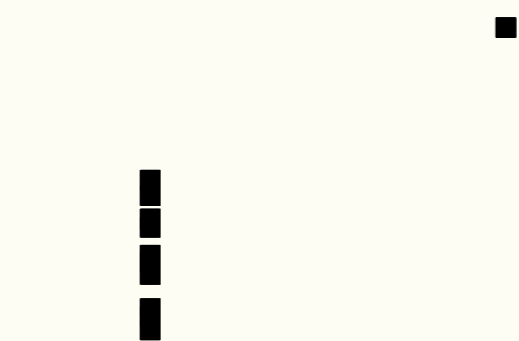
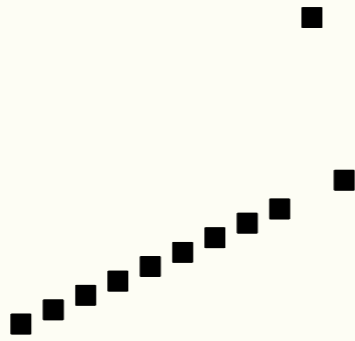
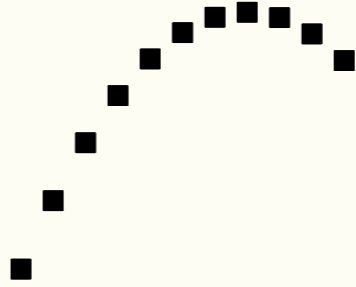
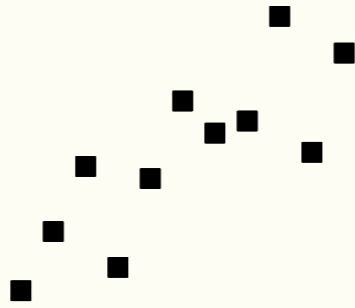
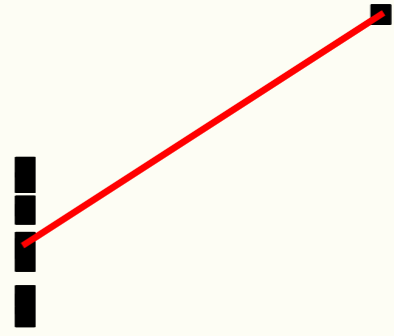
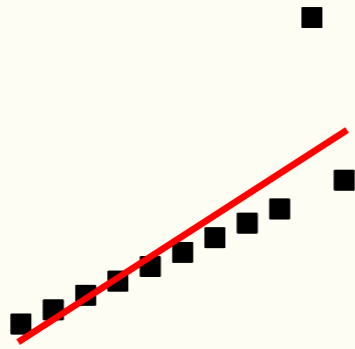
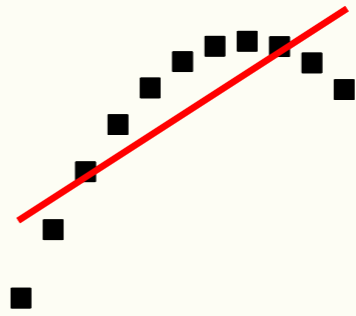
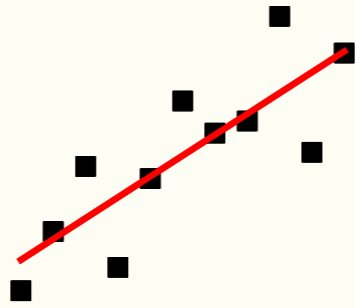


# Let your data SPEAK!

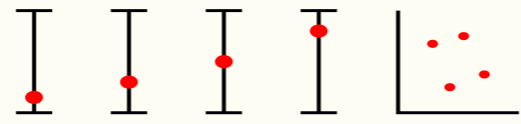
Introduction to data visualization

Bartosz Teleńczuk  
Zürich, 2013





position



shape



length



hue

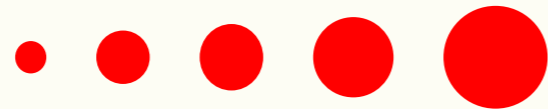


angle

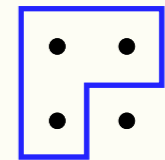


**Grouping**

area



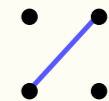
containment



saturation



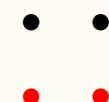
connection



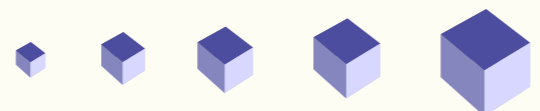
brightness



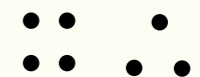
similarity



volume



proximity



# Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Révisée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite Paris, le 20 Novembre 1869

Les nombres d'hommes perdus sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en lettres des zones. Le rouge désigne les hommes qui ont péri en Russie; le noir ceux qui en sont revenus. — Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Ségur, de Fezensac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée; j'ai supposé que les corps du Prince Jérôme et du Maréchal Davout qui avaient été détachés sur Minsk et Mohilow n'avaient rejoint ces Otscha et Witebsk, avaient toujours marché avec l'armée.

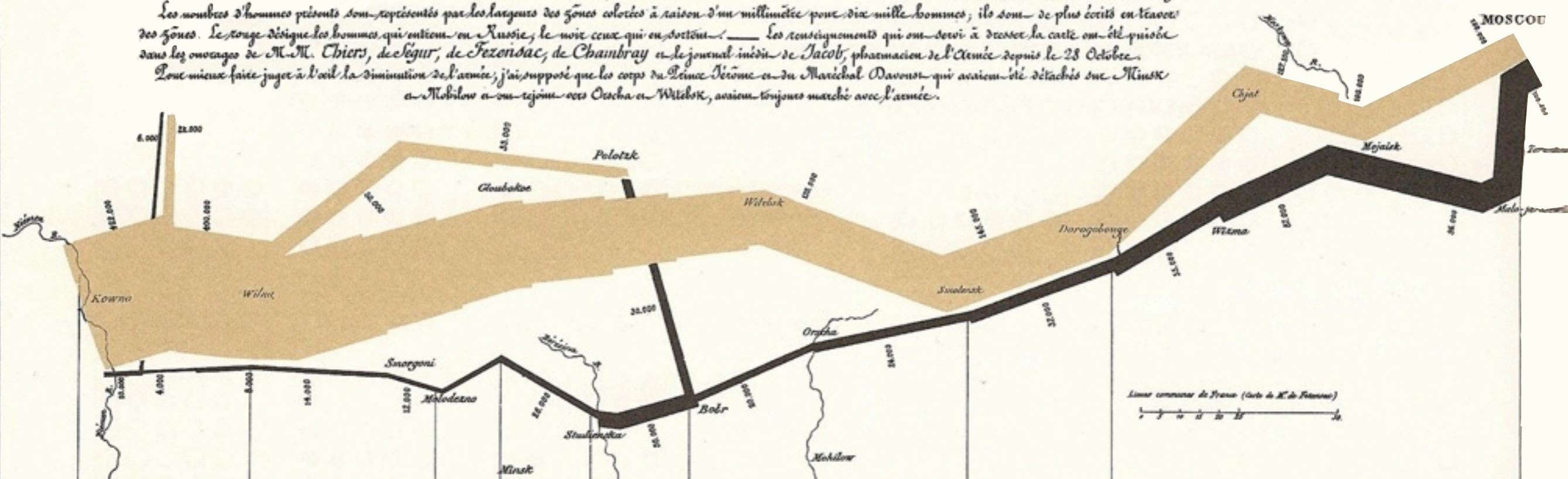
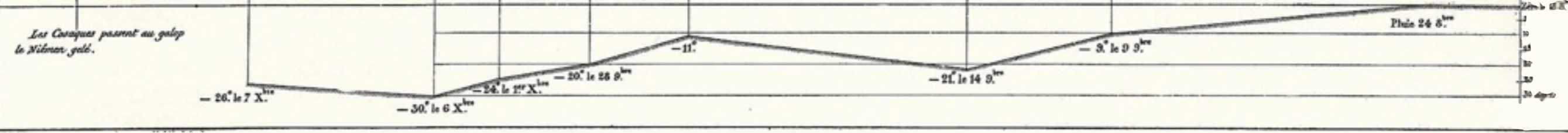
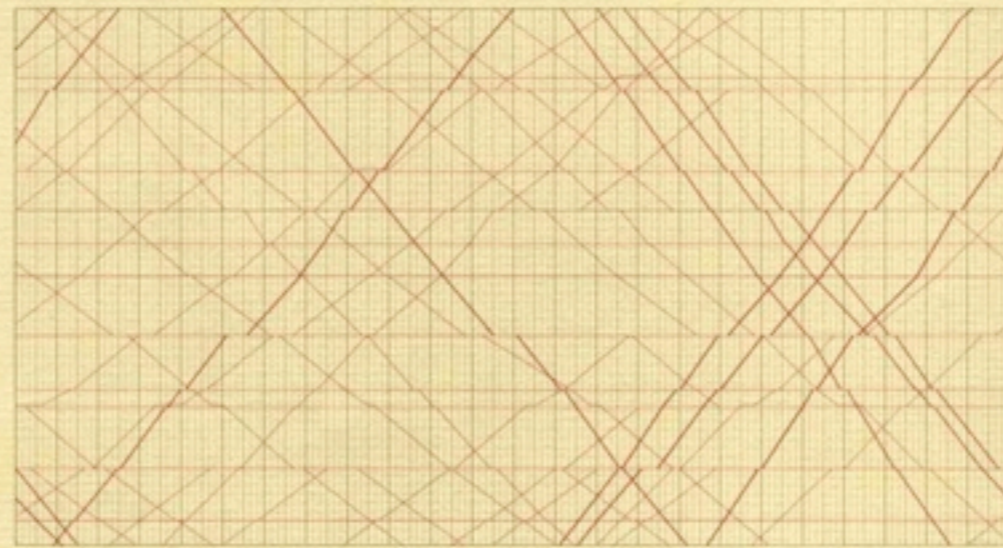


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.



