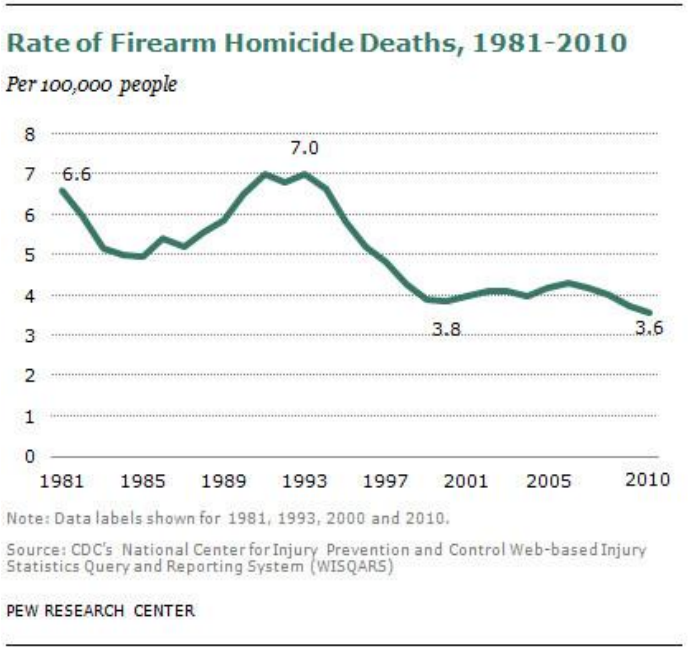
Making-of

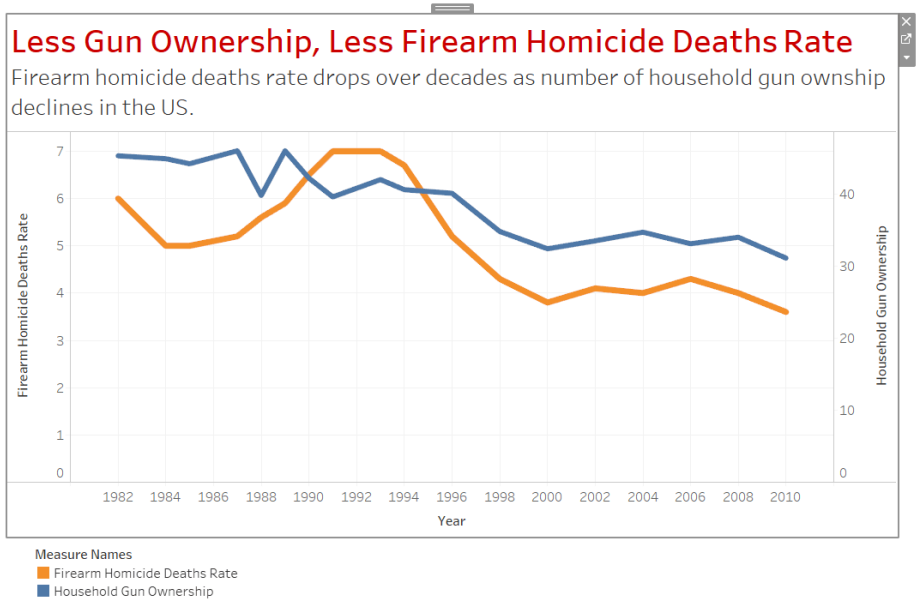
Jun Xing

Finding 1:Less Gun Ownership, Less Firearm Homicide Deaths Rate

Original Version:

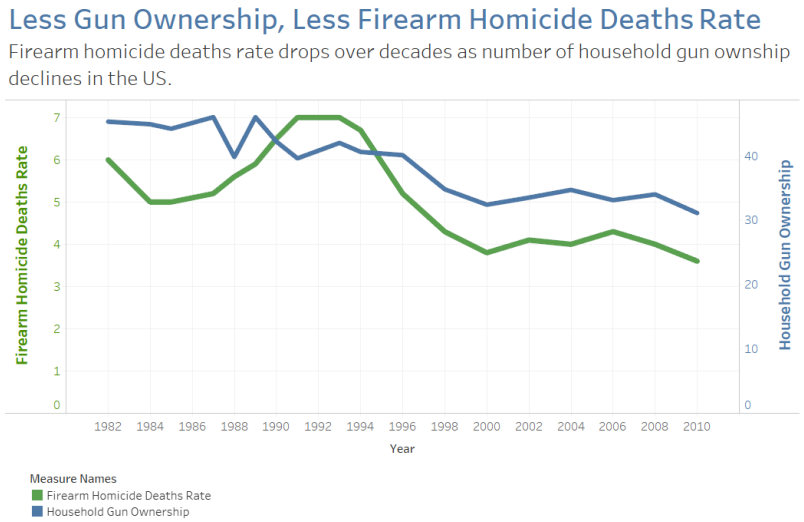


After Re-design:



Data source: GSS POLL

Final version:



Data source: GSS POLL

- Idea:

The original version only points out the firearm homicide deaths rate is declining overtime in the visualization. The author then explained how it's not about "more guns have deterred crimes" by wordings. But actually, it sounds farfetched and difficult to understand from the visualization. So, my idea on this re-design starts from how to logically solve this contradiction. My answer to this is "what if we can prove that there are fewer people owning a gun?". If less gun ownership is true, the declining firearm homicide deaths rate will sounds reasonable for the anti-gun arguments.

