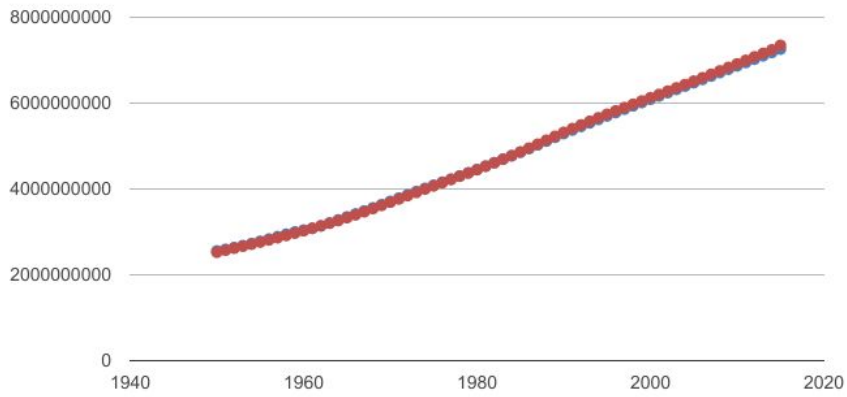
Design 1: Population Data

What trends do you see in the data?

If you plot the data from 1950 – 2000 of the United States Census Bureau and the UN Department of Economic and Social Affairs, you see a linear upward slope with a slight curve at 1960 (probably the baby boomers generation). Furthermore, the estimates of these bureaus are almost between 1.5% points. Although the world population growth has been positive, two declines have occurred between 1300-1400 and 1600-1650. This can be explained due to several diseases such as the black death.



Analyze how big the differences between various estimates are. Do you see a trend, i.e., do the differences become smaller or larger over time?

Looking at the same estimates from 1950 - 2015, the smallest difference is at 1962 and the biggest is 2015. In between the differences get larger over time.

Think about these differences relative to the estimates at the respective time points and in absolute terms. When are the uncertainties the largest in absolute, when in relative terms?

The further back you go, the more uncertain the data becomes. There are large gaps in documentation between different sources and the differences between sources are also more significant.

Do you think you can faithfully represent the uncertainty and the data in the same plot? Why, or why not?

I think you can show uncertainty if you include multiple sources and different plots by using a bandwidth plot where you can represent a spread of multiple values in just one plot.

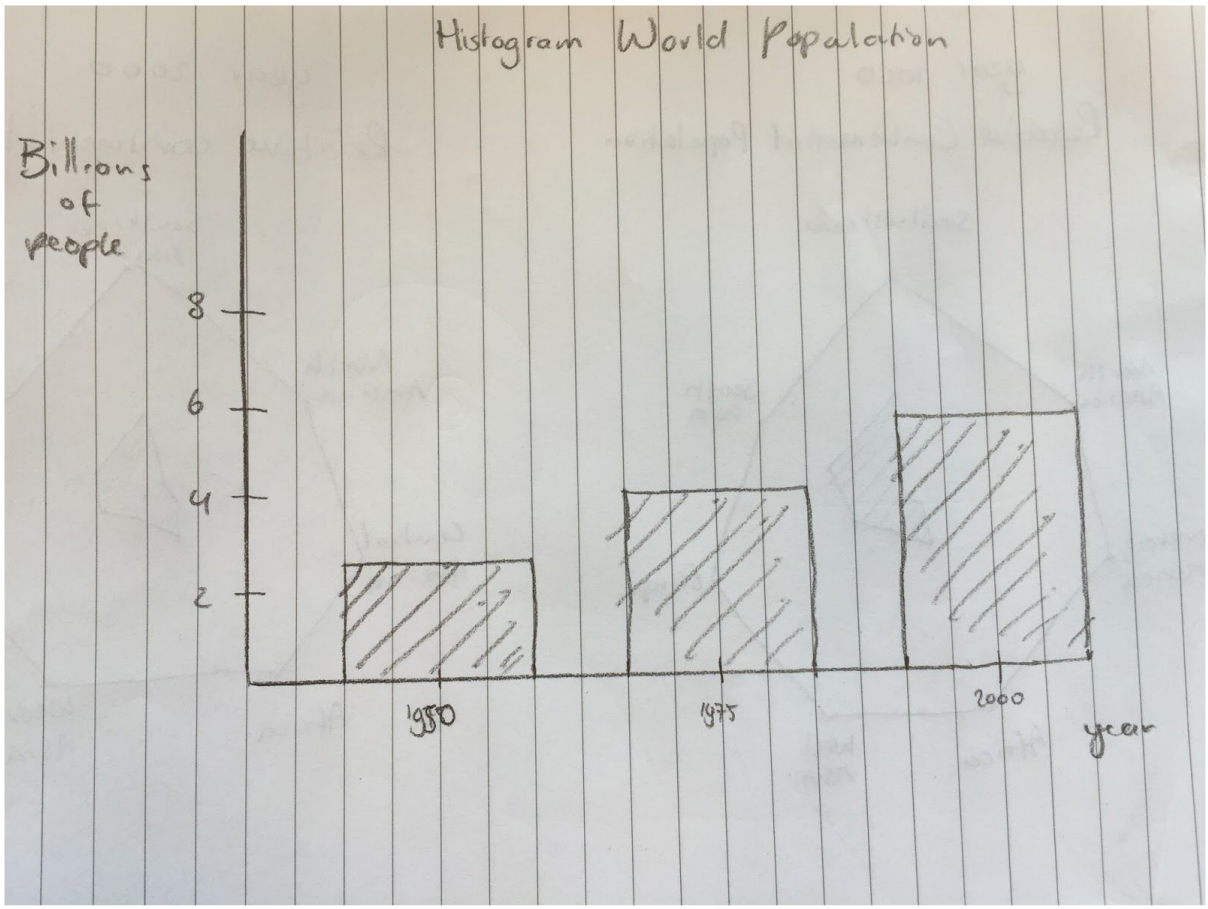
What effect do you think will the linear interpolation have on the uncertainty?