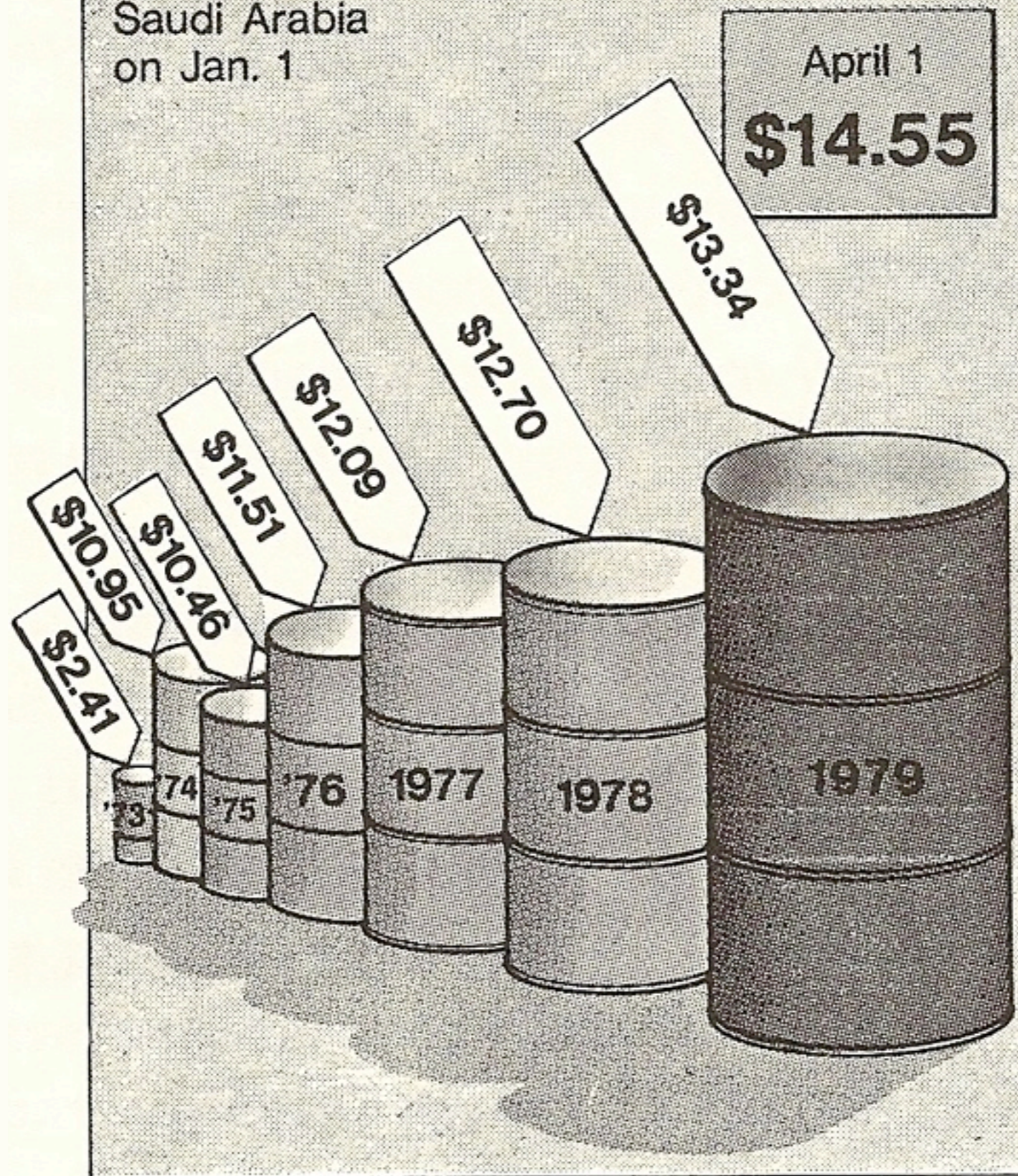


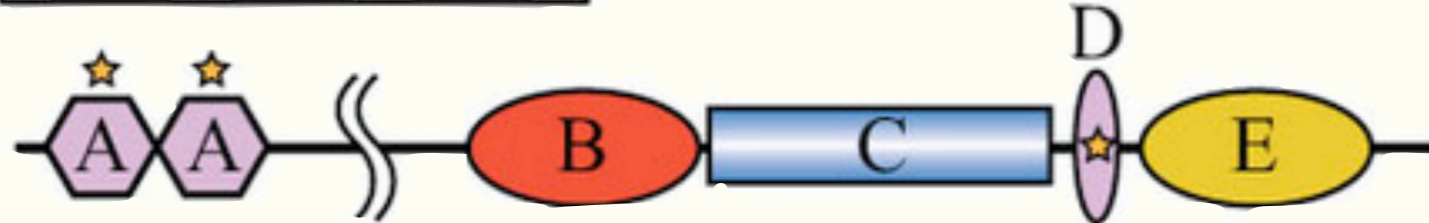
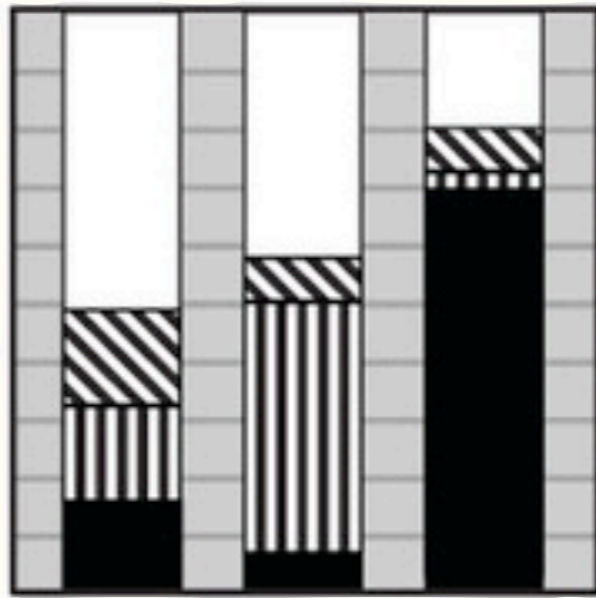
