

Historical Visualisations - Exercise

Instructions

We are going to reproduce three famous historical visualisations. We have the underlying datasets in an Excel file and about 200 years of experience – can we do better? These visualisations are

- William Playfair's line chart in the 1780s
- Florence Nightingale's Rose diagram
- John Snow's map of an outbreak of cholera in Soho, London in 1854

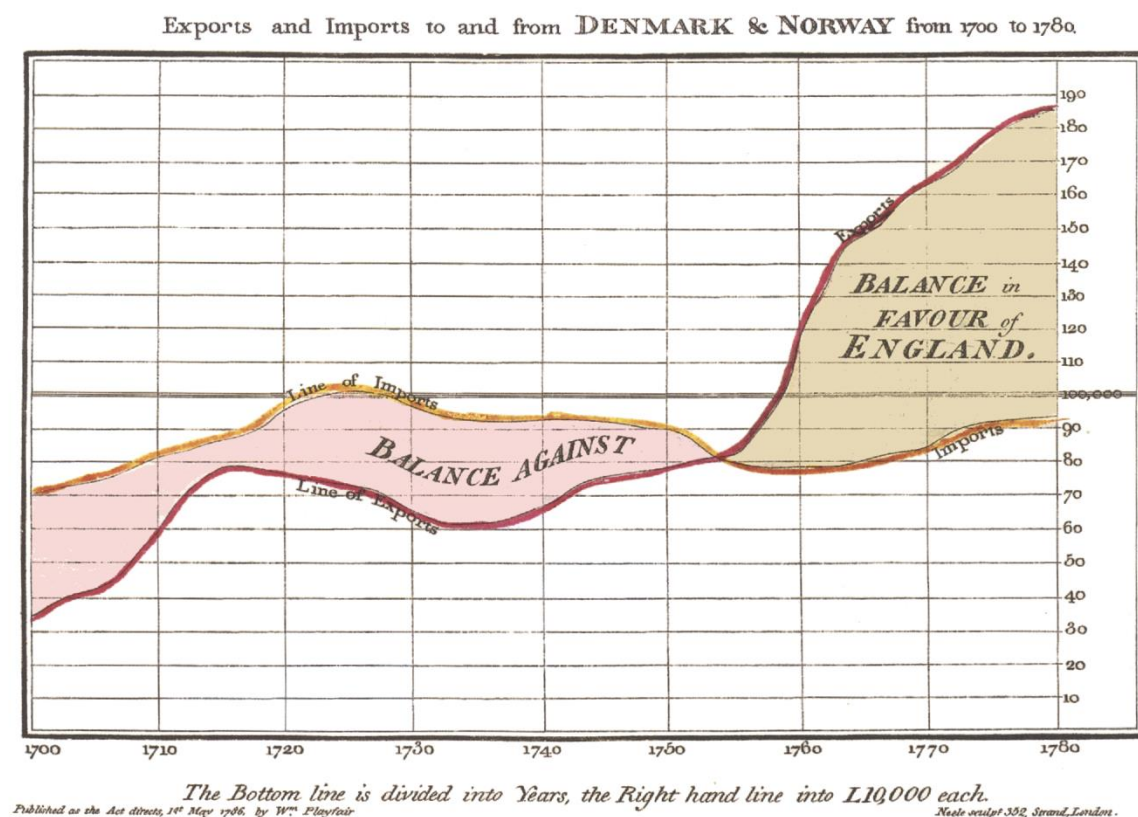
Each group should choose just one dataset

The datasets are in the Excel file Historical Datasets.xlsx. Each dataset is in a named Excel table. The Playfair dataset is in the ImportExport table, the Nightingale dataset is in the Crimea table and the Snow dataset is in the Soho table.

William Playfair's line chart in the 1780s

The Playfair dataset is in the ImportExport table.

