

Lecture 1a

Visualization: History and Examples

[Data visualization · 1-DAV-105](#)

Lecture by Broňa Brejová

René Descartes, La Géométrie, 1637

Introduced Cartesian coordinate system,
similar ideas also Nicole Oresme (14th
century)

L A
G E O M E T R I E.
LIVRE PREMIER.

*Des problemes qu'on peut construire sans
y employer que des cercles & des
lignes droites.*



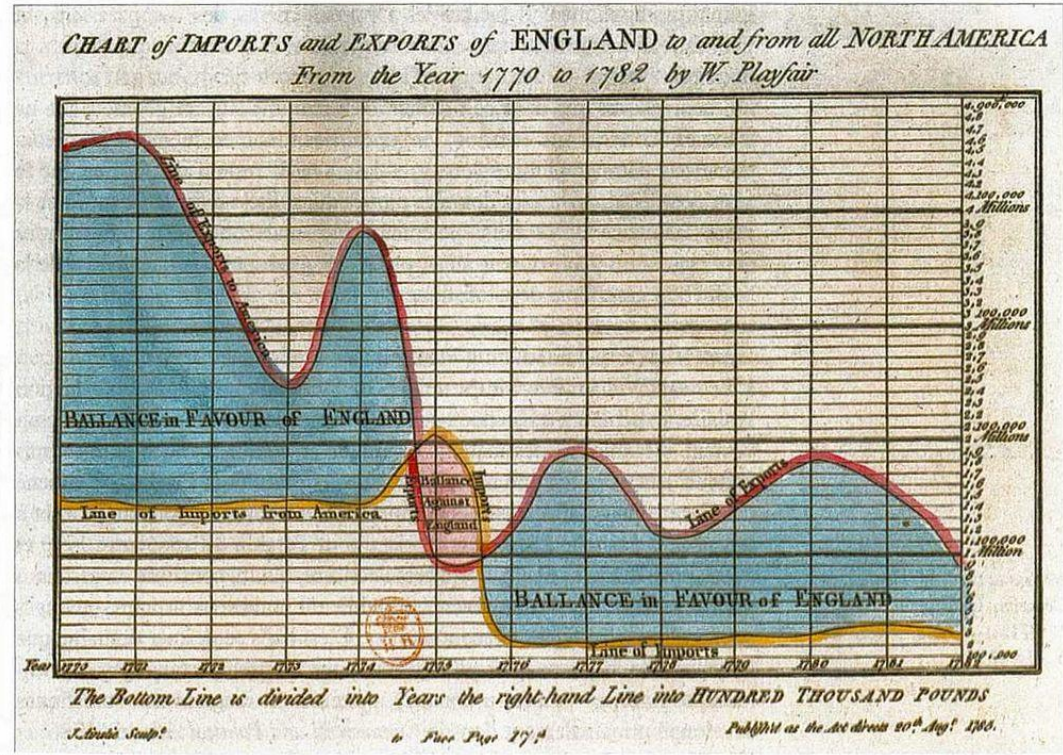
Ous les Problemes de Geometrie se
peuvent facilement reduire a tels termes,
qu'il n'est besoin par après que de connoi-
stre la longueur de quelques lignes droites,
pour les construire.

Et comme toute l'Arithmetique n'est composée, que
de quatre ou cinq operations, qui sont l'Addition, la
Soustraction, la Multiplication, la Division, & l'Extra-
ction des racines, qu'on peut prendre pour vne espece
de Division : Ainsi n'ar'on autre chose a faire en Geo-
metrie touchant les lignes qu'on cherche, pour les pre-
parer a estre connus, que leur en adiouter d'autres, ou
en oster, Oubien en ayant vne, que se nommeray l'vnité
pour la rapporter d'autant mieux aux nombres, & qui
peut ordinairement estre prise a discretion, puis en ayant
encore deux autres, en trouver vne quatriesme, qui soit
à l'vne de ces deux, comme l'autre est a l'vnité, ce qui est
le mesme que la Multiplication, oubien en trouver vne
quatriesme, qui soit a l'vne de ces deux, comme l'vnité

Comme
le calcul
d'Arith-
metique
se rap-
porte
aux ope-
rations de
Geome-
trie.

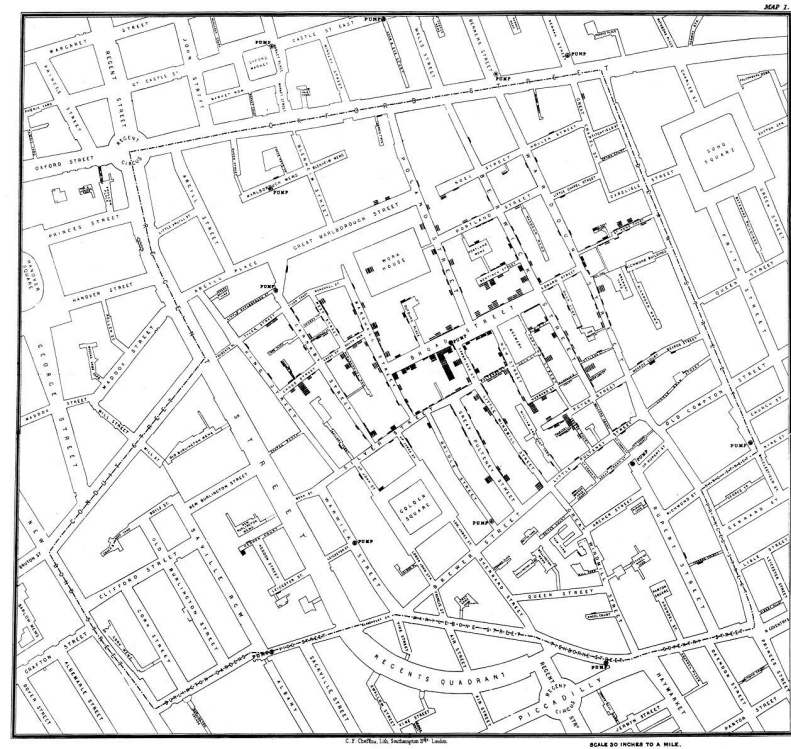
William Playfair, Commercial and Political Atlas, 1786

Playfair invented or popularized different types of graphs (line and area graphs, bar graphs, pie charts)



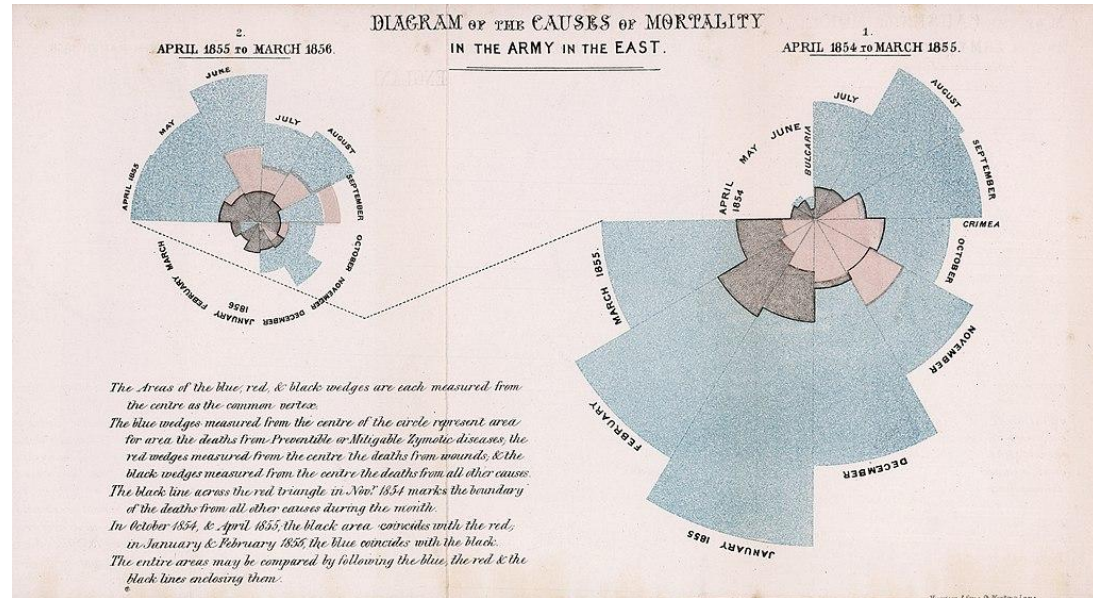
John Snow, On the Mode of Communication of Cholera, 1854

Snow tracked cholera cases in 1854 outbreak and displayed them clustered around a single London well

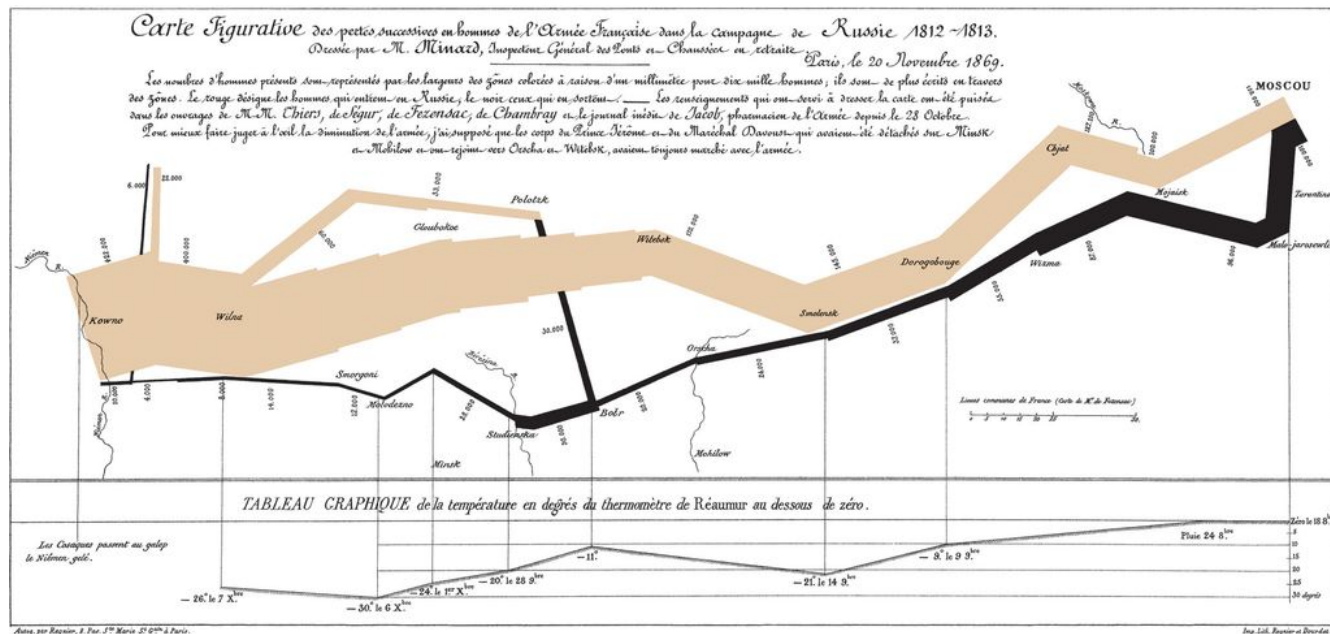


Florence Nightingale, Diagram of the causes of mortality in the army in the East, 1858