The Visual Display  
of Quantitative Information

EDWARD R. TUFTE

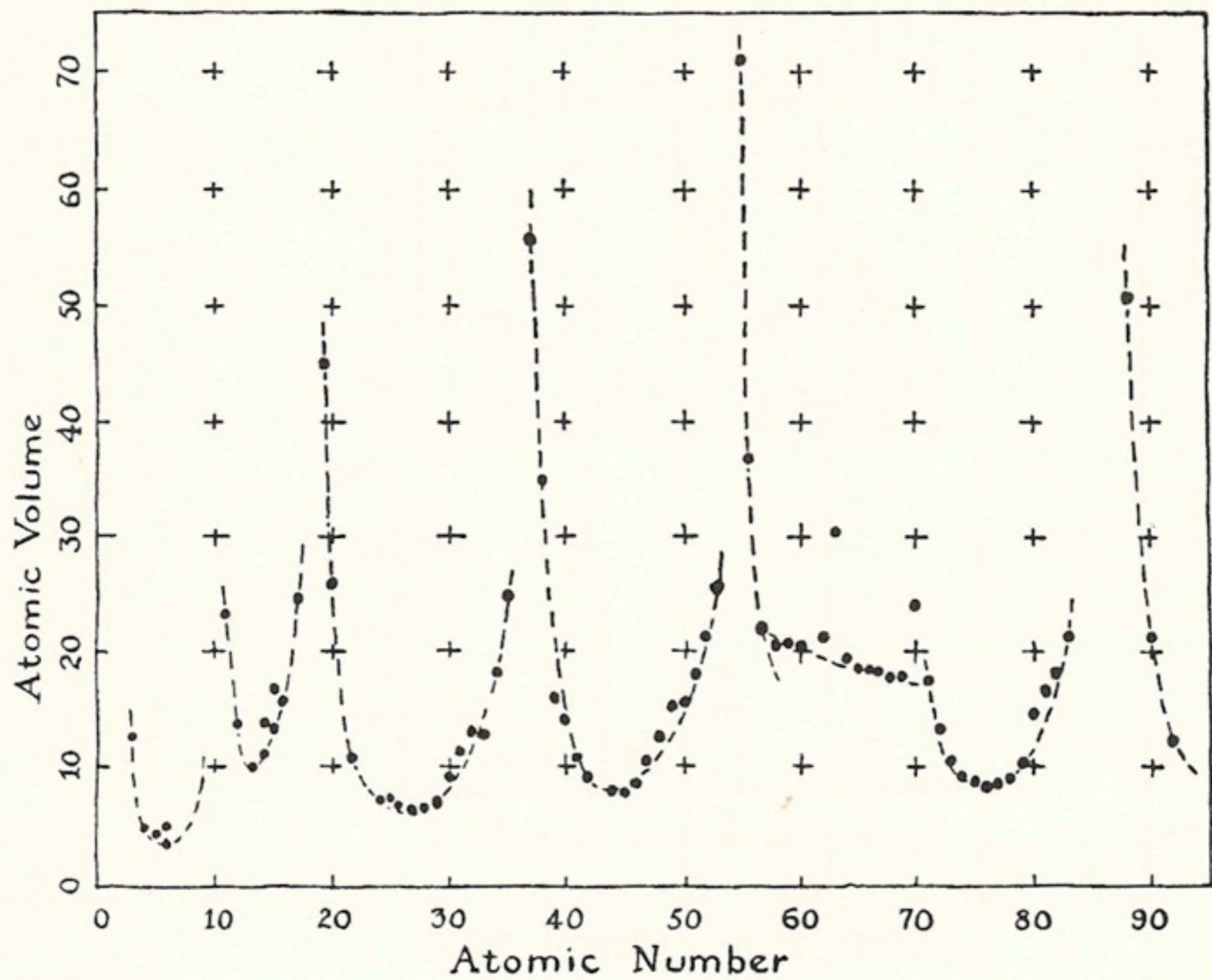
# IN THE BARREL...

