ASSIGNMENT 5 (Improved version) - The semantics of presidential language
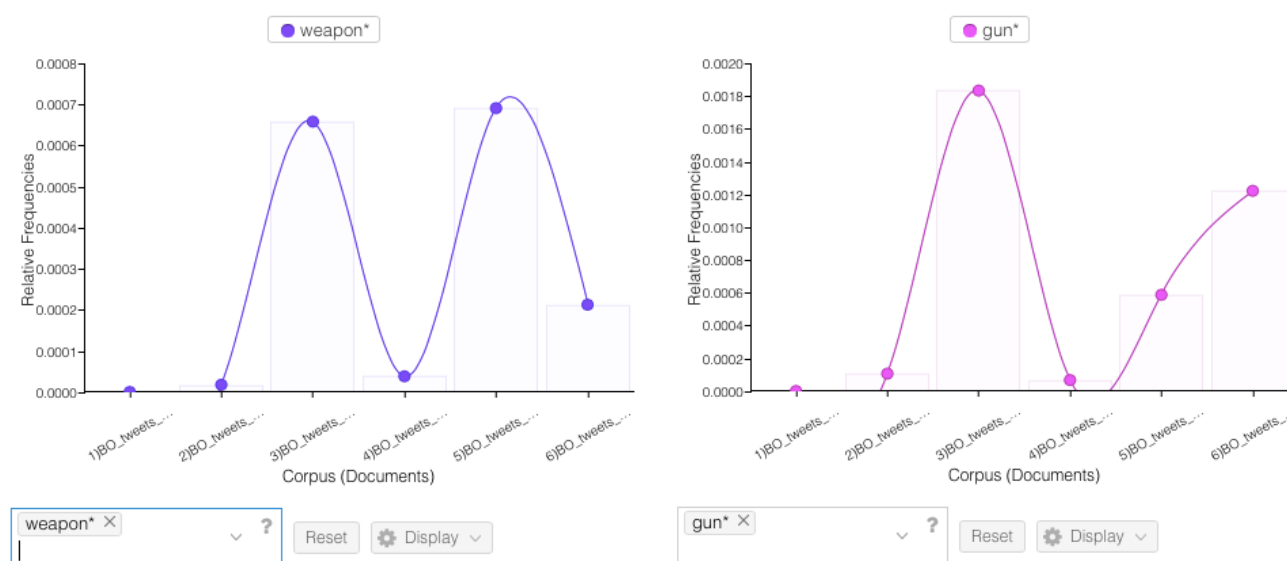
Introduction

I have chosen to focus my analysis using Voyant and the Embedding Projector by Tensor Flow, on a very sensitive topic for the United States, namely, weapons and guns. Indeed, the debate about their use, their effects and possible regulation is very much alive in the country.

I first of all used the available Voyant tools to get an idea of the use of words related to the topic in time or in correlation to which other words, and secondly I used TensorFlow to see if they were actually paired in tweets with the terms with which they are usually paired. [1]

