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DATA VISUALIZATION: INDIVIDUAL PROJECT

FIRST VERSION "DECEPTION"

A brief idea about the article, as mentioned in the First Version "Redesign" document is:

The article about America's gun violence problem[1] describes in detail the gun control and homicide issues that the USA has been facing since the past couple of years. This is explained through various charts, graphs and maps utilizing multiple data sets from different data sources.

As my First Version "Deception" of the data product, I have chosen the first 3 visuals of the article, all of which I worked with on my 'Redesign' project as well. The matter that these 3 graphs are trying to put forward can be summarized as below:

1. Graph 1: Number of firearm homicides in the USA compared to the other countries of the world.
2. Graph 2: (World v/s USA) Total population compared to the number of civilian owned guns among the population.
3. Graph 3: The increase in the number of mass shootings in the USA since the Sandy Hook incident in 2012.

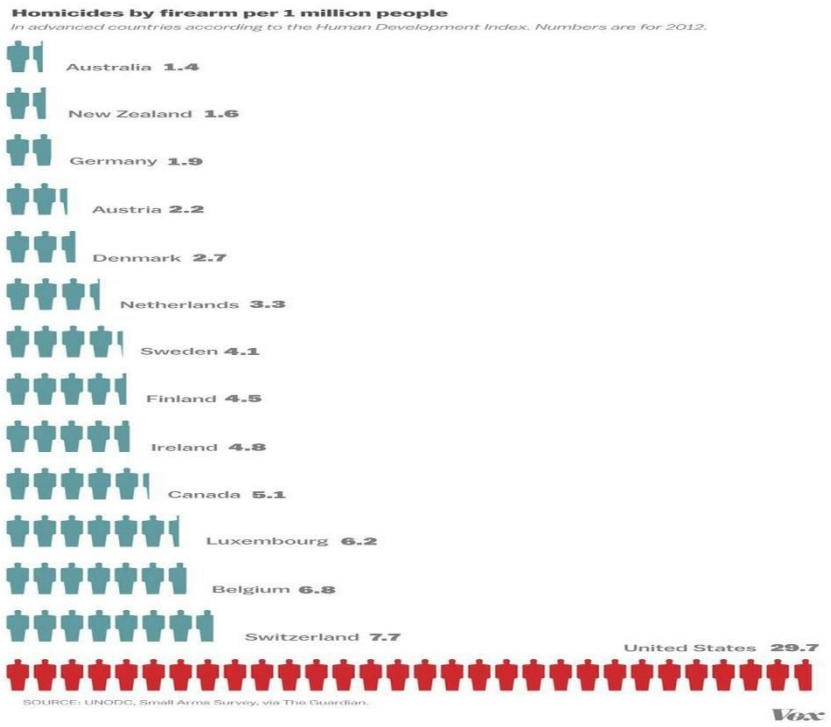
In this document, I take the original visualizations from the article and try to develop a deceptive version of these visualizations. These deceptive graphs are mentioned below along with the details on their making , cleaning and datasources.

1. **Graph 1 : Firearm Homicides per Country**
   a. Datasource: The data source for this graph can be obtained from here : https://docs.google.com/spreadsheets/d/1chqUZHuY6cXYrRYkuE0uwXisGaYvr7durZHJhpLGycs/edit#gid=0

   b. Original Visualization:

      The original visualization of the 1st graph in the article is as follows[2]:

[1] https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts
[2] https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts



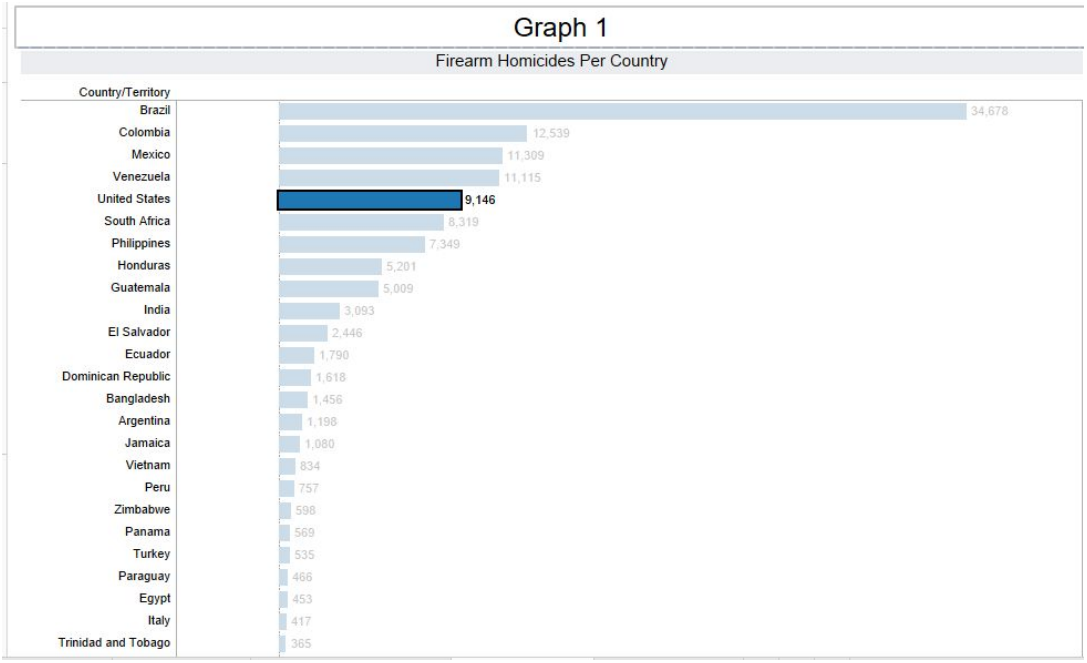
SOURCE:

https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts

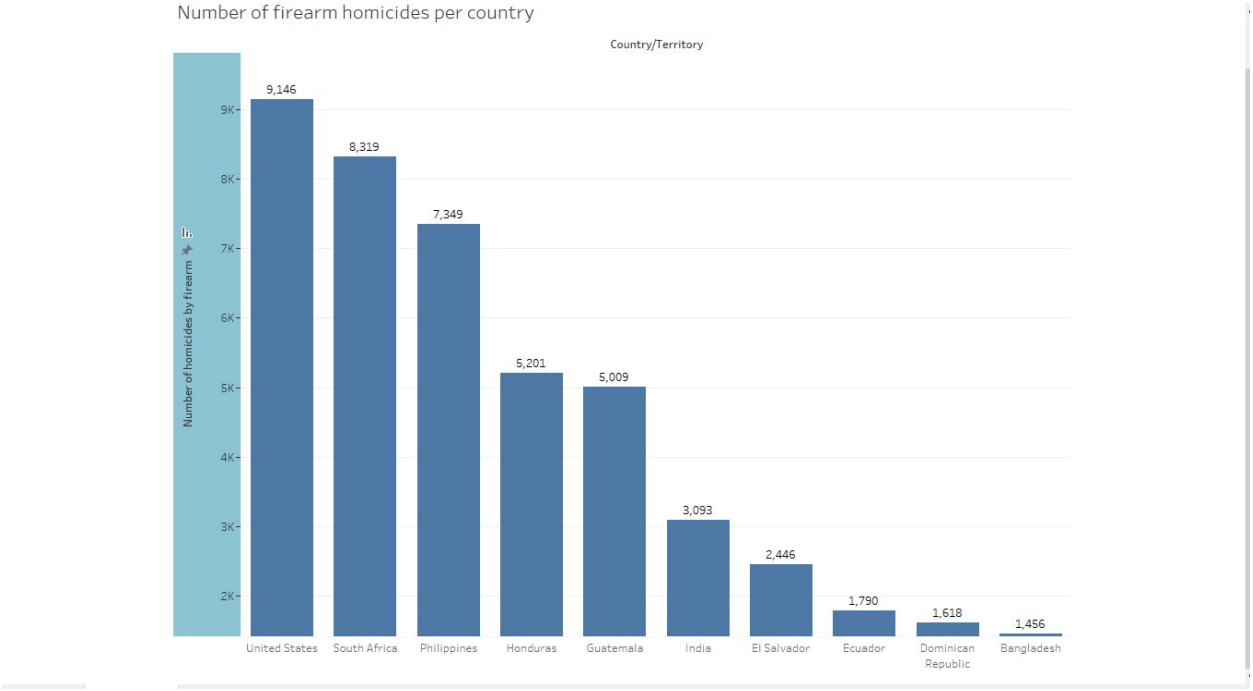
The reason I wanted to develop a redesign and deceptive version of this graph is because according to me, a bar chart could show the details in a better way than the human-figurine format that is shown in the original visualization.