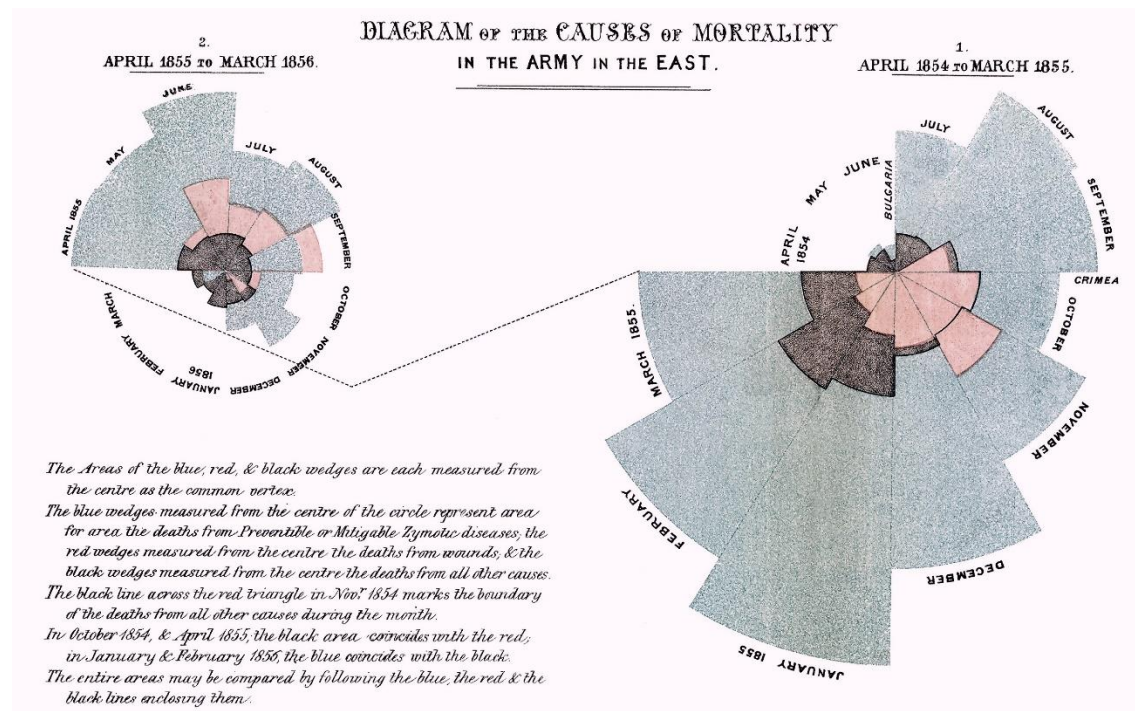
William Playfair was a thoroughly disreputable type: English spy, financial fraudster and the person who invented the pie chart, a visualisation loathed by data viz experts. However, he did also invent the line chart and the first time it is used in in his "atlas" of imports and exports from England to Norway and Denmark. He made the jump that you could plot a map with abstract quantities such as the amount of exports and time on the axes – it had surprising never been done before. He had to write a lot of explanation for his readers, but somehow the time-series line chart has caught on.



Florence Nightingale's Rose diagram

The Nightingale dataset is in the Crimea table.

Florence Nightingale is famous as the lady of the lamp, nursing wounded soldiers in the Crimean War in a army field hospital in Scutari, near Istanbul. More soldiers died of disease than wounds received in battle. Conditions improved once Florence arrived in November 1854, and even more so in April 1855 when a Sanitary Commission of engineers brought clean air and water to the hospital. Florence devised the Rose diagram a few years later for a parliamentary report, to argue for better hygiene and sanitation in hospitals.



Here is the explanation for the chart; red is death due to wounds, blue are deaths due to preventable diseases and black other deaths

*The Areas of the blue, red, & black wedges are each measured from the centre as the common vertex.
The blue wedges measured from the centre of the circle represent area for area the deaths from Preventible or Mitigable Zymotic diseases; the red wedges measured from the centre the deaths from wounds; & the black wedges measured from the centre the deaths from all other causes.
The black line across the red triangle in Nov^r 1854 marks the boundary of the deaths from all other causes during the month.
In October 1854, & April 1855, the black area coincides with the red; in January & February 1856, the blue coincides with the black.
The entire areas may be compared by following the blue, the red & the black lines enclosing them.*

John Snow's map of an outbreak of cholera in Soho, London in 1854

The Soho table contains the locations of both the pumps and the houses of those who died. There is a column, Type that distinguishes between these. This is because we may want to plot both deaths and pumps on a single map, so we need a single table for these. There are a couple of other Soho related tables, SohoPumps and SohoDeaths if it is more convenient to have these separately, or if you want to proactively combining these tables.

John Snow was a doctor in London in 1854 when there was an outbreak of cholera in Soho, an area of central London. Cholera was believed to be transmitted by "miasma" in the air, not a disease caused by drinking dirty water. In one of the first uses of a geospatial map, Snow plotted the houses of the people who died in the outbreak and the location of the several communal water pumps. The map shows the outbreak centred on a pump in Broad Street. Snow had the handle of the pump removed and the epidemic subsided.