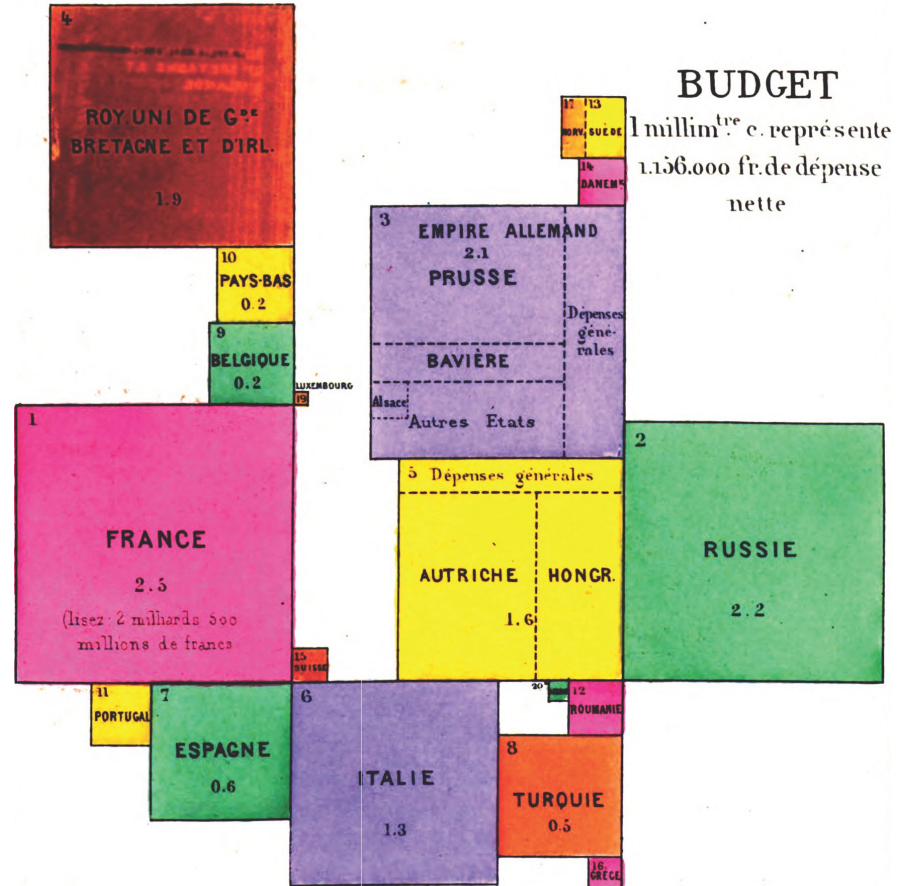
Nightingale led a field hospital during Crimean War, reported to the government on poor conditions causing deaths from typhus, cholera etc



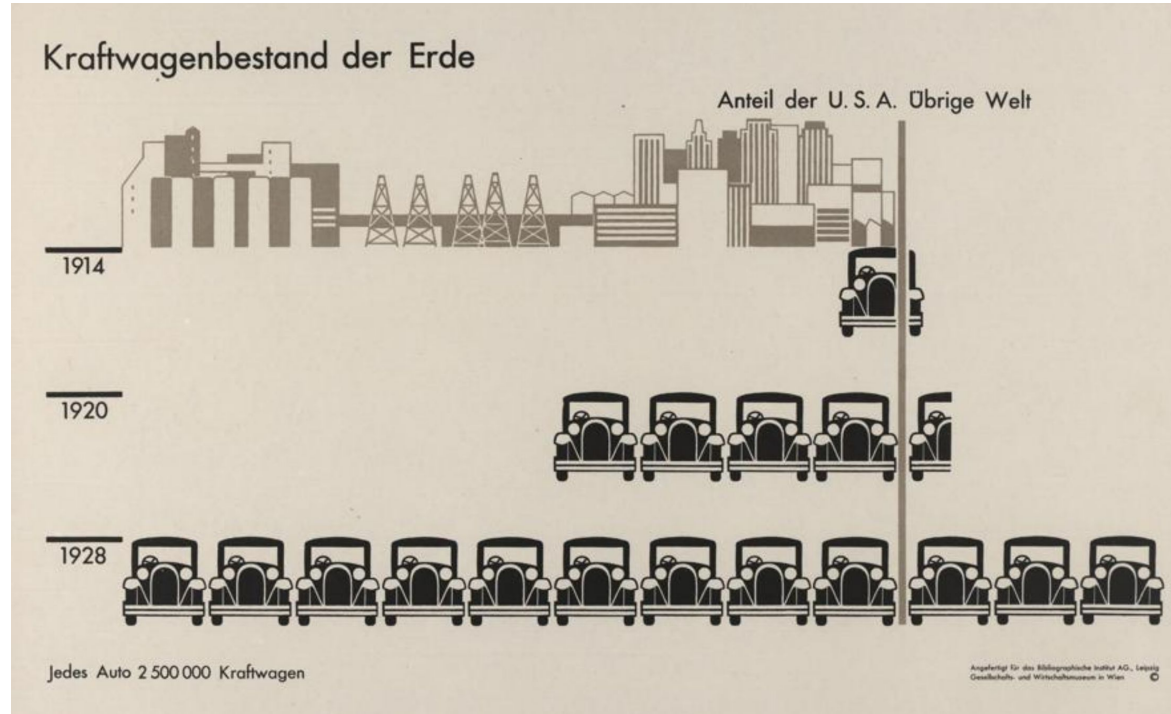
Charles Minard, Figurative Map of the successive losses in men of the French Army in the Russian campaign 1812–1813, 1869