However, it is necessary to mention how the dataset used for the analysis is in certain respects 'flawed'. First of all, the data has not been properly cleaned, in fact, the twitter usernames of both presidents appear, as well as the wording 't.co' (Twitter uses the t.co domain as part of a service aimed at protecting users from malicious activity and intended to provide a valuable tool for its ecosystem of developers, as well as to identify quality-related signals to identify interesting and relevant tweets, as it is explained in https://t.co/). Secondly, it should be mentioned that the collected tweets referring to President Obama cover the time period from 2011 to 2016, all years involving his presidency, whereas the collected tweets of President Trump cover the time period from 2011 to 2019, and thus only the last three years of the corpus relate to his presidency. This difference probably also results in a difference in the tweets posted: it is certainly different to post something as president of the United States and as a businessman recently entering politics. Last fact to mention is that not all years contain the same number of tweets, some corpora are in fact significantly voluminous than others as indicated by the 'document length' section of Voyant (I.e. DT_tweets_2011: 10694 / DT_tweets_2014: 105254).
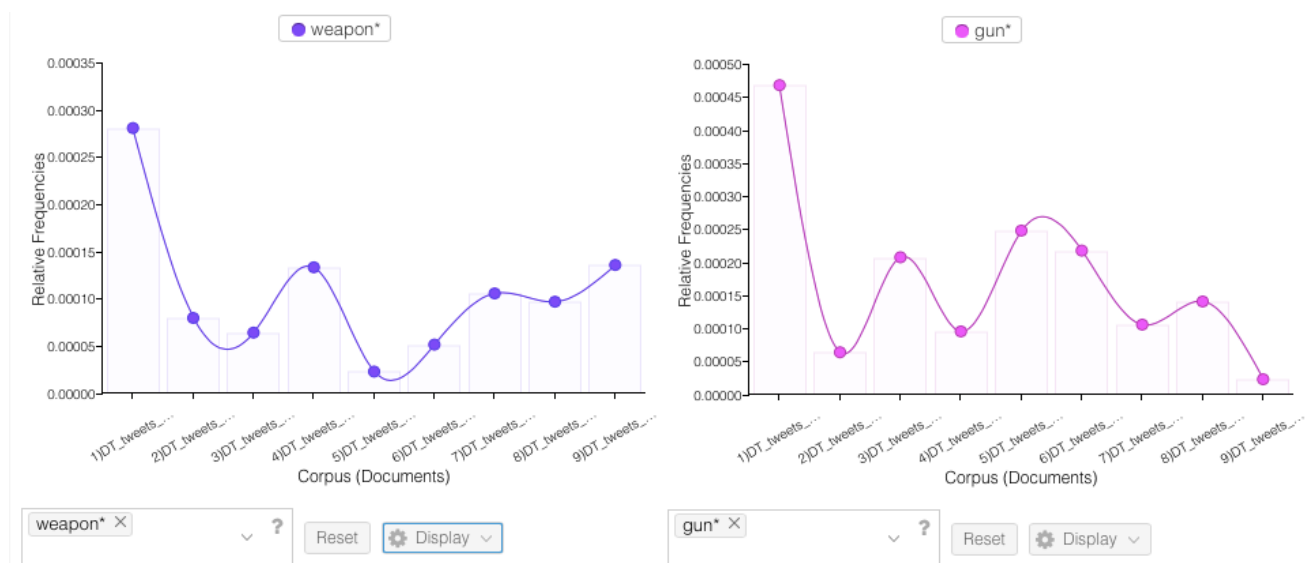
Trends in time

A first aspect that I found interesting to observe, as mentioned in the introduction to this report, is the use of words related to the topic over time and to see whether or not a particular event could influence their frequency in Obama's and Trump's tweets.

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[1] * means including all the variations. I.e. 'Weapon*' is for both 'weapon' and 'weapons', 'Gun*' might include terms like guns', 'gunsinamerica', 'gunman', 'gunviolence', 'gunshow', 'gunned'.

From the two graphs, it can be seen that former US President Barack Obama mentioned terms containing the string 'weapon' the most in the year 2013 and 2015. In January of 2013, one month after the Sandy Hook Elementary School shooting, the Assault Weapons Ban (AWB 2013) bill was introduced in the 113th US Congress as S. 150 by Senator Dianne Feinstein, D-CA. It was then rejected in the Senate on 17 April of the same year by a vote of 40 to 60. In 2015 also, the President came forward with executive action on weapon control. A very similar pattern to that of the word weapon* can also be seen by analysing the presence of the string 'gun'. The frequency of the term in 2016 is probably justified by a speech given by the President on 5 January of that year, 'Remarks by the President on Common-Sense Gun Safety Reform' and the upcoming presidential election campaigns.

The comparison of the strings weapon* and gun* over the years in President Trump's tweets seems to reveal even more how what is talked about in real life is then the subject of published tweets. Before proceeding further, however, it must be mentioned that although it appears that the presence of the weapon* and gun* string of characters is higher in 2011, this is due to the lower number of tweets in that year (I.e. DT_tweets_2011: 10694 / DT_tweets_2014: 105254). Regarding the string 'weapon', it is mainly 2014 and 2019 that reveal interesting information. In June of 2014 Abu Bakr al-Baghdadi declared the establishment of the Caliphate in the conquered territories in Iraq, around the city of Mosul, and in Syria, with the aim of extending his authority over all lands inhabited by Muslims. Trump's number of tweets that year containing the string Weapon* are in fact aimed at President Obama and the fact that US weapons were in use and in possession of Isis. In 2019 instead, although the graph is slightly misleading due to the low number of tweets that year, the high frequency of the word's presence is due to the 2019 North Korea-United States Hanoi Summit on North Korea's use of nuclear weapons.

For the string 'gun' we see a frequency of the string in the year 2013, presumably in response to the bill promoted by president Obama. The same applies to the year 2015.

"I have a very strict gun control policy: if there's a gun around I want to be in control of it." - Clint Eastwood

Obama's own gun study proves gun control is ineffective http://t.co/7gwqgsnTOi @BIZPACReview

US?All good folks that have a gun should control it!

Get rid of gun free zones. The four great marines who were just shot never had a chance.
They were highly trained but helpless without guns.

MILITARY LIVES MATTER! END GUN FREE ZONES! OUR SOLDIERS MUST BE ABLE TO PROTECT THEMSELVES!
THIS HAS TO STOP!

â€œBut if someone has a gun and is trying to kill you... it would be reasonable to
shoot back with your own gun.â€� - @DalaiLama

2015, however, is also the year of the 'November 2015 Paris attacks'. Indeed, we find numerous tweets from former President Trump mentioning this event in correlation with his displeasure with gun regulation and his thoughts on immigration and terrorism. What Trump is doing in this case is instrumentalising a tragic event such as a terrorist attack, in order to to feather his own nest.

gun control countries in the world?
If the people so violently shot down in Paris had guns at least they would have had
a fighting chance.

@japple8686: @My3Alexandra @realDonaldTrump cop was unarmed watch the news
@VinDaniels: @GlennNights @realDonaldTrump He is correct. France has harsh gun laws.
Terrorists were carrying AK47.

@mholsbunes: Donald Trump says tough gun control laws in Paris contributed to tragedy:
https://t.co/ifVJmLw2Sx Presidential candidate??
@thewatcher23579: One of Paris terrorist came as Syrian refugee. Donald Trump is right

In 2016, the frequency of the term is probably due to another reason. In fact, 2016 is the campaign year for both Hillary Clinton and Donald Trump, while the former supports gun regulation reforms, the latter instead expresses his opposition in tweets.

Crooked Hillary Clinton wants to essentially abolish the 2nd Amendment. No gun owner
can ever vote for Clinton!

Hillary said that guns don't keep you safe. If she really believes that she should
demand that her heavily armed bodyguards quickly disarm!

@RBacliff: Hillary wants to rip the guns out of America's hands. No guns = no protection.
Get on #TrumpTrain & join @NRA to stop her.
Crooked Hillary wants to get rid of all guns and yet she is surrounded by

.@HillaryClinton lists litany of ways she plans to restrict gun rights. 2A will not survive a Hillary presidency. #Debate #BigLeagueTruth
.@realDonaldTrump will PROTECT and DEFEND the Constitution #Debate

Collocation in context
This Voyant tool shows the number of times a word has been directly associated to a given word of reference. However, the result is somewhat flawed by the incomplete cleanliness of the material.

Obama - Gun*
From this visualisation it is interesting to see that the word with which Obama most often associates the word 'gun' is the word 'violence'. After that (ignoring dataset impurities) we find the words 'common', 'steps', 'sense' coming from similar tweets: 'common sense steps to reduce gun violence', 'common sense steps that will save lives'...

Parola	Collocazione	Conteggio (contesto)
gun*	violence	182
gun*	t.co	103
gun*	https	64
gun*	nowisthetime	61
gun*	http	61
gun*	potus	52
gun*	common	52
gun*	steps	50
gun*	sense	48
gun*	rt	43
gun*	act	38
gun*	add	36
gun*	obama	30

gun* ✕   598 contesto   Riduci

Trump - Gun*

Trump, on the other hand, surprisingly mainly associates the word 'gun' with the word 'control', perhaps indicating his particularly polemical streak. In fact, that word is also often found associated with the word 'Hillary', his opponent in the elections, or with the word 'laws' probably in reference to gun regulations.

	Parola	Collocazione	Conteggio (contesto)
☐	gun*	control	18
☐	gun*	t.co	11
☐	gun*	free	11
☐	gun*	http	10
☐	gun*	amp	9
☐	gun*	zones	8
☐	gun*	trump	8
☐	gun*	realdonaldtrump	6
☐	gun*	laws	6
☐	gun*	hillary	6
☐	gun*	gun	6
☐	gun*	vote	5
☐	gun*	military	5

gun* ✕ ⌄ ? 416 contesto ◉━━ Riduci ⌄

Obama - Weapon*

The word weapon seems to be used less in connection with raising people's awareness of its potential misuse, and instead seems to be more related to the military sphere. In fact, we see it associated with words such as: 'iran', 'irandeal', 'syria', 'war'.