- Data Source:

Took me a long time to find the original firearm homicide deaths data on p39 of a report: http://assets.pewresearch.org/wp-content/uploads/sites/3/2013/05/firearms_final_05-2013.pdf

And also I found a household gun ownership poll that shares a close trend with firearm homicide deaths rate data on p5 of this report: http://www.norc.org/PDFs/GSS%20Reports/GSS_Trends%20in%20Gun%20Ownership_US_1972-2014.pdf

So the key point for data searching is you must find a similar trend!

- Data Cleaning:

Since there is no available download options for those datasets, I manually recorded them into a csv file. And I noticed that there's some missing years for the household gun ownership data, so I deleted the those years for firearm homicide deaths rate as well.

- Tableau:

Load the data into dual lines graph.

Then put it into a dashboard to add line color notes and data source.

- Critique of first version:

Overall I think my first version has a clear argument and it is easy to understand. But it needs some efforts to figure out which line is firearm related homicides rate and which one is the gun ownership rate. Also, I think the red title is irrelevant here since we learnt about that we should avoid red color for the special meanings it carries.

- Revision in Tableau:

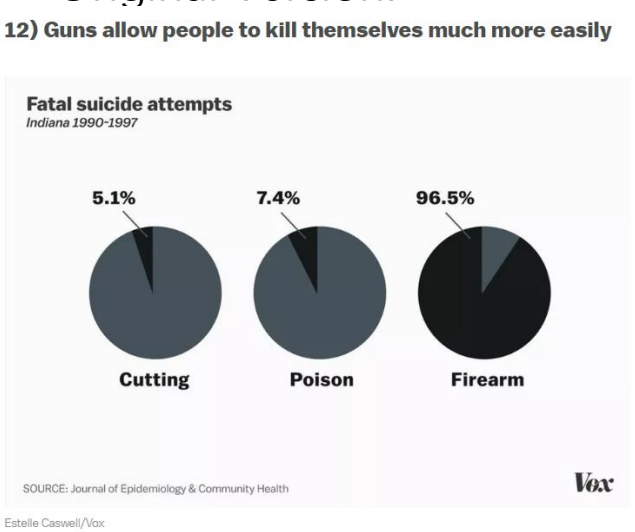
Change the axis colors.

Enlarge the axis texts for easy reading.

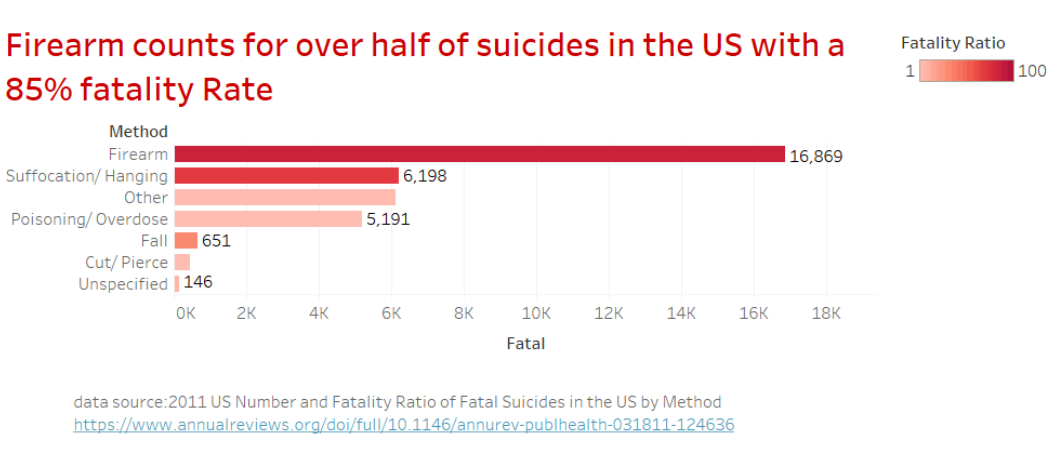
Change both the graph and title color to a more clam color.

Finding 2:Firearm counts for over half of suicides in the US with a 85% fatality Rate