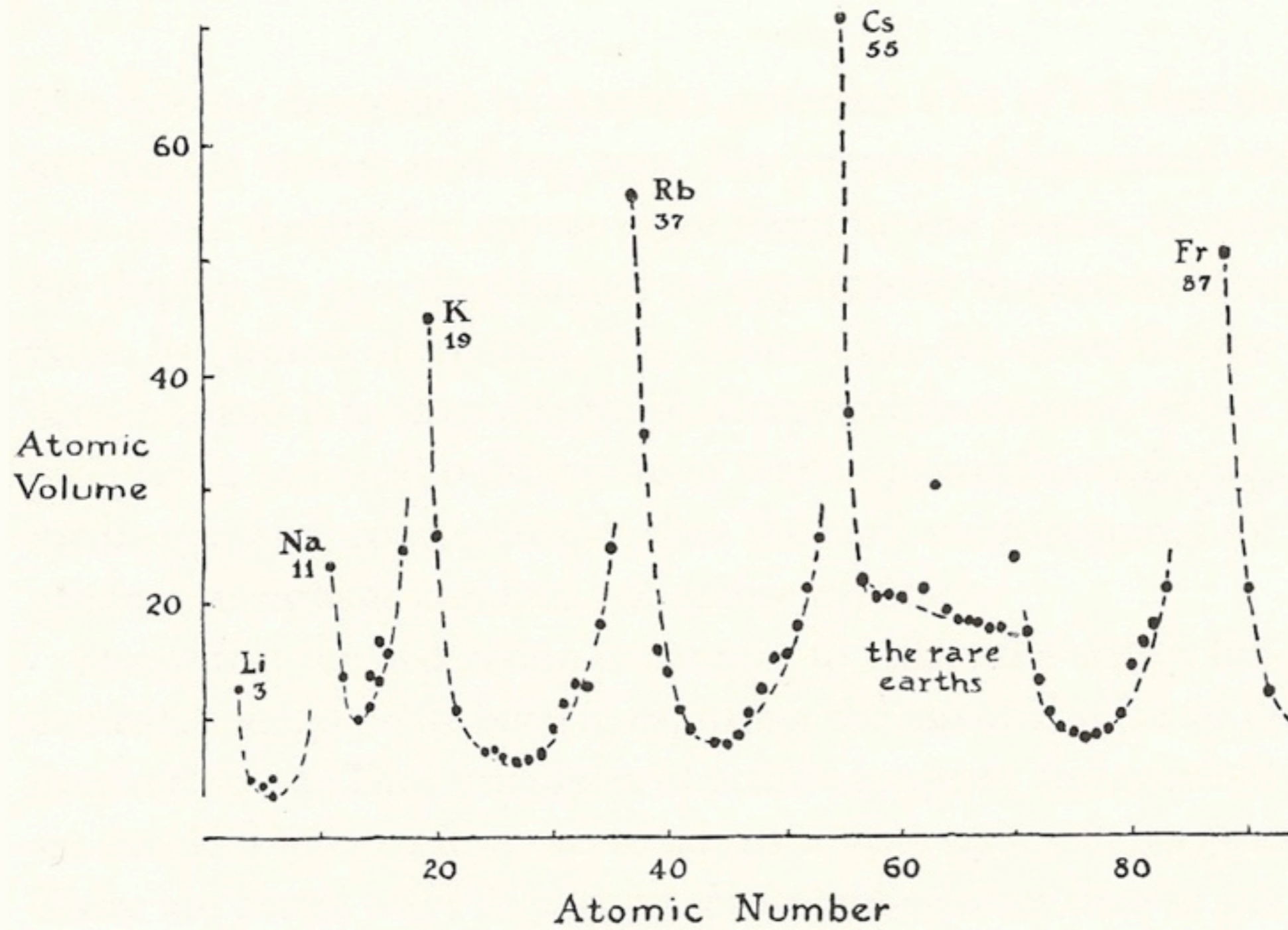
Price per bbl. of  
light crude, leaving  
Saudi Arabia  
on Jan. 1