	Parola	Collocazione	Conteggio (contesto)
☐	weapon*	t.co	57
☐	weapon*	http	54
☐	weapon*	iran	37
☐	weapon*	potus	34
☐	weapon*	use	23
☐	weapon*	obama	23
☐	weapon*	irandeal	23
☐	weapon*	syria	22
☐	weapon*	obtaining	22
☐	weapon*	https	22
☐	weapon*	rt	11
☐	weapon*	war	10
☐	weapon*	president	10

weapon* ✕ ⌄ ? 320 contesto ◉━━ Riduci ⌄

Trump - Weapon*

The same applies to President Trump. The word is found associated with words such as: 'mass', 'destruction', 'iraq', 'iran'.

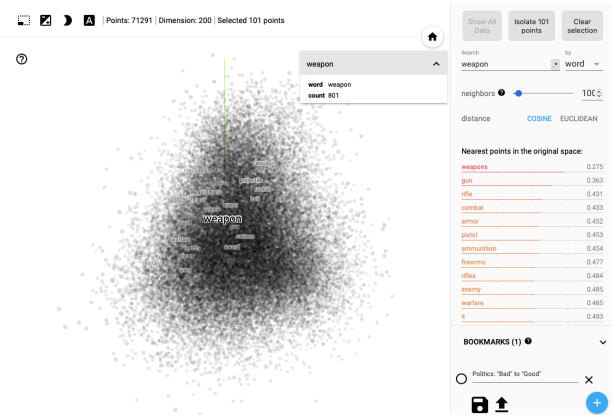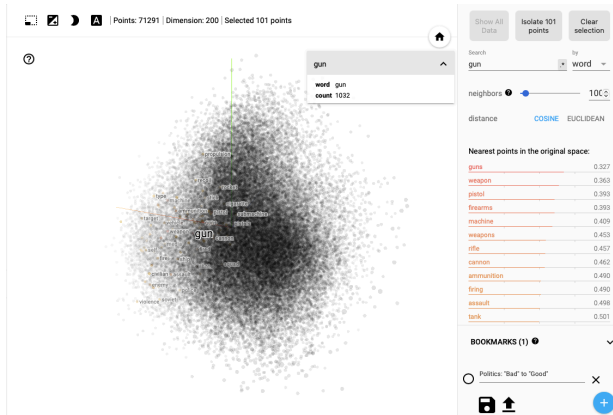|	Parola	Collocazione	Conteggio (contesto)
☐	weapon*	t.co	6
☐	weapon*	mass	6
☐	weapon*	https	5
☐	weapon*	destruction	5
☐	weapon*	obama	4
☐	weapon*	iraq	4
☐	weapon*	iran	4
☐	weapon*	amp	4
☐	weapon*	trump	3
☐	weapon*	large	3
☐	weapon*	china	3
☐	weapon*	caused	3
☐	weapon*	whitehouse	2

weapon* ✕ ⌄ ? 239 contesto ◉━━ Riduci ⌄

What actually results is not much different from the general idea one has of the the two presidents, at least as far as the word gun is concerned: Obama, consistent with its political ideology, uses this term to talk about common sense and likewise Trump uses it with a polemical verve. The use of the word weapon in association with words referring to the military context, is similar in both presidents' tweets.

Embedding Project - Tensor Flow

While the context of the word 'gun' in the tweets is very specific to the situation in the United States and the great debate taking place there, and therefore it was to be expected that the result produced by the Embedding Project would not match, the word 'weapon' is used in a contest (the military), which it is normally associated with, as TensorFlow shows.

Conclusions

It was extremely intriguing to have the opportunity to conduct this analysis, which allowed to draw some interesting conclusions.

From the analysis of the word over time, as anticipated, we can deduce that the tweets seem to reflect what actually happens in everyday life. That is to say, if guns/weapons are mentioned at Capitol Hill for a bill, for a speech, for a summit, or for the election campaign, words related to this topic are more frequently found in the tweets.

From the word collocation analysis we can see that former president Obama speaks of 'gun' in a context in which this word is associated with violence and thus have a negative connotation, and in tweets that are a call for common sense on the part of citizens. Trump, on the other hand, mentions this word with a polemical verve, as we find it associated with the words 'control' and 'laws' of which he has repeatedly spoken out against, and with the word 'Hillary' his election opponent and in favour of regulations on the use of guns. The tweets context of this words reflects both Obama's and Trump's political ideologies. The word 'weapon' on the other hand is used by both presidents in a warfare context, and this also seems to be the normal context of the word as denoted in TensorFlow.