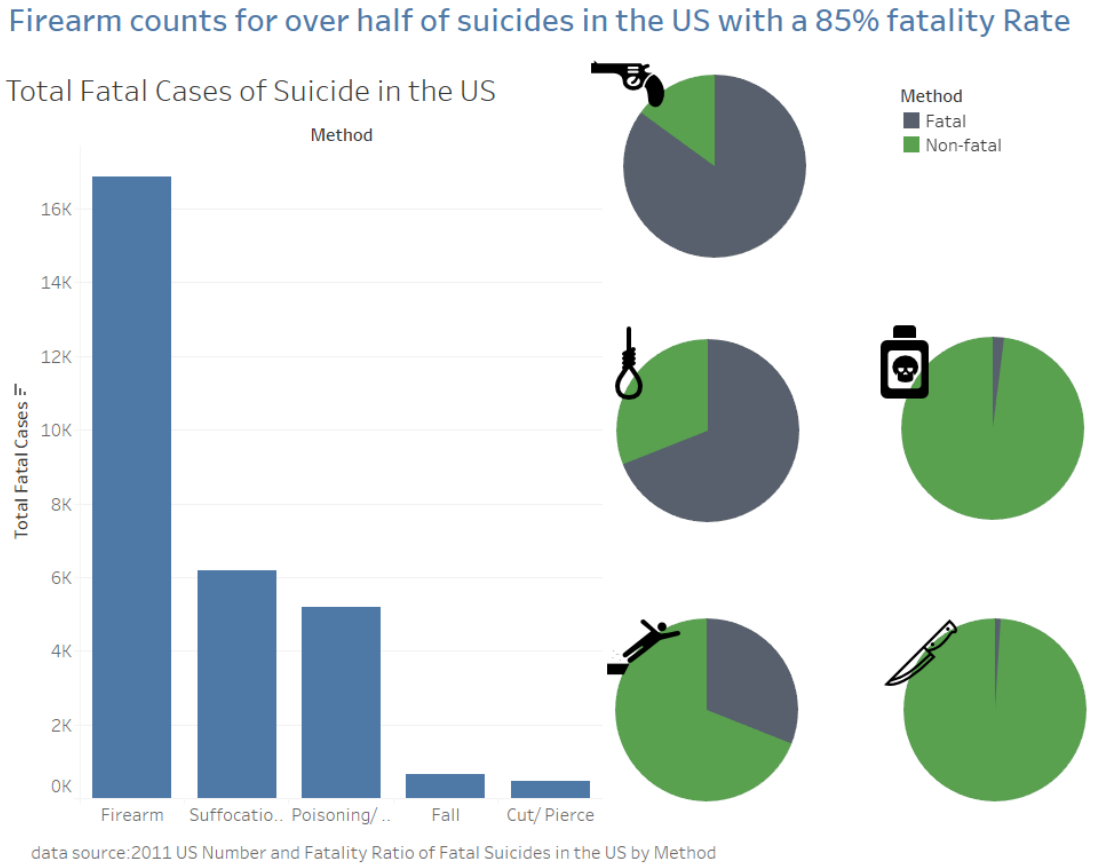
Original Version:



After Re-design:



Final version:



- Idea:

The original version points out the firearm is a deadly method for suicide. But it sound quite obvious. Of course people know that you are more likely gonna die if you put a gun to your head. If you want to prove firearm is the most deadly method for suicide, besides the fatal rate, you can also prove it took most lives compared with other methods. So, it is not just about fatal rate, it is also about the horrible scale.

- Data Source:

https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-031811-124636

- Data Cleaning:

Since there is no available download options for those datasets, I manually recorded them into a csv file.

- Tableau:

Load the data into line graph.

Since we want to include both the scale and ratio into one graph, I use fatal rate for color variation.

Then put it into a dashboard to add variation color notes and data source.

- Critique of first version:

Although my re-design version contains more information than the original graph, it is difficult to read and understand. Especially for the fatal rate of different suicide methods, the gradient in colors is not that easy for human eyes to catch the differences even with a legend.

Also, I think I should not use too many red colors in my work.

- Revision in Tableau:

Use pie graphs to indicate the fatal rate for every method.

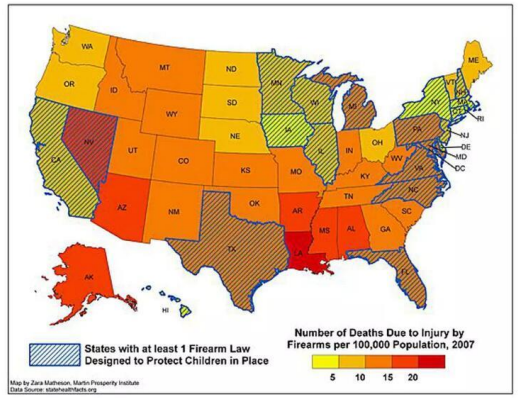
Add images to represent different method of suicides for better understanding. (Download images from flaticon.com, put them into “My Tableau Repository” and then load them into my dashboard.)

Change both the graph and title color to a more clam color.

Finding 3:National Firearm Regulation can roughly save 129,360 lives every year.

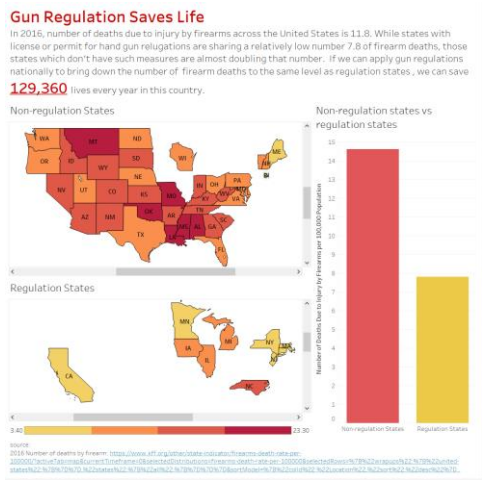
Original Version:

8) States with tighter gun control laws have fewer gun-related deaths



Zara Matheson/Martin Prosperity Institute

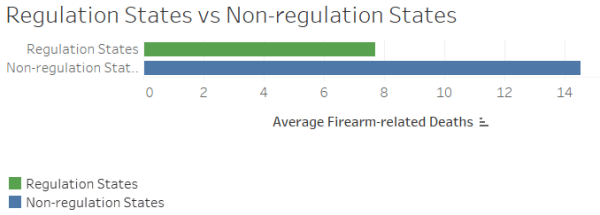
After Re-design:



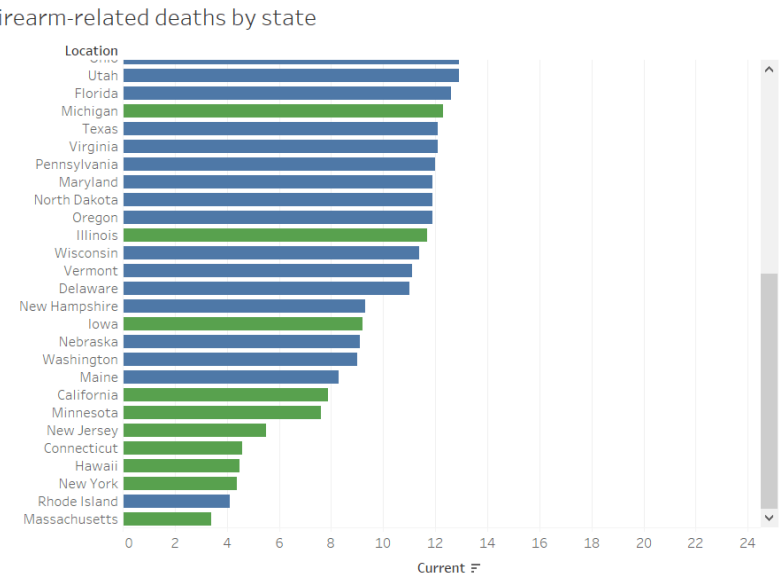
Final version:

Gun Regulation Saves Life

In 2016, number of deaths due to injury by firearms across the United States is 11.8. While states with license or permit for hand gun relugations are sharing a relatively low number 7.8 of firearm deaths, those states which don't have such measures are almost doubling that number. If we can apply gun regulations nationally to bring down the number of firearm deaths to the same level as regulation states , we can save 129,360 lives every year in this country.



Source:Kaiser Family Foundation, The Guardian



- Idea:

The original version points out the states with tighter gun control laws have fewer gun-related deaths. Personality, I think this graph has 2 main problems: 1. The blue filter is difficult to read. 2. it uses child protection law which does not relevant enough for gun control regulation.

My idea for the re-design is:

1. Use a filter to filter out regulation states vs non-regulation states.

2. Compare the average gun-related deaths for different regulation levels.

3. Use requirements of license or permit for hand gun instead of the current children protection laws since it is more relevant and the contraction is more obvious.

4. Tighter regulation will lead to fewer gun-related deaths sounds too obvious. I will add the number of the number of life can be saved per year to make the whole thing more emotionally attach with readers.

- Data Source:

2016 Number of deaths by firearm:

https://www.kff.org/other/state-indicator/firearms-death-rate-per-100000/?activeTab=map&currentTimeframe=0&selectedDistributions=firearms-death-rate-per-100000&selectedRows=%7B%22wrapups%22:%7B%22united-states%22:%7B%7D%7D,%22states%22:%7B%22all%22:%7B%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22desc%22%7D

Regulation states with license or permit for hand gun:
https://www.theguardian.com/world/interactive/2013/jan/15/gun-laws-united-states

- Data Cleaning:

I downloaded 2016 Number of deaths by firearm csv file from the website above.

After that, I manually generated a new column for the states short and a Boolean column for regulation states according to the data above.

Calculate the average and generate a new csv file for the different regulation levels.

- Tableau:

Load the data into Tableau

Set the states as map states.

Put the longitude into columns and latitude into rows.

Choose map graph.

Set map options as a white ground.

Put state shorts into labels and change the text.

Change the map color and range settings

Add group filters from Boolean

Duplicate graphs for different regulation levels

Load different average numbers for different regulation levels into a bar graph

Then put it into a dashboard to edit layouts and add variation color notes as well as data source.

Save life calculation: If the national gun-related deaths drops from current 11.8 to gun regulation states level 7.8, it will be roughly 33.9% decline nationally. Times the population we can figure out we can save 129360 lives every year.

- Critique of first version:

Although my re-design version has a fancy map, it is not easy to read. Also, it is difficult to find both Alaska and Hawaii on my map. Sometimes maybe we embrace “Less is more” instead of using the fancy graphs only for the sakes that they are fancy without other purposes.

Besides, my data source quoting is somehow annoying for the length.

- Revision in Tableau:

Use bar charts to visualize the difference between regulation states and non-regulation states.

Change both the graph and title color to a more clam color.

