

This visualization was approached with the question: “Does comparing the population of different age groups reveal insights which support or oppose the idea of an ‘aging population’¹ in the United States?” With a few adjustments, the data can tell us a lot more than we think.

I began by encoding the Gender to “Men” and “Women”, and calculated the “Percent of Total Population” for each cell. This was accomplished by dividing each cell by the sum of all the values with the same “Year”. The year in which each age group was born was then calculated by subtracting the “Age” from the “Year”, and it was saved as “YearBorn” and used in the Tooltip. Once all the necessary variables were assigned, I could then proceed with the analysis and comparisons. By standardizing the population with percentages, the differences in magnitude can be removed, although the individual values are immediately hidden. The differences between the genders is seemingly negligible, so it is appropriate to combine their values for a majority of the analysis.

When experimenting with different charts and graphs, the area graph was chosen to best represent the change in demography at these two snapshots in history. The two graphs are overlayed upon one another and the stark differences can be seen, where blue and orange were used for their ability to capture attention, and help distinguish the two years from each other within the same chart. There is a significantly lower proportion of individuals born between 1965 and 2000, which does not follow the same trend as the rest of the visualization. This suggests that fertility rates significantly dropped around this time, and is supported by the fact that oral contraceptives were first approved by the Food and Drug Administration in 1960². This reduction has increased the median age of the United States, which is apparent from the space between the overlayed charts, where there are more individuals above the age of 40 comprising the total population in 2000, when compared to the proportion from 1900; this is roughly a constant three percent increase. This difference in proportion is taken from individuals under the age of 40, which is most apparent with the over ten percent difference of newborns, where this age group represented over twenty-four percent of the population in 1900, while they made up less than fourteen percent of the population by 2000.

Because the median age of the United States has increased and the representation of younger people in the national census has dramatically decreased, signs of an aging population can be observed. The use of area graphs to represent population proportions versus age is optimal for this question, where the true values are not immediately shown. However, hovering over points and selecting different portions of the visualization reveals these values, as well as information about when the age group was born, which helps guide the viewer through the data. This dataset is incredibly useful in the educational setting, where budding analysts are tasked with manipulating and contorting the data to reveal valuable insights. Initially viewing the data without standardization results in an opposing conclusion, which has the possibility of leading people to incorrect, or uninformed conclusions. Although technology allows us to quickly analyze and understand huge datasets, it can be initially overwhelming, and exercises such as this are a great way to learn what does, and doesn’t work.

¹ Aging Population. <https://goo.gl/niHsNe>

² FDA's Approval of the First Oral Contraceptive, Enovid. <https://goo.gl/cY2v3W>