When I developed the 'Redesign' version of this chart, I found that in reality, USA is preceded by 4 other countries - Brazil, Colombia, Mexico and Venezuela in the number the firearm homicides per country. This graph shows the actual view of the situation each country of the world is in, in terms of firearm homicides. It shows that USA is 'NOT' the country with the highest number of firearm homicides in the world, something that the article implies. The redesigned visualization is as follows:

https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph1_redesign/firearm_redesign?publish=yes



c. Deceptive Design: The Deceptive design can be seen here : https://public.tableau.com/profile/saloni.sharma#!/vizhome/g1_deception_may18/Dashboard1?publish=yes



To develop the deceptive visualization, I removed the 4 countries above USA and took only the top 10 countries of the world with the highest number of firearm homicides to

give a better view of the subject matter. This shows that USA far exceeds the rest of the countries with the most number of firearm homicides in the world.

d. Data Cleaning : All steps undertaken to clean the dataset for the above graph is here : https://github.com/SaloniS95/DATA-VIZ-SPRING-2018-SCU/blob/master/g1_deception.ipynb

2. **GRAPH 2 : (WORLD vs USA) Number of civilian owned guns compared to the Population**

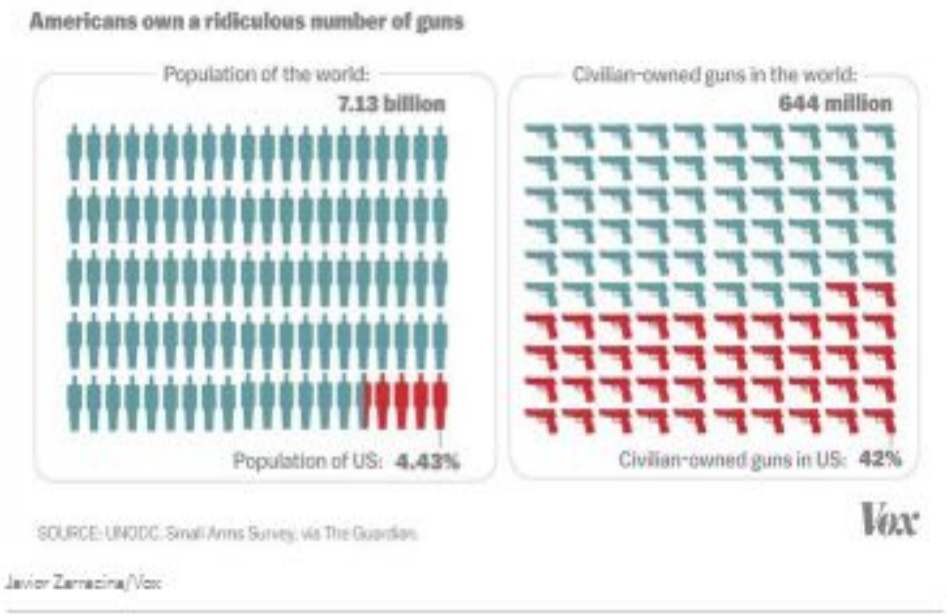
a. Datasource: The datasource is obtained from here :

i. https://photius.com/rankings/population/population_2007_0.html

ii. https://docs.google.com/spreadsheets/d/1chqUZHuY6cXYrRYkuE0uwXisGaYvr7durZHJhpLGycs/edit#gid=0

b. Original Visualization[3]:

The reason I chose to develop a redesigned/deceptive version of this data is that the original visualization does not convey the meaning effectively. Once I developed the redesigned version, I analyzed it to develop a deceptive version. The original visualization is as follows -

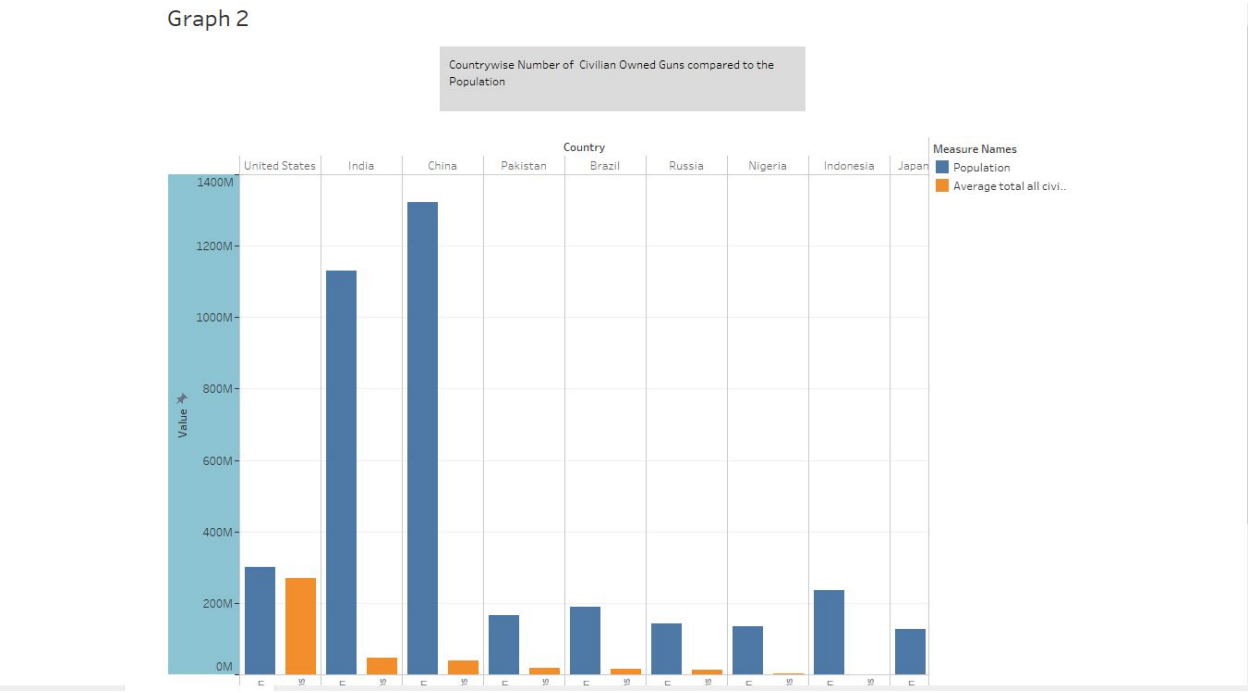


SOURCE: https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts

[3] https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts

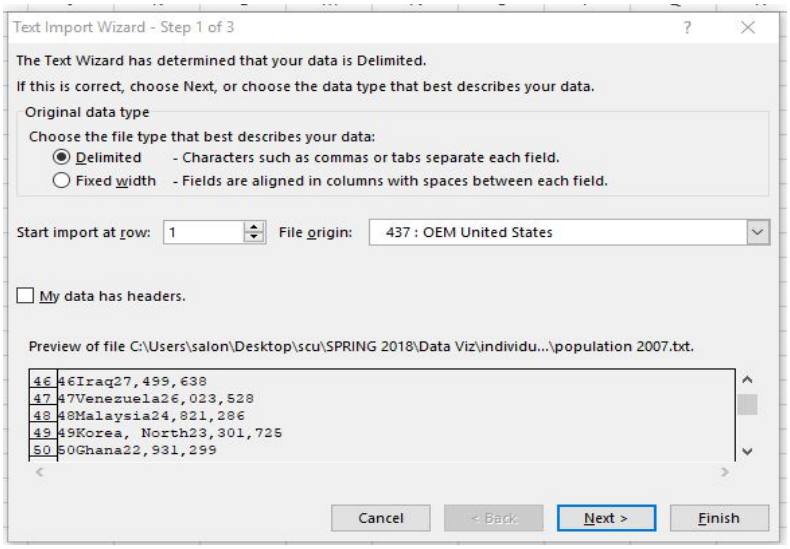
c. Deceptive Design : The deceptive design can be seen here : https://public.tableau.com/profile/saloni.sharma#!/vizhome/g2_deceptionmay18/g2_deceptionmay18_1?publish=yes