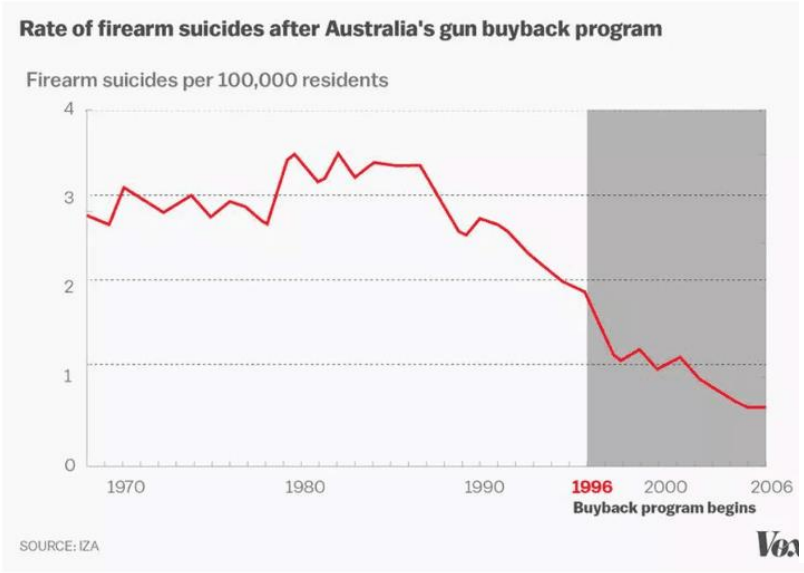
Shorten the data source.

Deceptive Version

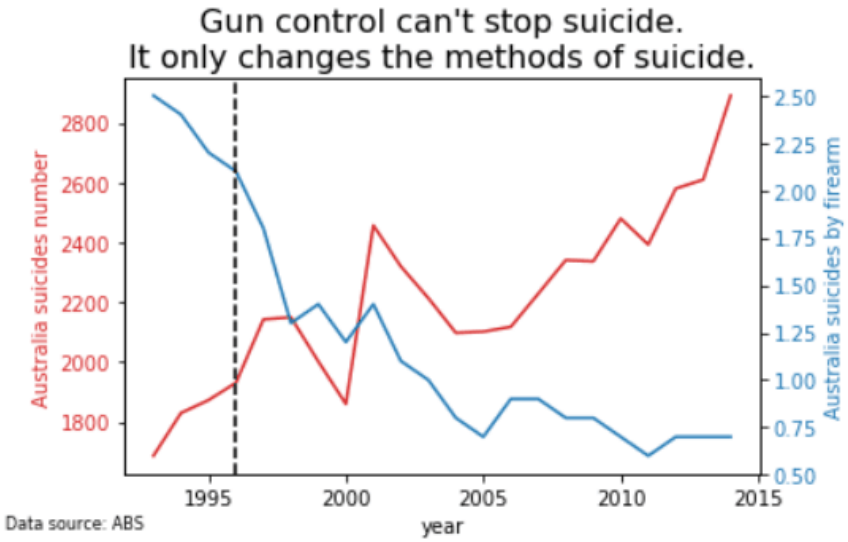
Jun Xing

Finding 1:Gun control can't stop suicide. It only changes the methods of suicide.

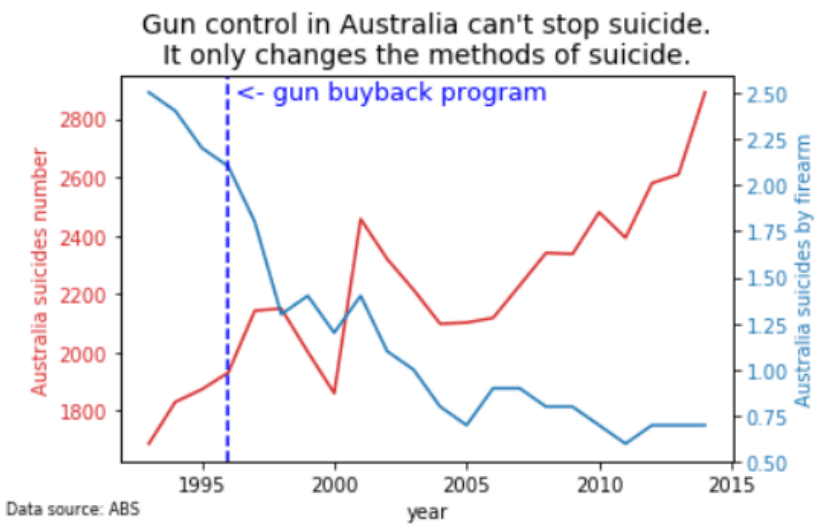
Original Version:



Deceptive Version:



Final Version:



- Idea:

The original version points out that suicides by firearm dropped significantly after the gun buyback program in Australia. In order to make the deceptive version and still keep the original data, we have to prove that the gun control program actually didn't stop people from suicide. We can logically attack the original conclusion by pointing out the total suicide number in Australia is increasing in the past few years. After searching the statistics on suicides in Australia, Bingo! We do have an increasing suicide rate in Australia!!

