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Problem Statement: Gun Violence in the United States

Guns are a top issue in the United States. However, the media on gun violence in America seems to have become heavily politicized and thus polarized. The basic argument seems to break down into two camps, either supporting gun control or support the second amendment's right to own guns with the first side trying to emphasize the damage guns cause and the other side trying to emphasize the value of guns. The literature generally states that America is an outlier in deaths by guns because "…where there are more guns, both men and women are at a higher risk for homicide, particularly firearm homicide." (Hepburn, Hemenway)

This project will look at the Vox article, "America's unique gun violence problem, explained in 17 maps and charts", by German Lopez, redesign three of the data products to show interesting, non-trivial results, and use the same data to create three deceptive data products.

Effective:
The entire article does an effective job of presenting and persuading the reader that America has a unique gun violence problem compared to other developed countries. The early visualizations of how many homicides per million people in the U.S. compared to a select few other (mostly European) countries is effective in telling a story that America has a lot more gun homicides than other places. The simple image of human silhouettes lined up representing number of deaths makes it easy to understand how many more people die of gun homicides in the U.S. The next effective image is comparing the U.S. population to the world and the percentage of guns owned in the U.S. This clearly and simply shows how large a proportion of civilian guns the U.S. owns for making up such a small percentage of the world population. Finally, the article does a fairly effective job at visualizing the relationship between gun ownership and gun deaths by state and by country. The two images, fairly clearly, communicate that as the number of guns per capita increases, the number of gun related deaths per capita also increases linearly.

Ineffective:
A less effective visualization is #7 which is attempting to show how America is not an outlier for overall crime but is for gun deaths. The chart selects 15 'Industrialized' countries and shows nonviolent and violent crimes. The U.S. is in the middle which does point to not being an outlier for overall crimes, however the graph does not do a good job of still showing gun deaths. It is unclear whether the purple portion, listed as violent crime, is supposed to be an indicator of gun deaths. It might be clearer if overlaid on this graph of crime data was also the amount of gun deaths each of these countries had per 100,000 people. Another visualization that is difficult to read is #8 which is trying to show states with tighter gun control have less gun related deaths. The color scheme showing gun deaths makes sense, though it is harder to read for some states, but the image really lacks in showing tighter gun control laws. States with at least 1 firearm law to protect children are outlined and that only seems to be weakly correlated with fewer gun deaths.

Proposal:

For this project I will redesign the data products for the gun ownership and gun deaths relationship. I will do this both looking at the relationship internally amongst states in the U.S. and I will also do another data product for the relationship for gun ownership in each country and the gun deaths in the country. For the final redesign, I will look at how crime rates and gun deaths rates compare across countries. The goal will be to better visualize how the U.S. is similar in overall crime but different in gun deaths.

For a deceptive data product, the data comparing gun deaths and gun ownership across countries could be used to show potentially no significant relationship and maybe even a graph where a line would be drawn to show that gun deaths actually decrease as gun ownership increases. This would be deceptive because data points from underdeveloped countries with lower gun ownership, but higher gun deaths could skew the data.

Another deceptive data product could be overlaying the data showing firearm homicide deaths decreasing from 1990-2010 while the number of guns being made in the U.S. increases. The deception would show that gun deaths are decreasing even as more guns are being put into the economy. However, gun deaths could be decreasing with general crime decreasing and gun manufacturing could be for military and/or exports.

Finally, another deceptive data product could be used from the methods of fatal suicide attempts. The article shows only a few methods and from Indiana data, so there could be potential to blur the effects of firearm lethality by adding more methods and not using a pie chart.

Sources:

- **Hepburn, Lisa; Hemenway, David**. Firearm availability and homicide: A review of the literature. *Aggression and Violent Behavior: A Review Journal*. 2004; 9:417-40.
- Lopez, German. *America's unique gun violence problem, explained in 17 maps and charts.* https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts