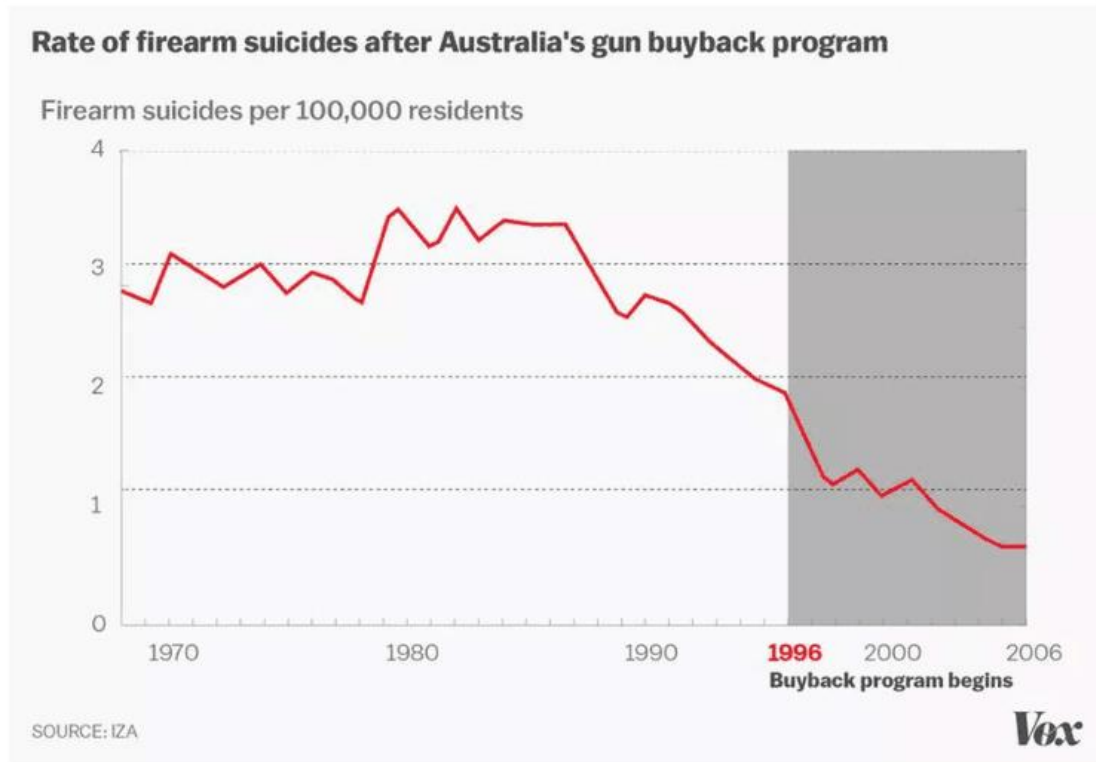


Making-of

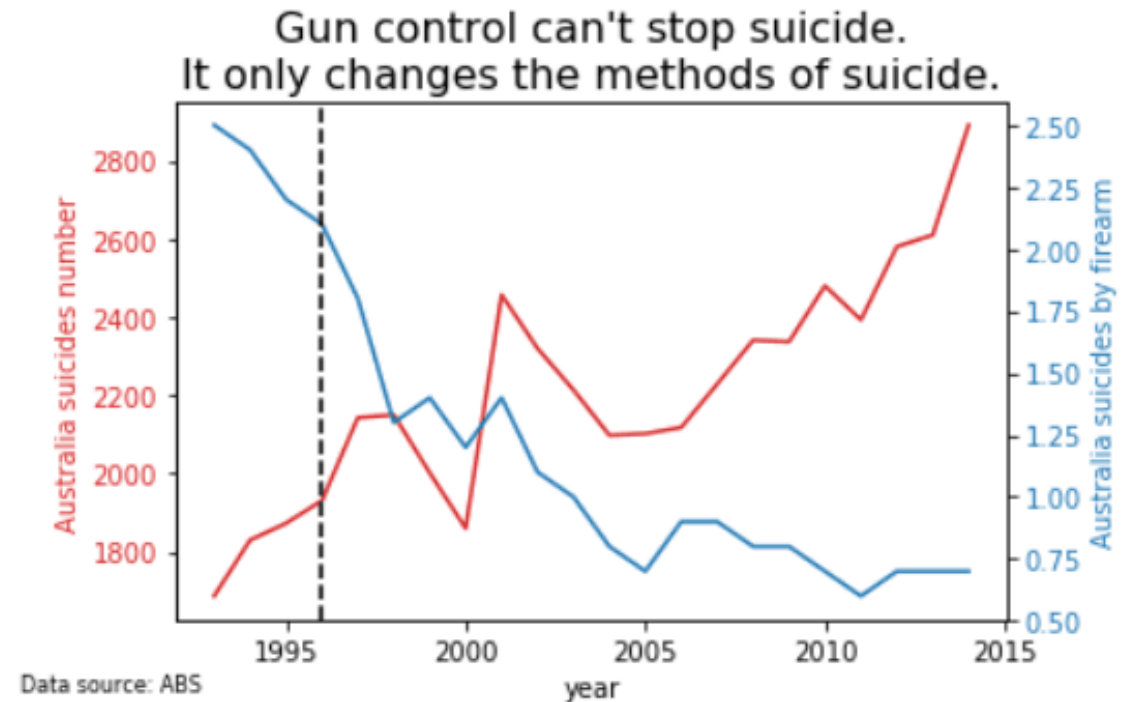
Jun Xing

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

Original Version:



Deceptive 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](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.

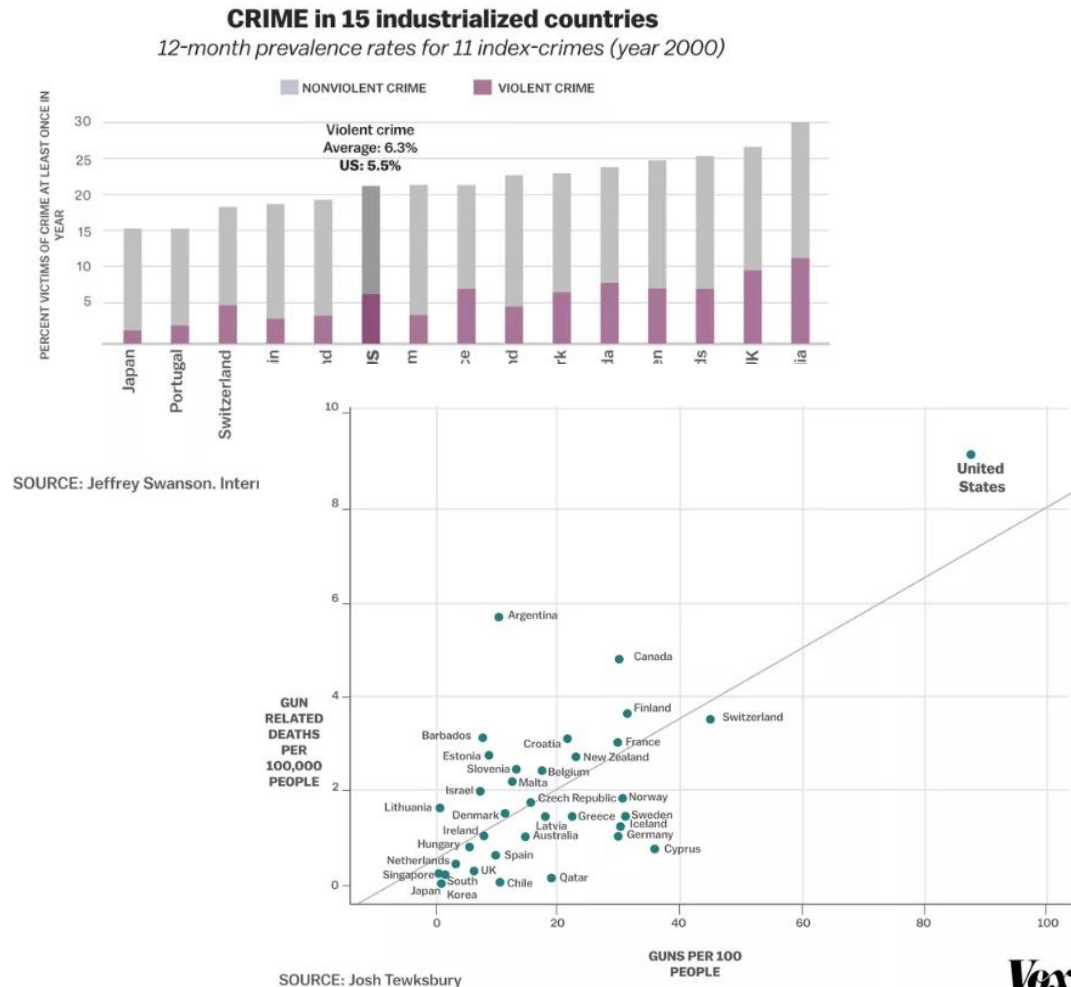
#add title with plt.title() function.

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

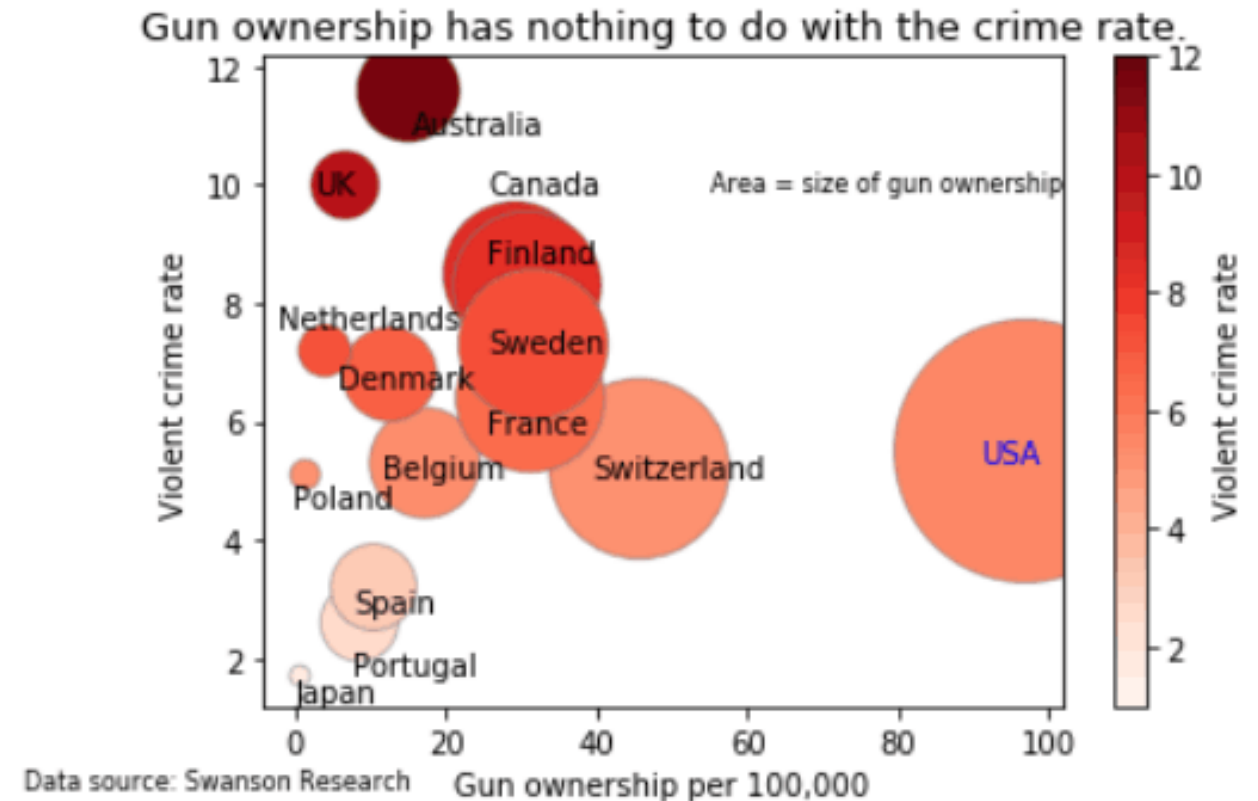
#add data source with plt.annotate() function.

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

Original Version:



Deceptive Version:



- 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:

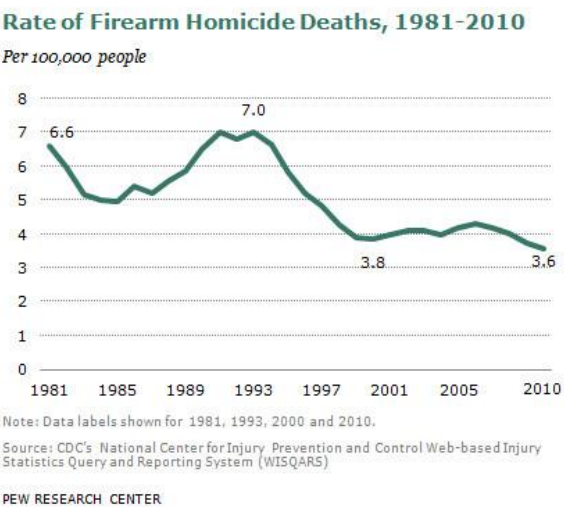
```
plt.colorbar(label='Violent crime rate')
```

```
plt.clim(1, 12)
```

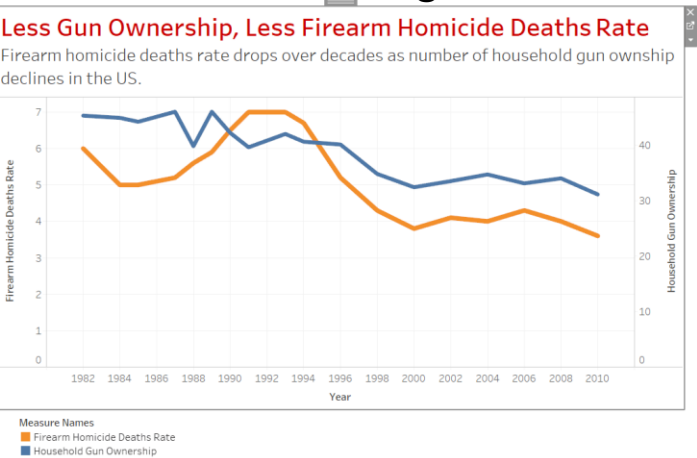
#add labels with plt.annotate() function. Since there are some overlapping on those bubbles, I don't know how to avoid that. So I decided to add label manually.

Finding 3: More guns, less crime.

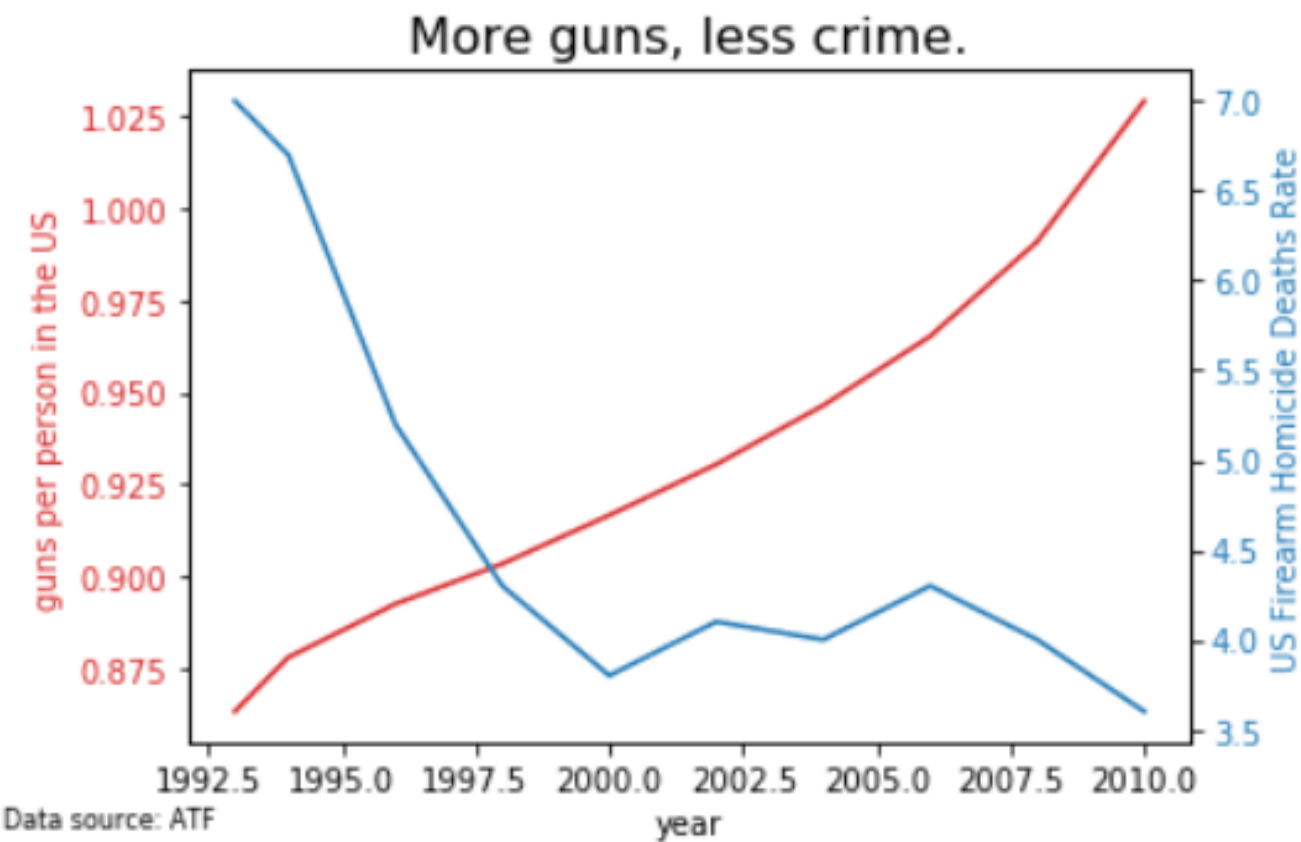
Original Version:



After Re-design:



Deceptive Version:



- 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¤tTimeframe=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.
```

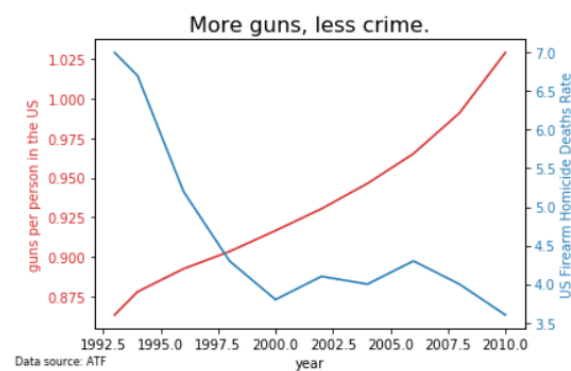
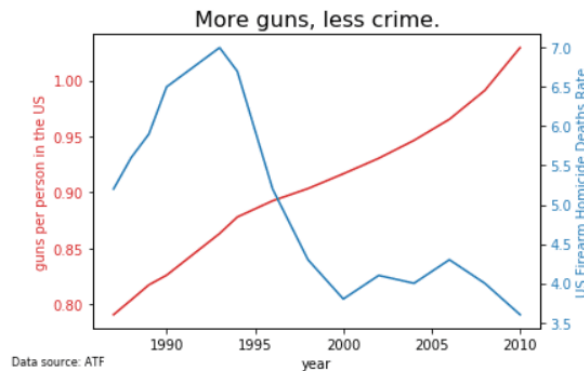
```
#add title
```

```
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



Road map:

For Finding 1:

- Add an arrow to explain the timing for the gun buy back program.
- Mention it clearly that it's the Australia data.

For Finding 2:
Add the average violent crime as a reference in somewhere.

For Finding 3:
Fix the year to integers