- Data Source:

Original suicides by firearm data (1990-2014): http://www.abc.net.au/news/2016-04-28/fact-check-gun-homicides-and-suicides-john-howard-port-arthur/7254880

And also I found report showing that total suicides is increasing in Australia:

2001-2010: http://abs.gov.au/ausstats/abs@.nsf/Products/3309.0~2010~Chapter~Suicide+in+Australia?OpenDocument

1993-2003: http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/4410D945E6F9BF2FCA256F6A00735523/$File/3309055001_1993%20to%202003.pdf

2007-2016:

http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3303.02016?OpenDocument

- Data Cleaning:

Since there is no available download options for those datasets, I manually recorded them into a csv file.

Then I set year as x axis, suicides number and suicides by firearm as y axis.

- Python:

#visualize it with line graph since we want to contrast the difference.

#change the axis color for different y axis for easier understanding.

#add title with plt.title() function.

#add a vertical line to indicate the timing of gun buyback program.

#add data source with plt.annotate() function.

- Critique of first version:

Overall I think my first version has a strong argument and it is easy to understand. But the meaning of the vertical line is vague, people still need to figure it by themselves that it indicates the gun buyback program in Australia. Besides, I didn't clearly mention that it is about Australia.

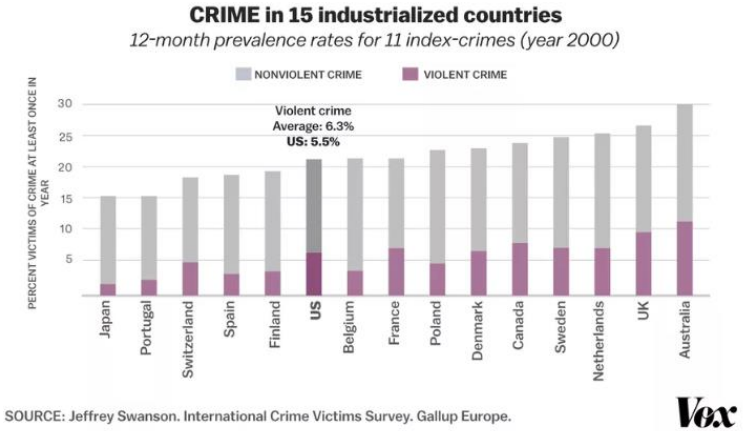
- Revision in Python:

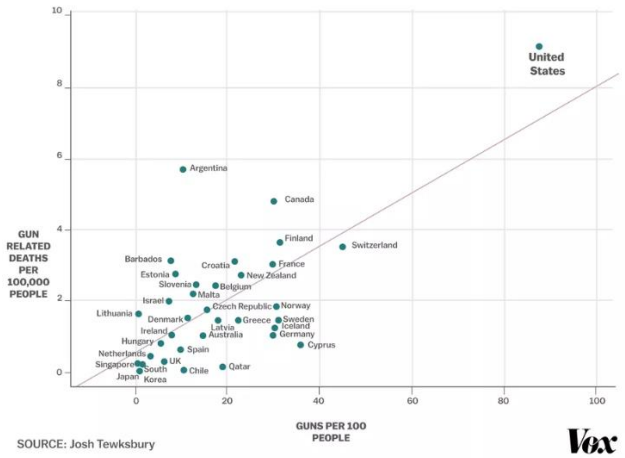
Change the color of vertical line to blue and add a note nearby.

Mention Australia in the title.

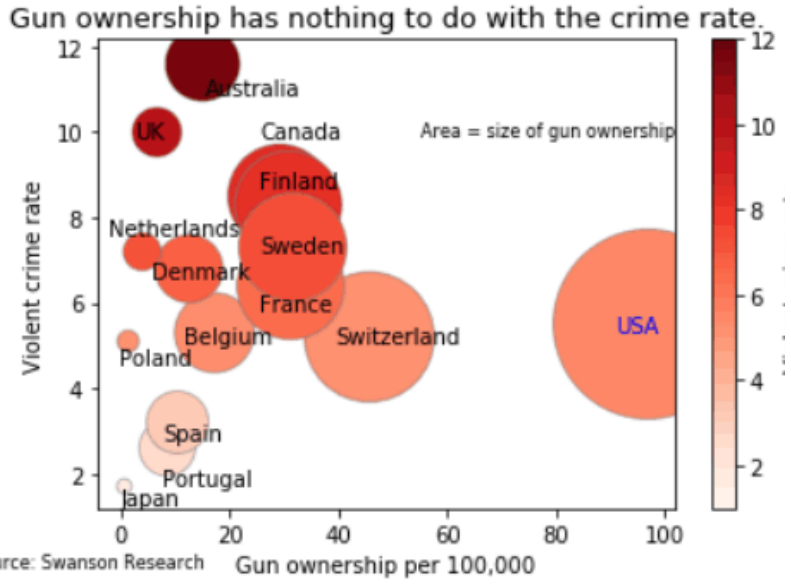
Finding 2:Gun ownership has nothing to do with the violent crime rate.

Original Version:





Deceptive Version:



Data source: Swanson Research

Final Version:

Data source: Swanson Research

- Idea:

I made this deceptive version from 2 original graphs: the first one indicates US has an overall low crime rate which means US people don't like violence. When I first saw the crime data, I think it can be used to prove that even with so many guns, US still has a low crime rate. And the other graph exactly points out that US has an extremely high gun ownership per capita which I can use it to prove my point!