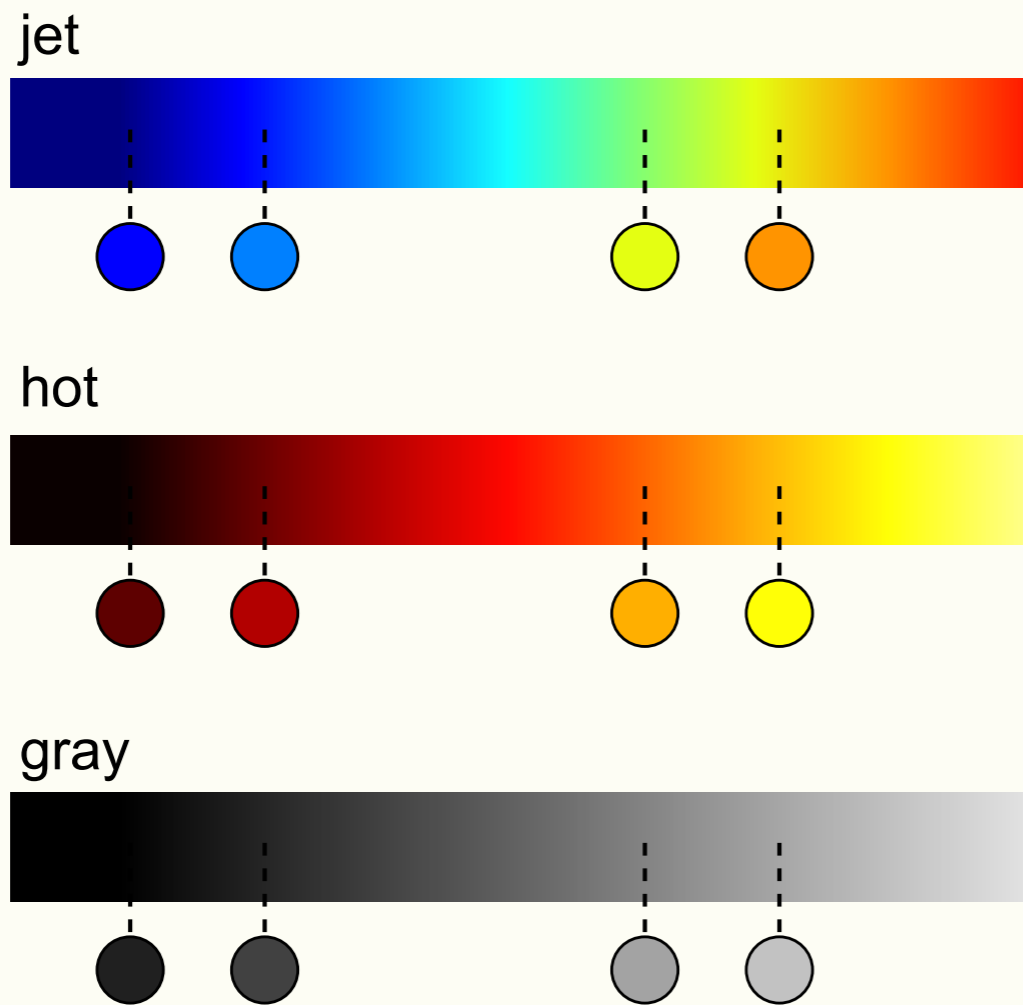






“the first principle in bringing color to information:  
*Above all, do no harm.*”

E Tufte, *Envisioning Information*



heatmap



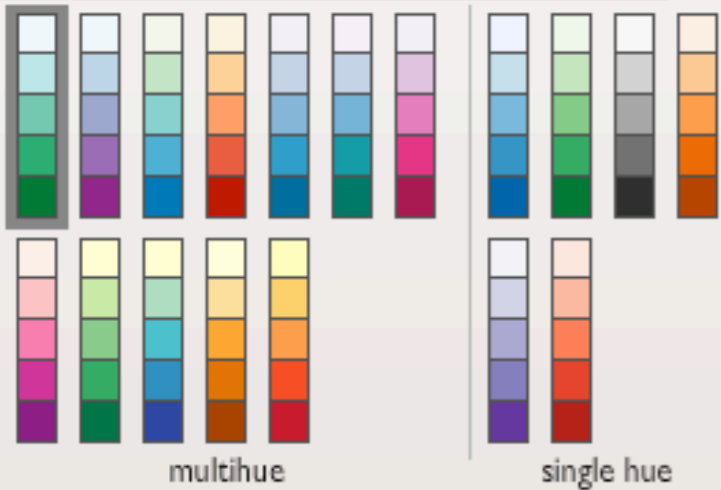
number of data classes on your map

3 [learn more >](#)

the nature of your data

sequential [learn more >](#)

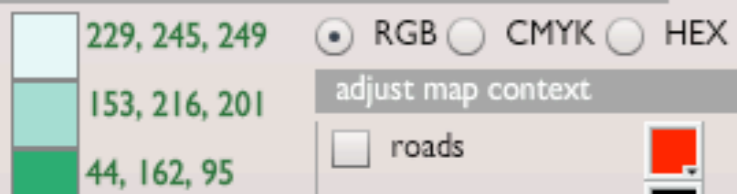
pick a color scheme: BuGn



(optional) only show schemes that are:

- colorblind safe
- print friendly
- photocopy-able [learn more >](#)

pick a color system



adjust map context

- roads
- cities
- borders

select a background

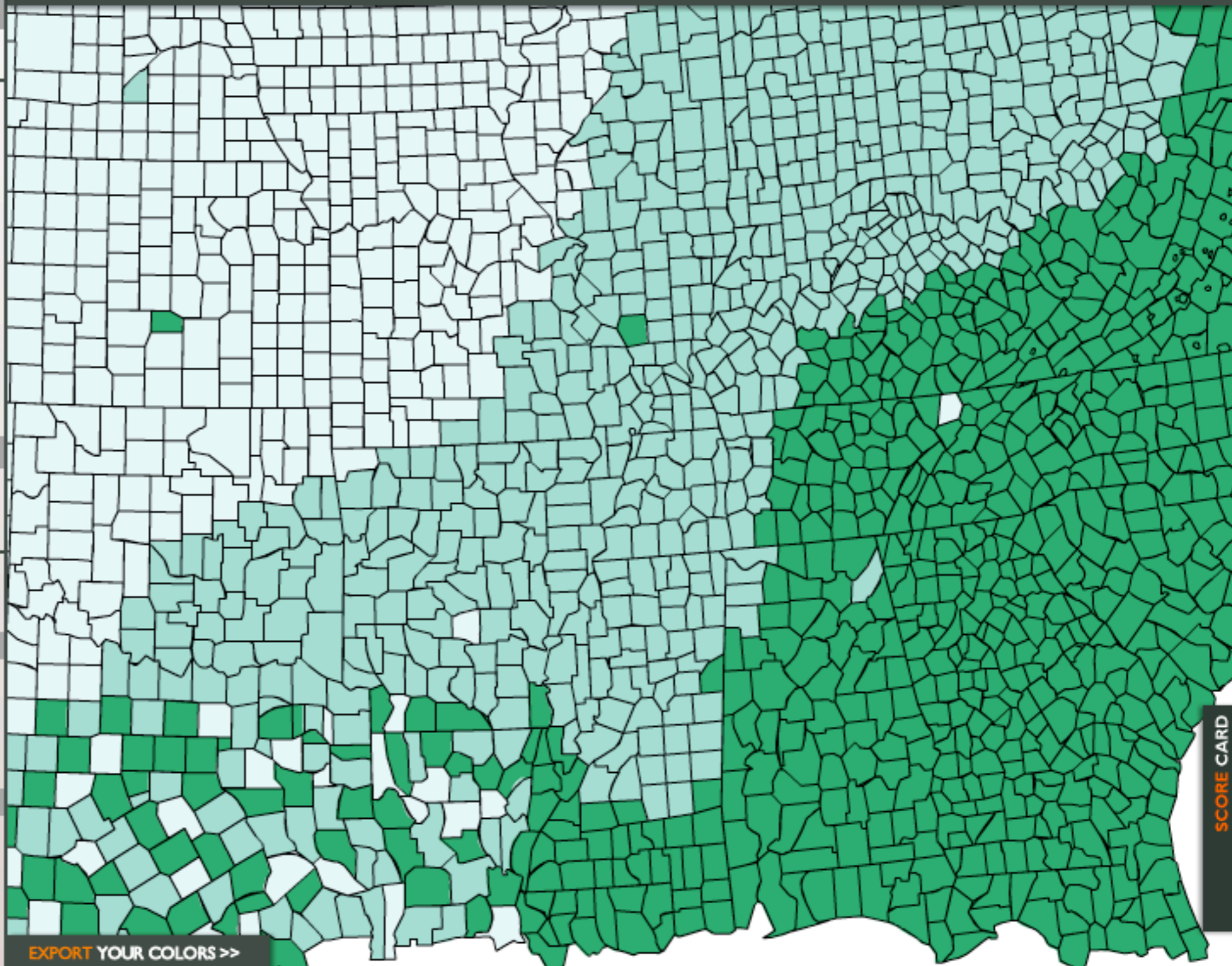
- solid color
- terrain

color transparency

[how to use](#) | [updates](#) | [credits](#)

