**Problem Statement:**

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**1.What does the literature tell you about the topic?**

This article focuses on gun violence topic and it tries use 17 maps and charts to explain America has the unique gun violence problem among other developed world from three perspectives: what the gun violence looks like compared to the rest of the world? why it happens? why it’s such a tough problem to fix?

### About the gun violence, the author defined it by mainly talking about firearm homicides, mass shooting and suicides.

### Firstly, it brought several facts of the overall country like America’s firearm homicides, population (4.43%) vs. civilian-owned guns around the world (42%), number of mass shootings (over 1600) since 2012 and average mass shooting occurrence rate (around one mass shooting) for each day) in America.

Secondly, it introduced several points about the states. For example, NO.5 says that states with more guns have more gun deaths and this also goes the same with other developed countries. But what makes America different is that its overall crime is lower that average level but the violence is more lethal mostly because of the prevalence of guns. And NO.8 says that states with tighter gun control laws have fewer gun-related deaths, which seems to indicate that restricting access to guns can save lives. Also, NO.11 talks about the most guns report the most suicides and NO.14 says more guns. More police officers are killed on duty.

### Thirdly, the author illustrates that gun homicides have declined over past decades but firearm suicides are increasing maybe because of gun kills more easily. Although policies that limit access to guns did decrease suicides, support for gun ownership seems to increase and high-profile shootings don’t lead to more support for gun control in the long term.

**2.Where and why is the data product (in)effective?**

About effectiveness, I think there are several:

* At the very beginning it inserts a short video and presents the topic in a vivid way, which gives readers a brief introductory and attracts them to go through the following 17 points.
* For the NO.4 point, using the calendar graph, it is very direct and clear for readers to understand that mass shootings are happening almost every day on average level.
* Comparison between NO.6 and NO.7 is necessary and argumentative. This can teach readers to be analytical and notice that America’s overall crime rate is lower but its violence is lethal because of prevalence of gun.

But on the other hand, it exits several problems which influences its ineffectiveness. And I will list them as follows:

* Some of the charts are not persuasive to make the conclusions. For instance, NO.11 presents a charts to compare states with the highest and lowest rates of gun ownership, which I think is limited to support the point that “more guns, more suicides”.
* Data source needs to be updated. Like charts in NO.8, NO.12, the author cited outdated data in 2007 and even between 1990-1997 when data might have changed now and does not support the opinion any more.
* Screenshots of other studies are not clear and hard to understand without background introduction. Like NO.15-No.17, the author all used Pew Research Center survey result and it was a survey on over 1000 persons. I doubted its persuasiveness and some of the citations on picture are hard to understand like Rep/Lean Rep.

**3.What is your proposal to redesign the data product?**

Firstly, I will divide the whole points to three parts and build a clear structure to help reader catch up with the author’s thoughts.

Because about this topic, I think the author’s analysis logic to answer the question why America’s gun violence is a unique problem from three perspectives is relatively clear in the first paragraph and can be used when we redesign.

But when we read this long article, it might be confused in the middle and at the end about all the 17 points. Because it did not have clear sub parts and different points are just listed. So this will be the first thing I want to redesign.

Here is an example from The Guardian(<https://www.theguardian.com/us-news/ng-interactive/2017/jan/09/special-report-fixing-gun-violence-in-america>). It has titles and simple instructions when reader rolls down each page.

Secondly, I will discard the charts which are cited or screenshots from other articles or websites and unified all the formats. Because this is a story-telling article by charts, and it will be necessary to keep charts clear and easy to read. So with all the original data, I will use Tableau or other data visualization tools to present simple but powerful picture after we learn more.

Thirdly, I might consider to add one interactive part to attract readers and be more involved in this topic.

Here is an example from FiveThirtyEight wesite (<https://fivethirtyeight.com/features/gun-deaths/>). It leads readers to click their findings at the beginning and is intuitive to understand how gun violence cause deaths.

**4.What are potential starting points for a deceptive version and why are they deceptive?**

According to the definition of Deceptive Visualizations sourced from Medium (<https://medium.com/@Infogram/study-asks-how-deceptive-are-deceptive-visualizations-8ff52fd81239>

There are several distortion techniques if used that might exaggerate message or even reverse the message. For example, it mentioned truncated axis, area as quantity, aspect ratio and inverted axis.

So in this article, I initially think the first two two points we can change for a deceptive version are the followings:

* For No.5 point, if we change the vertical axis range from per 100,000 residents to per 1 million residents or 10,000 residents, the result might be understated, thus affecting the user’s understanding of “more guns more death”.
* For No.10 point, if we revert the vertical axis of homicides numbers to horizontal, and the year axis to be vertical, then the decreasing trend and increasing trend might not be visible and make readers susceptible to draw false conclusions.
* For No.14 point, if we magnify the vertical axis parameter, then the difference between the highest rate and the lowest rate would not be that large. So the readers may not notify more police officers are killed on duty.

**5.Have you obtained access to the mentioned data sources or identified replacements/potentially important additions?**

1&2. World firearms murders and ownership

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

3. Gun Violence Archive – Mass Shooting Lists

<http://www.shootingtracker.com/Main_Page>

<http://www.gunviolencearchive.org/reports/mass-shooting>

4. None (websites could not be found)

5.  Study in Injury Prevention

<http://injuryprevention.bmj.com/content/22/3/216>

Centers for Disease Control and Prevention, Mother Jones

<https://www.cdc.gov/nchs/pressroom/sosmap/firearm.htm>

6. None (no source attached)

7. International Crime Victims Survey (ICVS) by Jeffrey Swanson

<http://www.unicri.it/services/library_documentation/publications/icvs/data/>

## 8.Number of Deaths Due to Injury by Firearms per 100,000 Population <https://www.kff.org/other/state-indicator/firearms-death-rate-per-100000/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

9. Harvard Injury Control Research Center Firearms Research - Homicide

<https://www.hsph.harvard.edu/hicrc/firearms-research/guns-and-death/>

10. Centers for Disease Control and Prevention <https://webappa.cdc.gov/sasweb/ncipc/mortrate10_us.html>

“Most gun deaths are suicides, not homicides. That's a strong case for gun control.”:

<https://www.vox.com/2015/6/3/8721267/gun-suicide-gun-control>

11. “Guns and Suicide in the United States”: <http://www.nejm.org/doi/full/10.1056/NEJMp0805923>

12. Journal of Epidemiology and Community Health: <http://journals.bmj.com/>

13. Do Gun Buybacks Save Lives? Evidence from Panel Data

<http://ftp.iza.org/dp4995.pdf>

14. "Firearm Prevalence and Homicides of Law Enforcement Officers in the United States": <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302749>

15. Pew Research Center surveys “Views on gun policy”: <http://www.pewsocialtrends.org/2017/06/22/views-on-gun-policy/>

16. Pew Research Center surveys “Views on Gun Laws Unchanged After Aurora Shooting”:

<http://www.people-press.org/2012/07/30/views-on-gun-laws-unchanged-after-aurora-shooting/>

17. Pew Research Center surveys “Bipartisan support for some gun proposals, stark partisan divisions on many others”:

<http://www.pewresearch.org/fact-tank/2017/06/23/bipartisan-support-for-some-gun-proposals-stark-partisan-divisions-on-many-others/>

**Potentially important additions:**

Centers for Disease Control and Prevention <https://wisqars-viz.cdc.gov/>

Gun Violence Data <https://everytownresearch.org/gun-violence-by-the-numbers/>

FiveThirtyFive Github Data https://github.com/fivethirtyeight/guns-data/blob/master/README.md