It will decrease the visibility of the uncertainty because you will draw a line that connects all points globally. You'll make assumptions based on estimates, which makes the uncertainty of these data points larger.

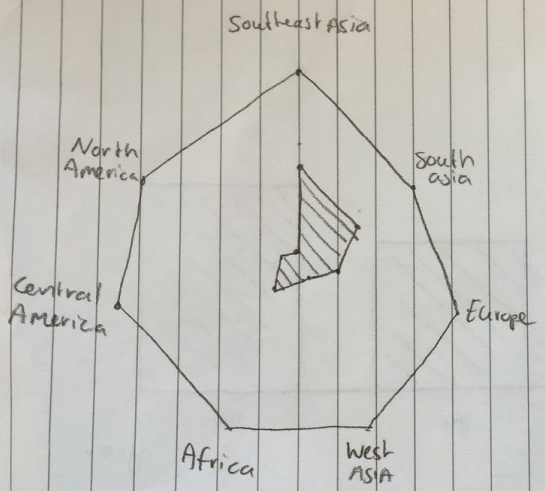
Is linear interpolation a suitable method for this data?

It depends on the linear relation between the two variables. If there's a clear linear relation (over time) then it could be a suitable method for the data, however errors can occur when population growth is restricted due to various reasons.

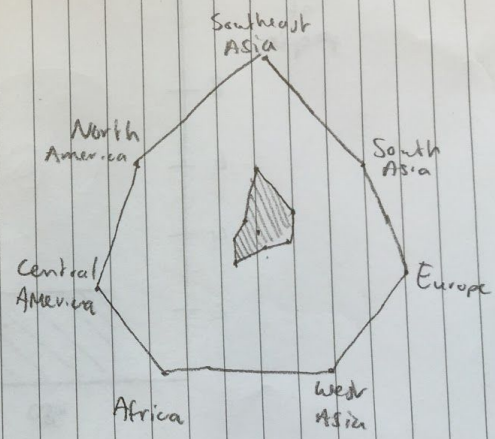
Part 2



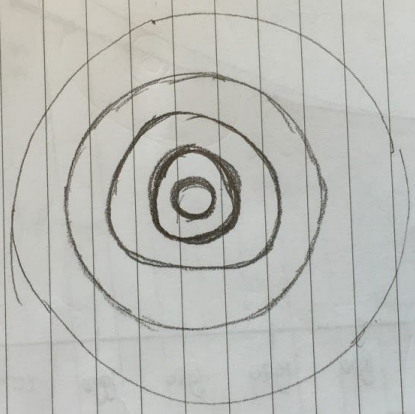
year 1000
Relative Continental Population



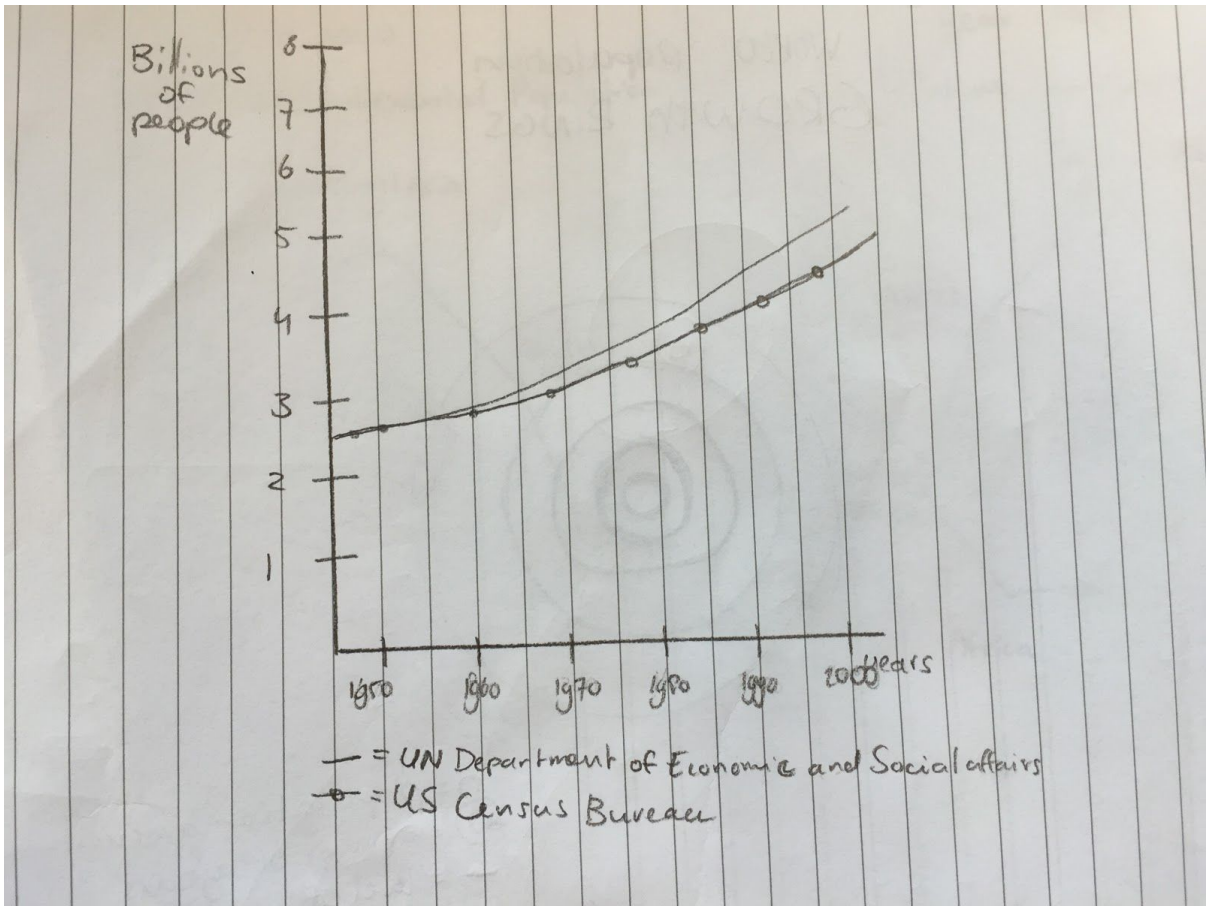
year 2000
Relative continental Population



World population
GROWth RINGS



O = population amount
= amount of years
— = level of uncertainty



https://i.redd.it/i5ibxzoinaoy.gif
(interessante .gif die ik tegenkwam over world population per continent)

Part 3: Reflection

The most ideal designs for data representation are ones that show data in a way that the image doesn't distort the data or tries to manipulate what the viewer should think. If this happens, the image can be misleading. It is important to depict the data in an honest way. A useful design for this is a 2D bar chart. When using 3D elements, certain bars can be exaggerated and distort the image. Therefore it can be better to use a 2D chart.

Another issue when representing data is that not all data sets are complete or reliable. The development of the world's population has been covered by many different sources with many different predictions. When you try to represent this data, you have to decide which sources to use in your graphs, otherwise the image will become cluttered and the message you try to bring across will be unclear.

One last element that is important is the scale of the data you try to represent. The data on the evolution of the world's population spans over a large amount of time. In some periods, the data is also not complete. When using a timeframe that is too large, your depiction can become unreliable and incoherent. From 1950, the world's population records have become much more accurate and reliable. Therefore we mostly chose this timeframe for this assessment.