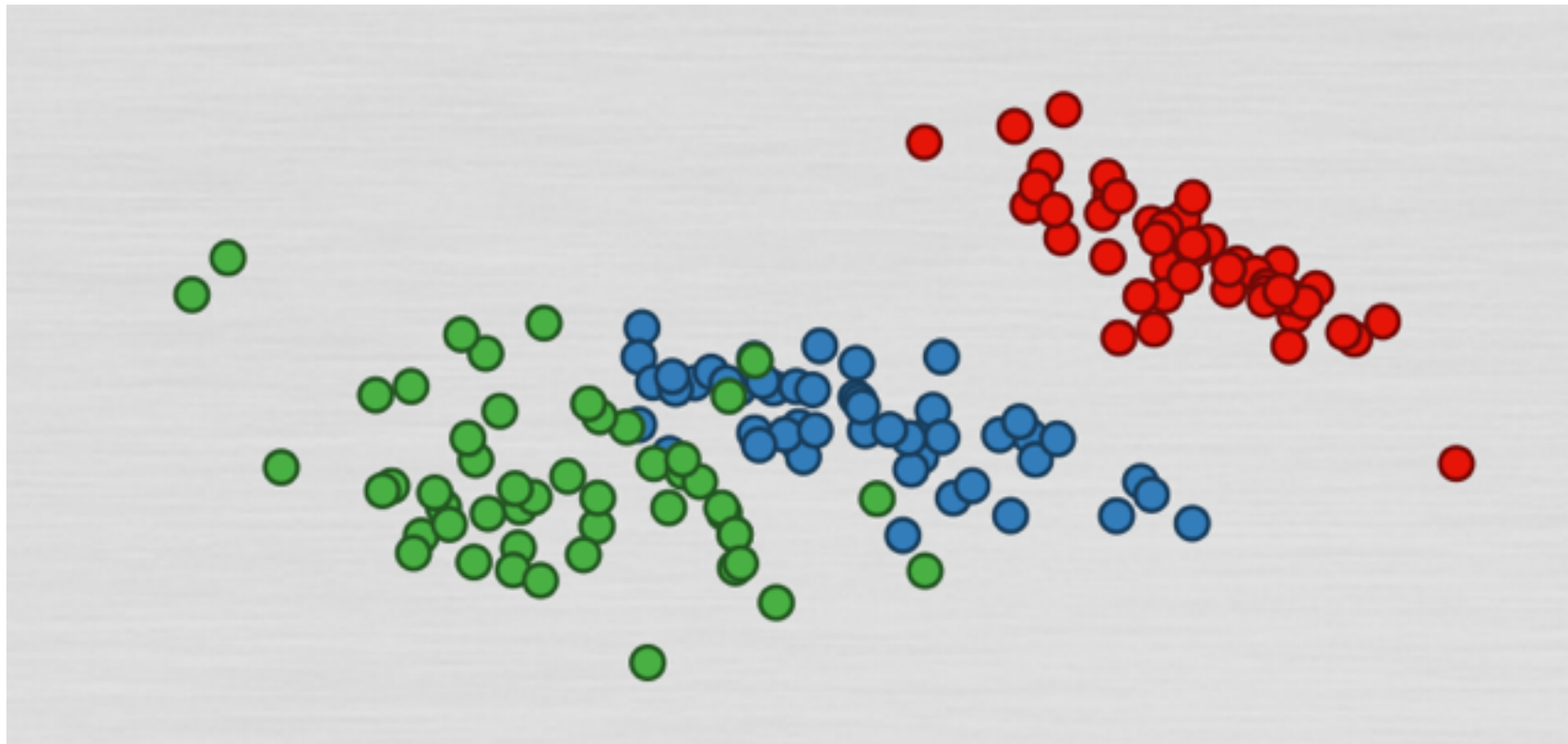
Parallel Coordinates



<http://bl.ocks.org/jasondavies/1341281>

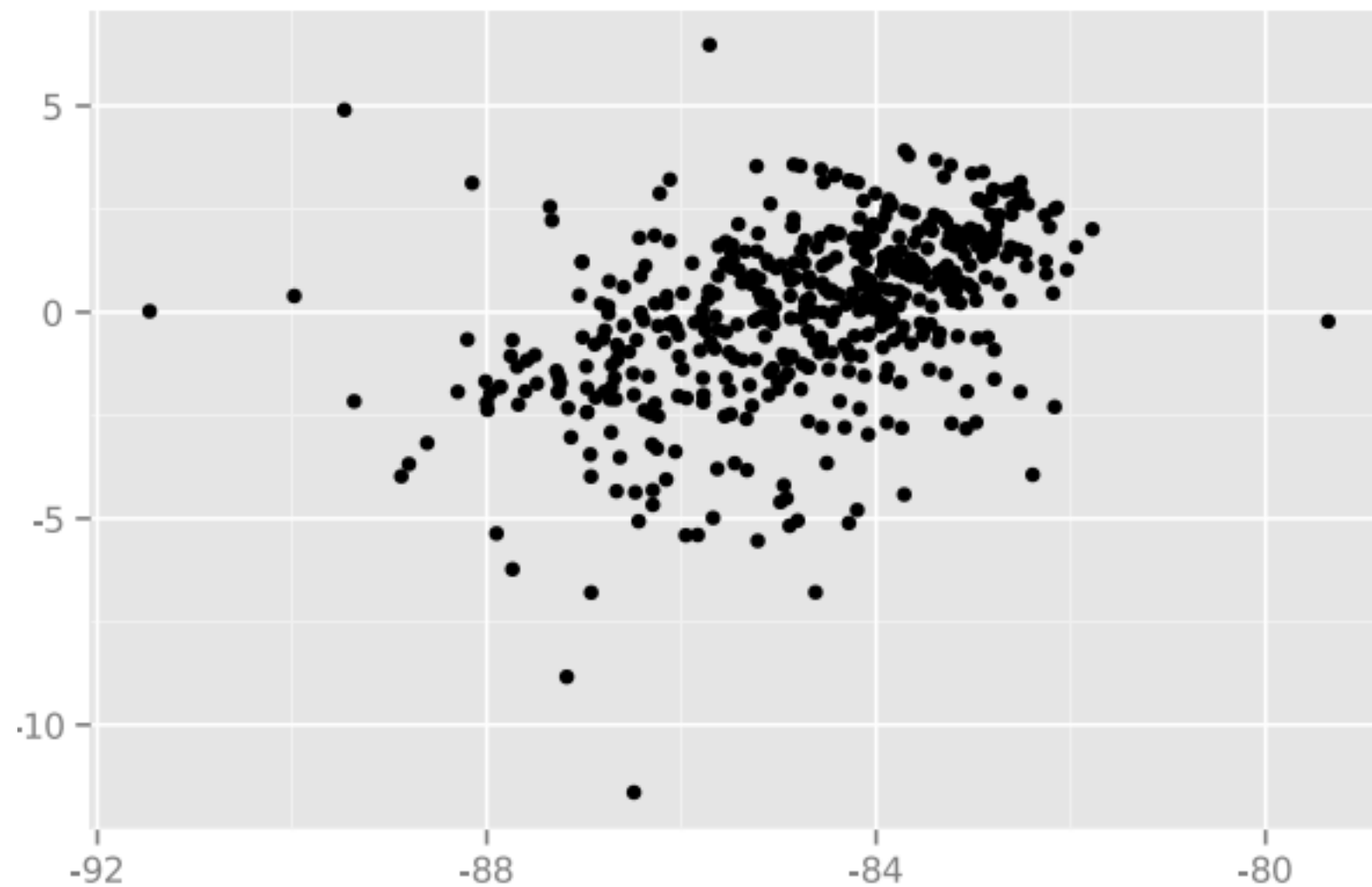
Next Class: Dimensionality Reduction

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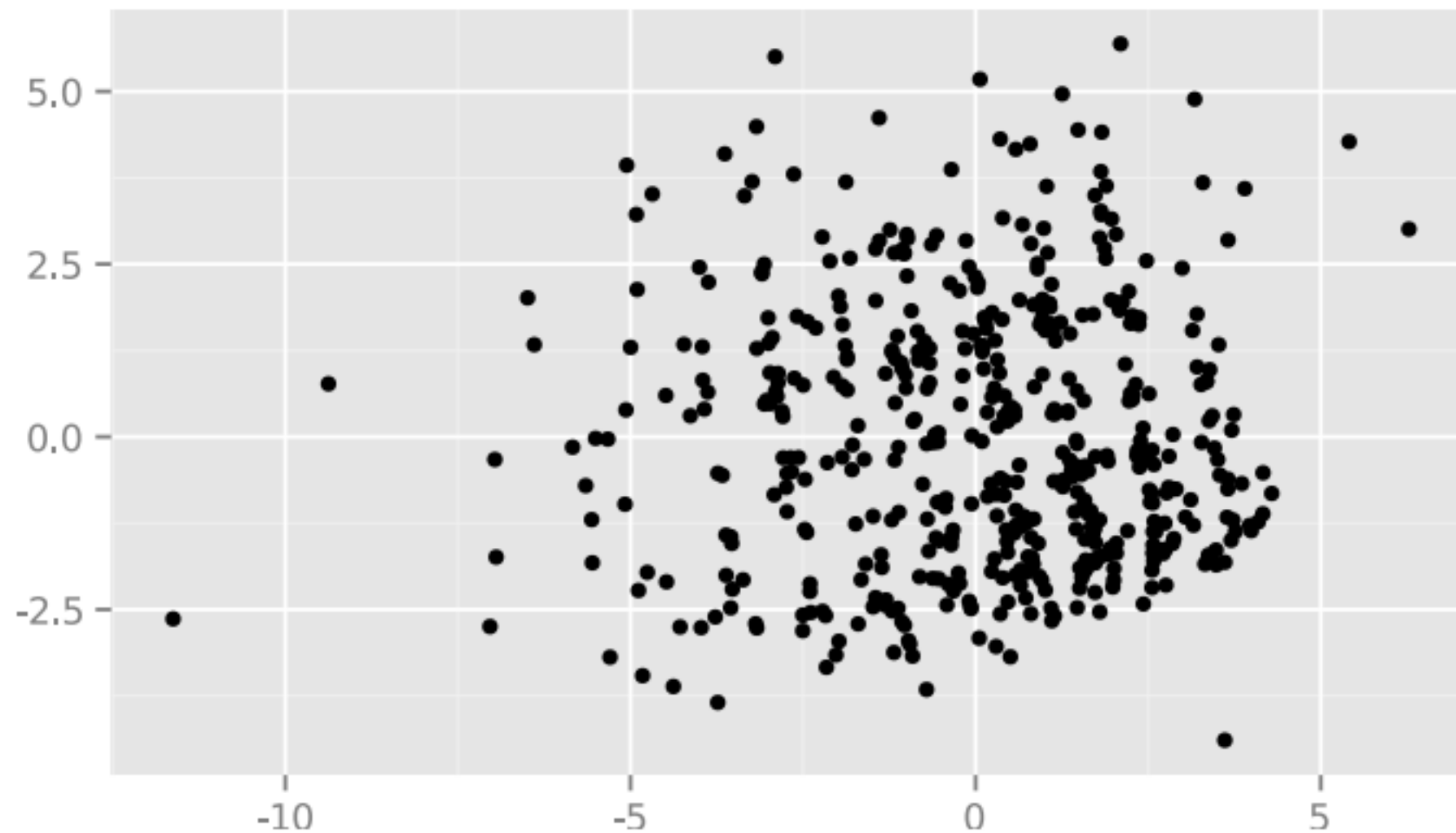


<http://cscheid.github.io/lux/demos/tour/tour.html>

Next Class: Dimensionality Reduction



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