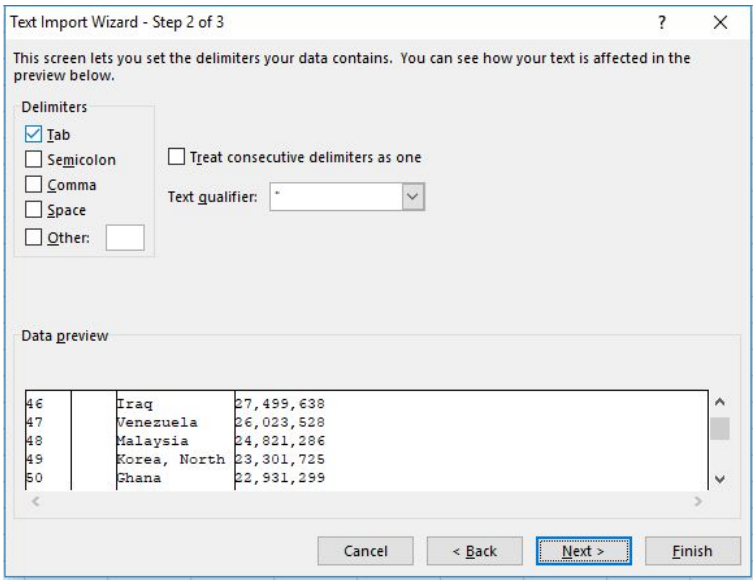
Graph 2



I developed a side-by-side bar chart to show the population and the average number of civilian owned firearms next to each other. What this does is that the Y axis has only 1 scale for the range, and because the actual total population is of the USA is more than the number of average number of civilian owned guns, it provides a counter argument to the article's claim.

d. Data Cleaning: The cleaning portion for the deceptive part follows a few steps from the redesign as well. For this visual, I used 2 datasets. The dataset from Photius (https://photius.com/rankings/population/population_2007_0.html) had to be first copied and pasted into notepad, from where I opened it in Excel selecting the following criterias:





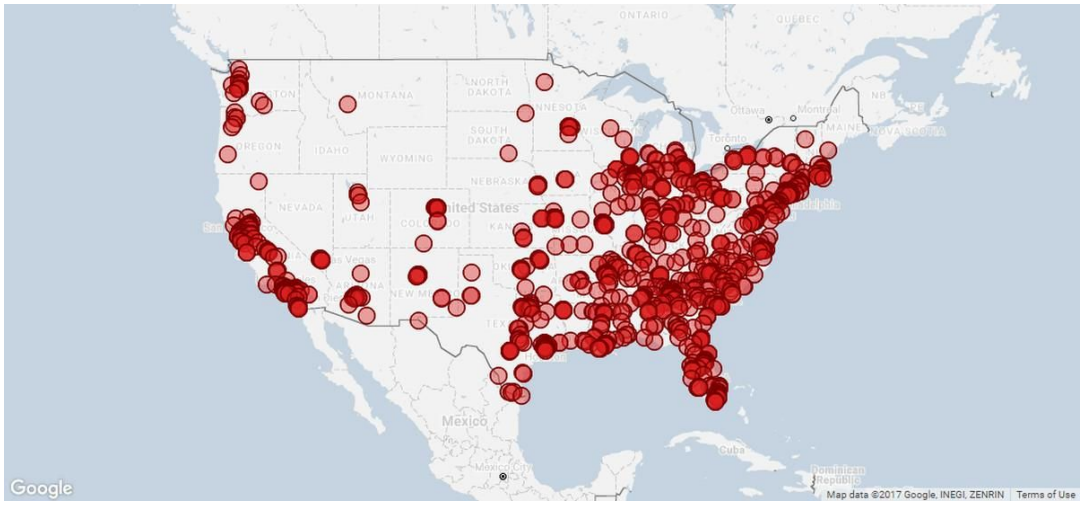
Once the data opened in Excel, I gave the headers to the last 2 columns as “Country” and “Population” so that the analysis could become easier. The next steps of cleaning the data of the Excel file can be found here: https://github.com/SaloniS95/DATA-VIZ-SPRING-2018-SCU/blob/master/g2_deception.ipynb

3. GRAPH 3 : MASS SHOOTINGS:

a. Datasource: The datasource is from here : http://www.gunviolencearchive.org/reports/mass-shooting

b. Original Visualization[4]:

The original visualization is as follows:



SOURCE: https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts

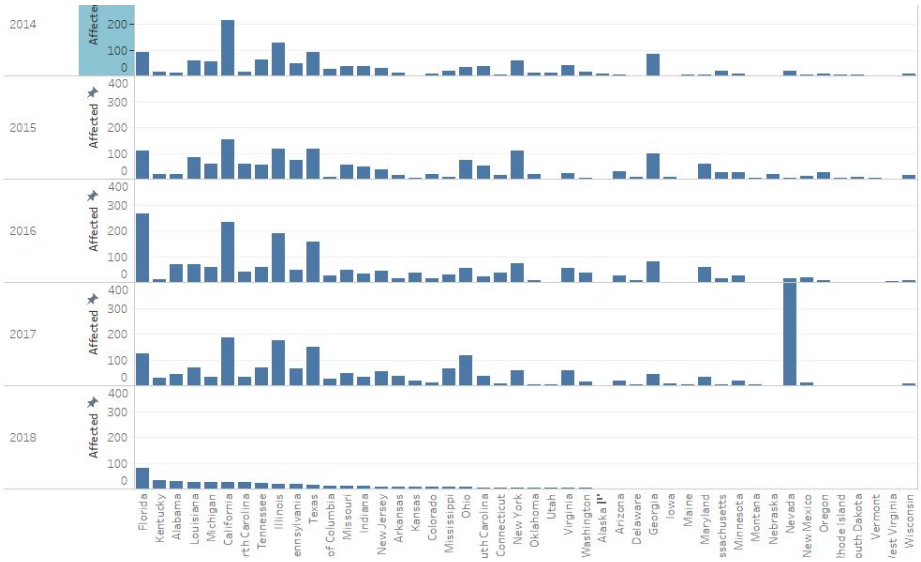
I picked this graph to develop redesign and deceptive graphs because it does not put forth the point about the increase in mass shootings quiet effectively. It is unclear what the dark and light red spots mean , they do not show effectively how many number of people have been affected by the mass shootings, or how many mass shootings have occured since the Sandy Hook shooting in Dec 2012.

c. Deceptive Design :

From my Redesign graph , I found that like the article states, the number of people injured/affected by mass shootings have increased since Sandy Hook Elementary school shooting, but the number increased till 2016. There was a decrease in that number from 2016 to 2017 in for a lot of states, except for Nevada, Ohio, Pennsylvania, etc. as shown below :

https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph3_affected_deception/graph3_affected_deception?publish=yes