# COLORBREWER 2.0

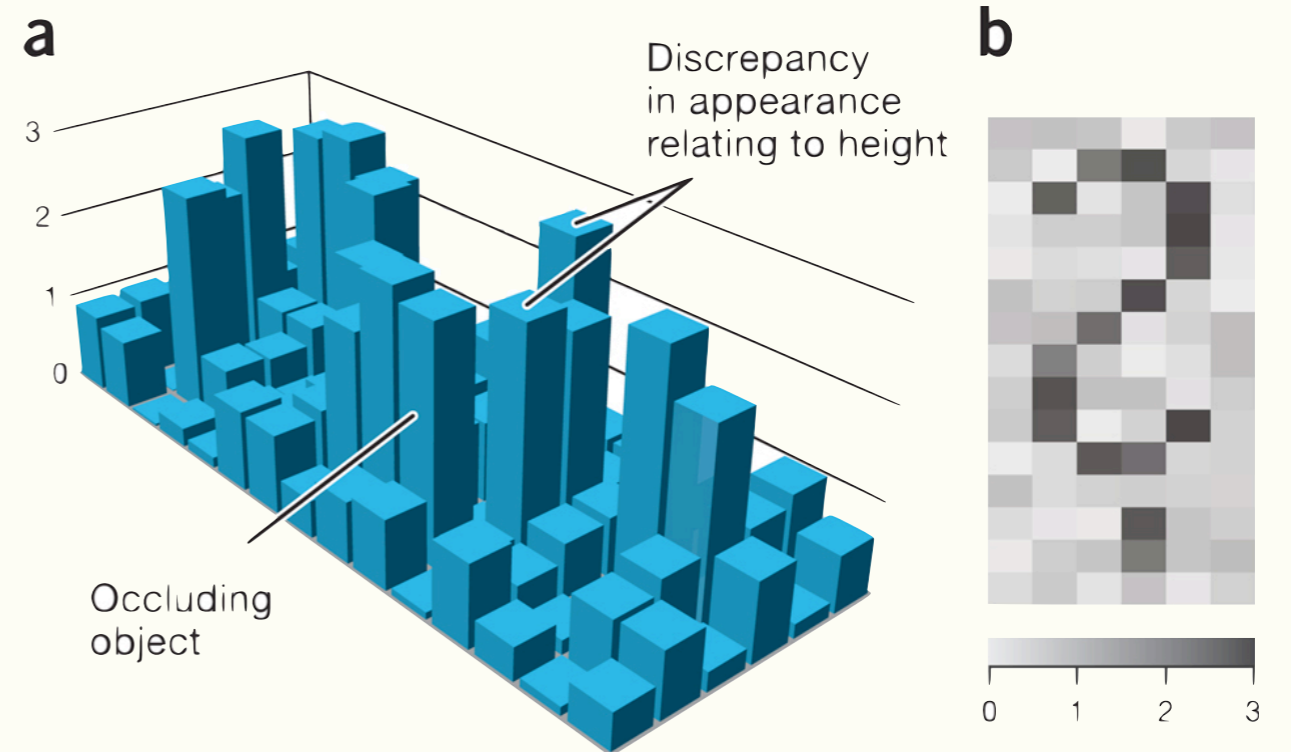
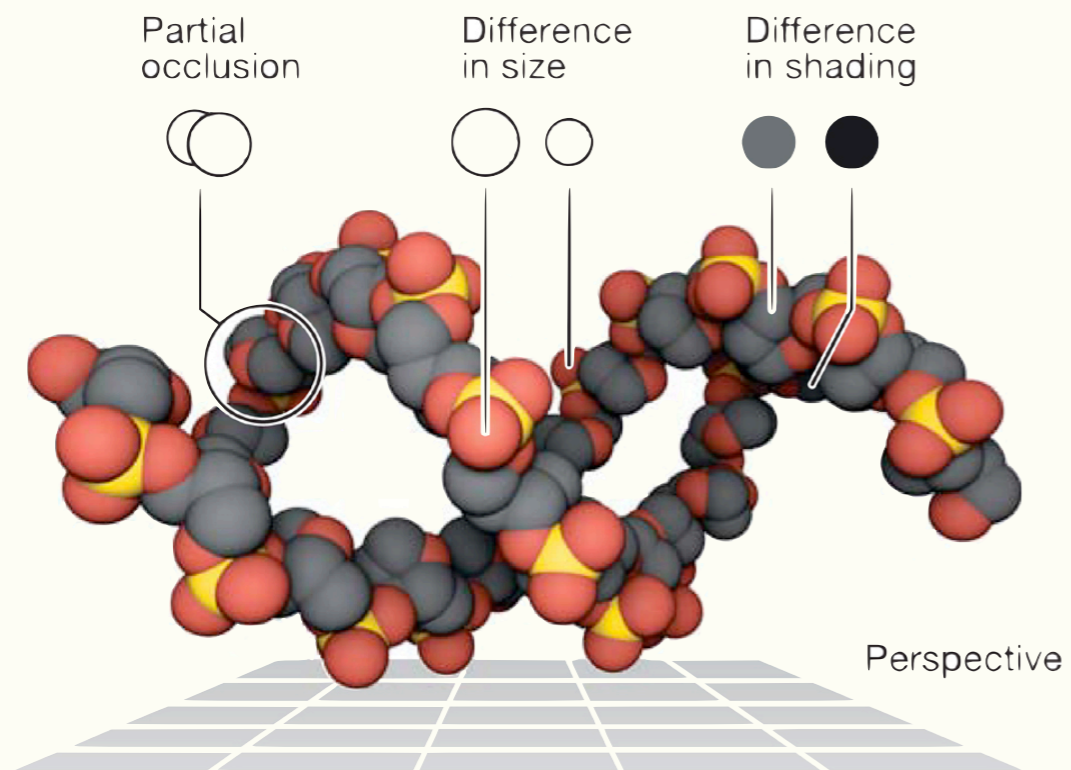
color advice for cartography



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