Pierre Émile Levasseur, 1876

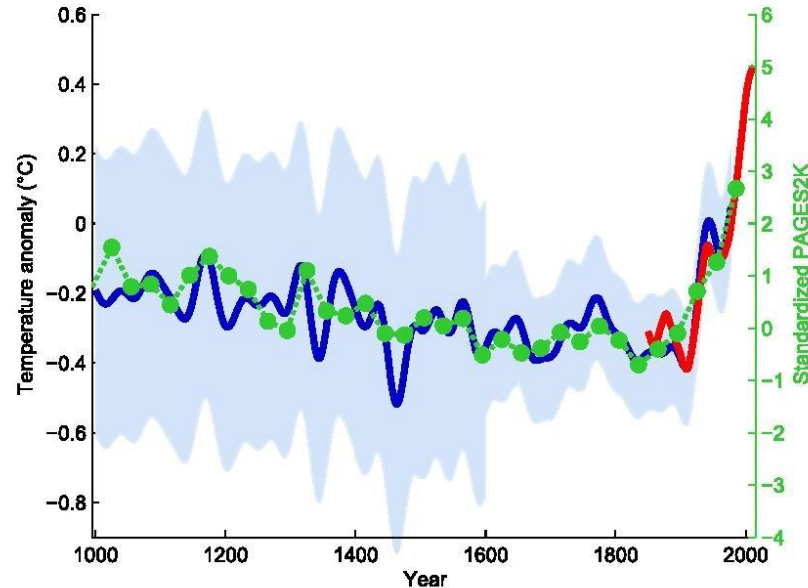


Otto Neurath, Gesellschaft und Wirtschaft, 1930



Mann, Bradley & Hughes: Northern hemisphere temperatures during the past millennium[...] 1999

Hockey stick graph, created
publicity and controversy,
featured also in 2001
Intergovernmental Panel on
Climate Change Third
Assessment Report



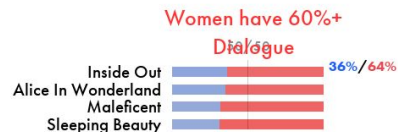
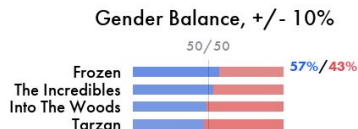
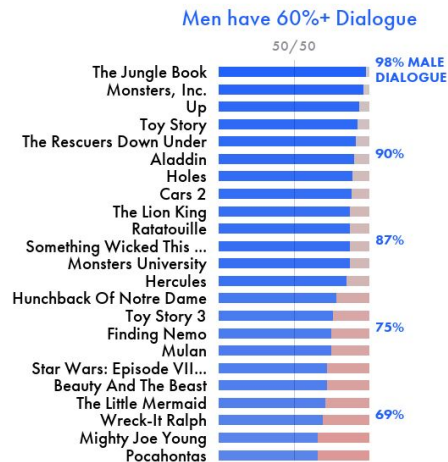
Anderson & Daniels: Film Dialog from 2,000 Screenplays, Broken Down by Gender and Age, 2016



Screenplay Dialogue,
Broken-down by Gender

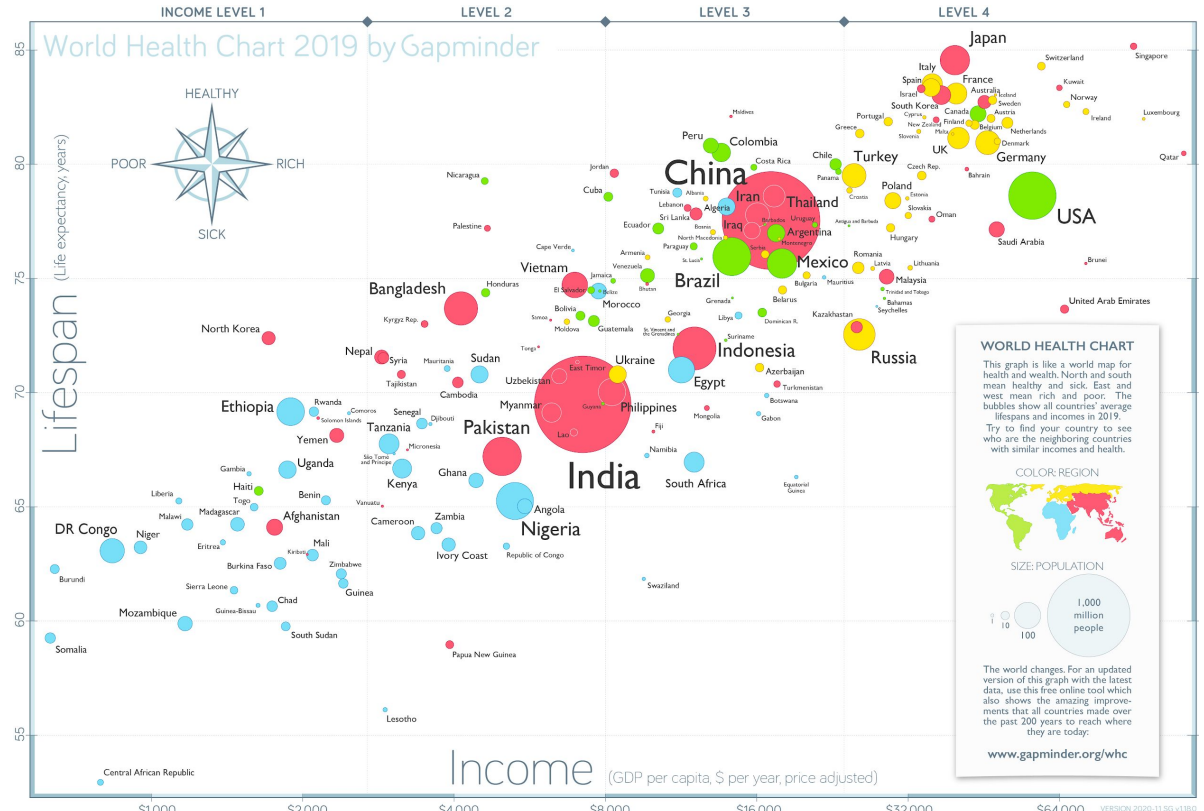
2,000 Screenplays: Dialogue
Broken-down by Gender

Only High-Grossing Films: Ranked in
the Top 2,500 by US Box Office*



Gapminder foundation, World Health Chart 2019, 2020

Original version by Hans Rosling in his 2006 TED talk



SOURCES — INCOME: World Bank's GDP per capita, PPP (2011 International \$) extended to 2019 with IMF's projections. X-axis uses log-scale to make a doubling income show the same distance on all levels. — POPULATION AND LIFE EXPECTANCY: Data from UN, World Population Prospects 2019. MORE INFO AT: www.gapminder.org/whc. LICENSE: Our charts are freely available under Creative Commons Attribution License. Please copy, share, modify, migrate and sell them as you like, as long as you mention "Based on a free chart from www.gapminder.org".

Two other recent examples

Comparing size of software

<https://www.informationisbeautiful.net/visualizations/million-lines-of-code/>

Deadly pandemics in history

<https://www.visualcapitalist.com/history-of-pandemics-deadliest/>

Additional resources

- Tableau.com: Data is beautiful: 10 of the best data visualization examples from history to today
<https://www.tableau.com/learn/articles/best-beautiful-data-visualization-examples>
- Michael Friendly: History of Data Visualization
<https://friendly.github.io/HistDataVis/>
- Hans Rosling The best stats you've ever seen (TED Talk)
https://www.ted.com/talks/hans_rosling_the_best_stats_you_ve_ever_seen