[4] https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts

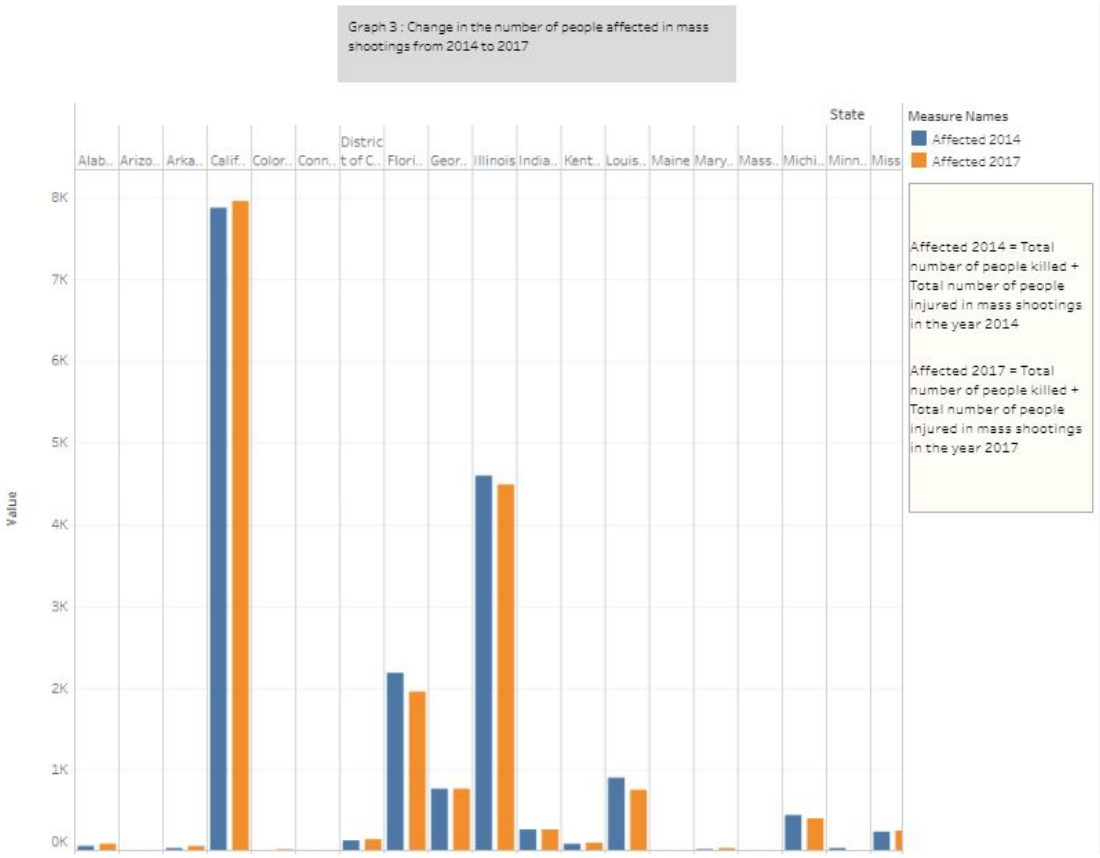


Hence , for my deceptive version, I decided to concentrate on the years 2014 and 2017 only. If we wanted to see a 'change' in the number of mass shootings over the years, analyzing only these 2 years would give a better idea about the matter. I developed 2 deceptive versions of the graphs, using the following 2 methods:

1. I took all the mass shootings that happened in both 2014 and 2017. Then I summed of the total number of affected (killed + injured) people by the mass shootings for each state for both the years.
2. I found the average number of affected people in 2014 and 2017, got the list of locations above the average , and tried to plot the common locations and see the changes in the number of affected people

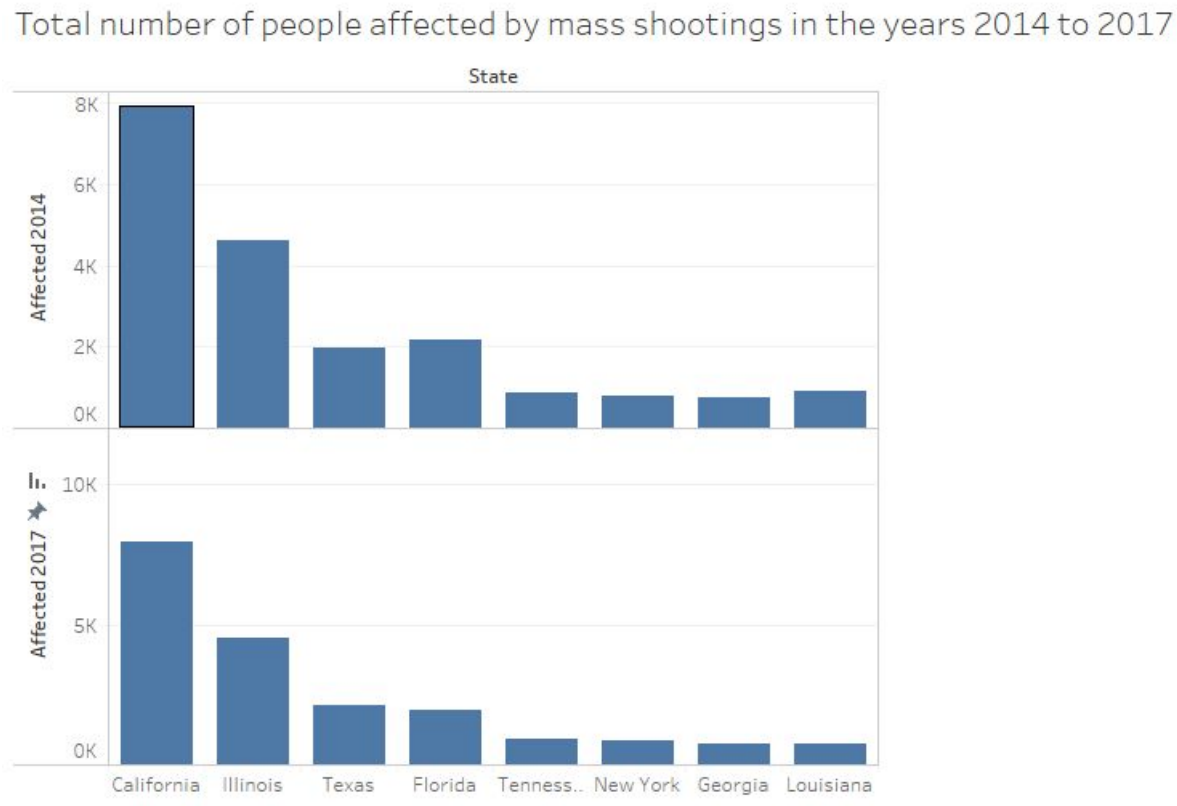
The graphs obtained by using the above two methods are as follows:

1. The first graph to find the change in the total number of affected people in mass shootings from 2014 to 2017 can be found here : https://public.tableau.com/profile/saloni.sharma#!/vizhome/g3_deceptionmay18/g3_1touse?publish=yes



This graph shows that for most states except Nevada, California, etc. the total number of people affected by mass shootings has reduced from 2014 to 2017 . However, as this graph consists of a lot of states, it is a bit hard to analyze. Hence , I decided to develop another version to get an improved view about the mass shootings.

2. The second graph gives a better idea by taking only a few states from the entire list. The graph can be seen here :
https://public.tableau.com/profile/saloni.sharma#!/vizhome/g32_deception2/g3_deception2_1?publish=yes



This graph consists of only those states for whom the Affected 2014 and Affected 2017 columns are above the average number in each of these columns.

By changing the scale of the 'Affected 2017' data, the deceptive graph above shows that there has been a significant amount of decrease in the total number of affected people by mass shootings from 2014 to 2017, which is opposite to what the article states.

d. Data Cleaning : The data cleaning process can be seen here: https://github.com/SaloniS95/DATA-VIZ-SPRING-2018-SCU/blob/master/g3_deception%20.ipynb

➢ **Roadmap for the Future :**
The future roadmap can include the following issues/ shortcomings of the above displayed deceptive visualizations :

a. The 1st graph of Graph 3's deceptive visual has all the states in it. Even though I did reduce the number of states in the 2nd graph, I think there is a better way to present all the information of the said 1st graph in a better way without loss of much information.

b. Merge other datasets like that of drug and alcohol use with the datasets of the article in a way that very less information from both sides is lost, to come up with some information about the relationship between gun violence and drug abuse.
c. To get a better idea about the scenario of mass shootings in the USA, instead of summing the total number of people affected by it, I can try to count the number of shootings that have happened in each state to get a better idea about how bad the mass shooting issue is in the USA.