- Data Source:

www.bccfoundation.org/uploads/files/Swanson%20-%20Winslow%20Final.pptx

- Data Cleaning:

I copied those data from that slides and then manually recorded them into a csv file.

In fact, the crime rate data includes both violent crime and non-violent crime. Since there is not much difference in non-violent crime, I only use violent crime rate here.

- Python:

#I decided to use a bubble graph because it can both indicates the size of gun ownership and the extent of the violent crime.

#Set Gun ownership as X.

#Set Violent crime as Y.

#Use Gun ownership to indicates the area of the bubble plot.

#Use Violent crime rate to indicates the color of the bubble plot. Set it as the more violent, the more darker.

Add titles

#add data source and area description

#Add a legend to indicate the crime rate:

plt.colorbar(label='Violent crime rate')

plt.clim(1, 12)

#add labels with plt.annotate() function. Since there are some overlapping on those bubbles, I don't know how to avoid that. So I decided to add label manually.

- Critique of first version:

In the class, we learnt about it is difficult for human eyes to catch the differences by area. But I think I can still keep this scatter plot format since the area for the US is significantly different from others.

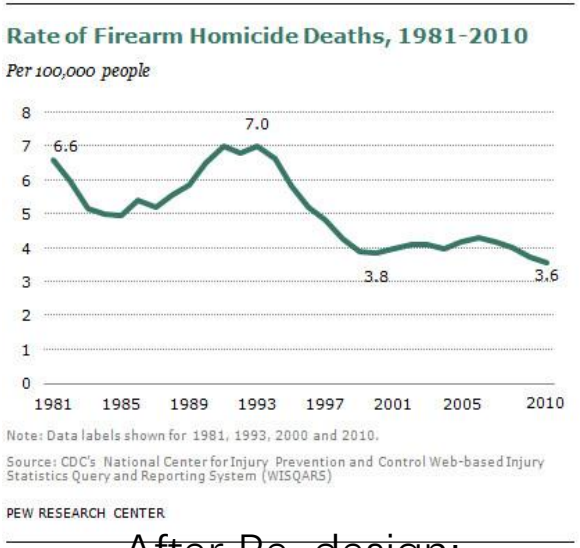
We also learned that it is not a good idea to put too many country names in one graph, so I think maybe I can delete some countries here for better understanding.

- Revision in Python:

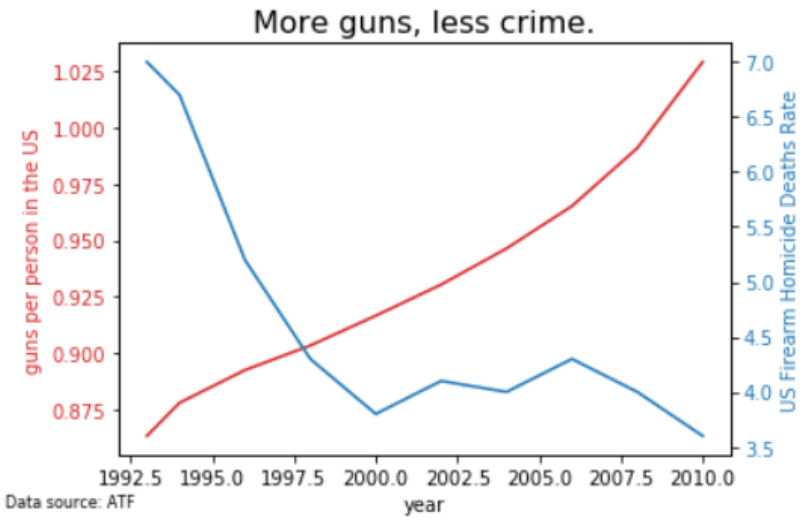
Deletes three overlapping countries.

Finding 3:More guns, less crime.

Original Version:



Deceptive Version:



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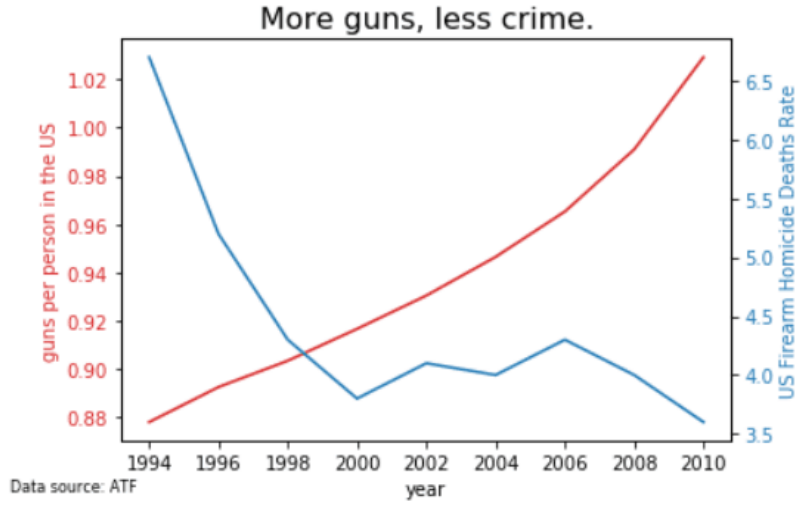
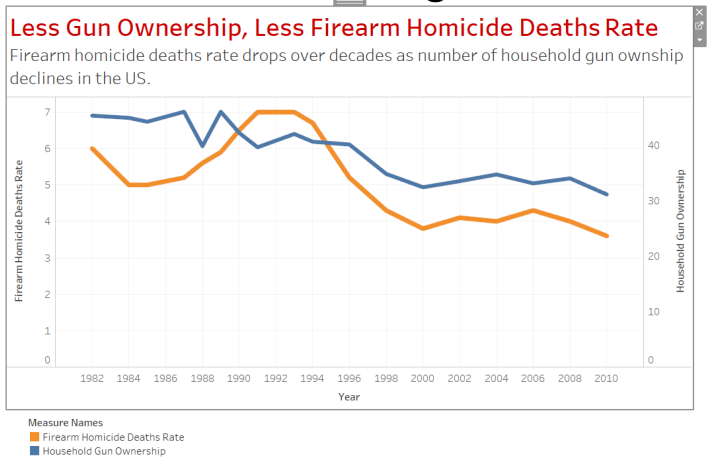


After Re-design:



- Idea:

The original version only points out the firearm homicide deaths rate is declining overtime in the visualization. The author then explained how it's not about "more guns have deterred crimes" by wordings. But actually, it sounds farfetched and difficult to understand from the visualization. So, my idea on this re-design starts from how to logically solve this contradiction. My answer to this is "what if we can prove that there are fewer people owning a gun?". If less gun ownership is true, the declining firearm homicide deaths rate will sounds reasonable for the anti-gun arguments.

But this time, when it comes to deception version, instead of using "fewer people are owning a gun data", I decided to use the increasing number for each person in the US to prove "More guns, less crime".

- Data Source:

2016 Number of deaths by firearm:

https://www.kff.org/other/state-indicator/firearms-death-rate-per-100000/?activeTab=map&currentTimeframe=0&selectedDistributions=firearms-death-rate-per-100000&selectedRows=%7B%22wrapups%22:%7B%22united-states%22:%7B%7D%7D,%22states%22:%7B%22all%22:%7B%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22desc%22%7D

Population data:

http://www.multpl.com/united-states-population/table/

In 2013, there are estimated 357M firearms in the US data:

https://www.washingtonpost.com/news/wonk/wp/2015/10/05/guns-in-the-united-states-one-for-every-man-woman-and-child-and-then-some/?utm_term=.0fd871ea3cb5

New firearm numbers by year:

https://www.atf.gov/file/89561/download

- Data Cleaning:

Manually put those data into a csv file.

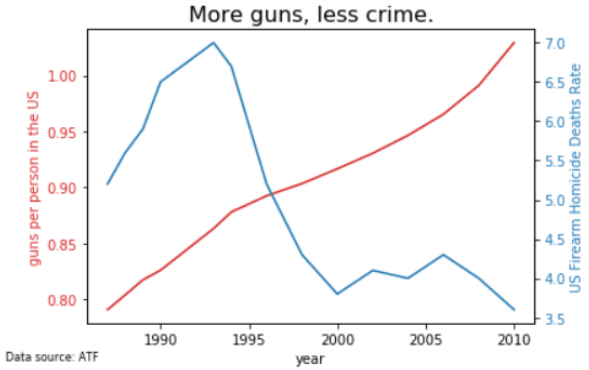
Since we need to know the number for each person owning a gun in the US, we need to divide the total firearm numbers by the population. And for the total firearm numbers, I calculated it in the excel by adding the manufactured guns and imported guns and then subtracting the exported guns.

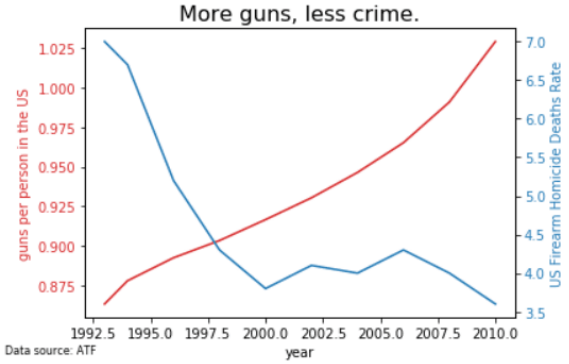
Python:

```
#visualize it with line graph since we want to contrast the difference.
#change the axis color for different y axis for easier understanding.
#add title
plt.title("More guns, less crime.", fontsize=16)

#add data source
plt.annotate('Data source: ATF', (0,0), (-60,-20), fontsize=8,
             xycoords='axes fraction', textcoords='offset points', va='top'
```

I got a graph looks like this at first ↓ ↓ Since data before 1992 seems not persuasive for my point, I decided to delete them:D And then I got my deceptive version as the graph on the right





- Critique of first version:

Overall I think my first version has a strong argument and it is easy to understand. But it is weird that there is float number in years (e.g. 1993.5).

- Revision in Python:

Delete some years to avoid float numbers.