

Analysis of New York Times articles covering Democrat versus Republican issues and topics to understand sentiment analysis

I have chosen six NYT articles. Three of which are Democrat focused and 3 of which are republican focused. I have combined the Democrat and republican articles into two text files labelled "democratic.txt" and "republican.txt."

After uploading each text file and creating a dataset, I did a line-for-line sentiment analysis to decipher if the democratic dataset fell under positive, negative or neutral. Then I duplicated this process for the republican.txt file.

The following code may not be the most efficient, but it gets the job done!

For the first half of the study I am using textblob which uses NLP

In [239...]

```
#imports
import pandas as pd
import matplotlib as matlib
!pip install textblob
import textblob
from textblob import TextBlob
!pip install vaderSentiment
```

```
Requirement already satisfied: textblob in c:\users\julia\miniconda3\lib\site-packages (0.17.1)
Requirement already satisfied: nltk>=3.1 in c:\users\julia\miniconda3\lib\site-packages (from textblob) (3.8.1)
Requirement already satisfied: regex>=2021.8.3 in c:\users\julia\miniconda3\lib\site-packages (from nltk>=3.1->textblob) (2022.8.17)
Requirement already satisfied: joblib in c:\users\julia\miniconda3\lib\site-packages (from nltk>=3.1->textblob) (1.2.0)
Requirement already satisfied: tqdm in c:\users\julia\miniconda3\lib\site-packages (from nltk>=3.1->textblob) (4.63.0)
Requirement already satisfied: click in c:\users\julia\miniconda3\lib\site-packages (from nltk>=3.1->textblob) (8.1.3)
Requirement already satisfied: colorama in c:\users\julia\miniconda3\lib\site-packages (from click->nltk>=3.1->textblob) (0.4.4)
Requirement already satisfied: vaderSentiment in c:\users\julia\miniconda3\lib\site-packages (3.3.2)
Requirement already satisfied: requests in c:\users\julia\miniconda3\lib\site-packages (from vaderSentiment) (2.27.1)
Requirement already satisfied: charset-normalizer~=2.0.0 in c:\users\julia\miniconda3\lib\site-packages (from requests->vaderSentiment) (2.0.4)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\julia\miniconda3\lib\site-packages (from requests->vaderSentiment) (2022.6.15.1)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\julia\miniconda3\lib\site-packages (from requests->vaderSentiment) (1.26.8)
Requirement already satisfied: idna<4,>=2.5 in c:\users\julia\miniconda3\lib\site-packages (from requests->vaderSentiment) (3.3)
```

Uploading my Democrat dataset:

NB: this dataset has 87 rows, which will be important later

In [165...]

```
#dataset on democratic news
df = pd.read_table("C:\\\\Users\\\\julia\\\\Desktop\\\\democratic.txt")
df
```

Out[165]:

Democrats1	
0	Democrats, Seeing a Weaker Trump, Are Falling ...
1	Concerns about the president's age are being o...
2	PHILADELPHIA — Nine months ago, amid sky-high ...
3	But now, as Democratic National Committee memb...
4	After Democrats far exceeded their own expecta...
...	...
82	Judge Griesbach also questioned whether an inj...
83	"A future administration may not be bound" by ...
84	A three-judge panel of the U.S. Court of Appea...
85	In its application, the association argued tha...
86	They added: "The argument that a president may...

87 rows × 1 columns

My initial thought was to do the text in full to determine if the sentiment analysis based on polarity scores (available below) was either positive or negative.

In [238...]

```
text = df.to_string()

def get_sentiment(text):
    blob = TextBlob(text)
    sentiment = blob.sentiment.polarity
    if sentiment > 0:
        return 'Positive'
    else:
        return 'Negative'

sentiment = get_sentiment(text)

print(sentiment)
```

Positive

After receiving the positive as shown above, I wanted more information; I was not ready to blindly trust the positive conclusion. So I converted my dataset to a string, allowing me to go through the text file line by line instead of analyzing it as a whole.

```
In [237]: # Convert the DataFrame to a text string
text = df.to_string()

# Define a function to perform sentiment analysis on each line
def get_sentiment(text):
    blob = TextBlob(text)
    sentiment = blob.sentiment.polarity
    if sentiment > 0:
        return 'Positive'
    else:
        return 'Negative'

# Apply the get_sentiment function to each line
sentiment = df.apply(lambda x: get_sentiment(x['Democrats1']), axis=1)

# Print the sentiment analysis for each line
sentiment
```

```
Out[237]: 0      Negative
1      Positive
2      Negative
3      Positive
4      Positive
       ...
82     Negative
83     Negative
84     Positive
85     Positive
86     Negative
Length: 87, dtype: object
```

After combing through the text line for line, I felt more confident in the Positive democratic conclusion. All 87 lines of the dataset are accounted for in this configuration.

Uploading my Republican dataset:

NB: this dataset has 46 rows, which will be important later to make sure the analysis is done correctly

```
In [236]: #dataset on republican news
df2 = pd.read_table("C:\\\\Users\\\\julia\\\\Desktop\\\\republican.txt")
df2
```

Out[236]:

Republican1

- 0** Trump Is Sued in Death of Capitol Police Offic...
- 1** The suit in the death of Brian D. Sicknick see...
- 2** Jan. 6: This article was updated with a respon...
- 3** WASHINGTON — The longtime partner of a Capitol...
- 4** The suit, filed in Federal District Court for ...
- 5** "The horrific events of Jan. 6, 2021, includin...
- 6** Officer Sicknick died the day after the attack...
- 7** In her suit, Sandra Garza, who as Officer Sick...
- 8** In a statement early Friday, a spokesperson fo...
- 9** The former president is facing an array of civ...
- 10** Officer Sicknick is one of five police officer...
- 11** Wisconsin Voters Re-elect Johnson, an Election...
- 12** Senator Ron Johnson, a Republican and one of t...
- 13** Senator Ron Johnson, a Wisconsin Republican an...
- 14** Mr. Johnson's victory, in what became one of t...
- 15** Like his victories in 2010 and 2016 over Russ ...
- 16** Senator Ron Johnson, a Wisconsin Republican an...
- 17** Mr. Johnson's victory, in what became one of t...
- 18** Like his victories in 2010 and 2016 over Russ ...
- 19** Democrats had criticized Mr. Johnson as a self...
- 20** Now Mr. Johnson, 67, will return to Washington...
- 21** Mr. Barnes, 35, had cast himself as the voice ...
- 22** But Mr. Barnes struggled to win over the middl...
- 23** Mr. Johnson, a former plastics manufacturing e...
- 24** Trump, Reacting to Pending Jan. 6 Subpoena, Re...
- 25** In a rambling, 14-page restatement of false cl...
- 26** WASHINGTON — Former President Donald J. Trump ...
- 27** In a 14-page missive that did not address whet...
- 28** The former president has indicated privately t...
- 29** "The presidential election of 2020 was rigged ...
- 30** Mr. Trump dedicated page after page to repeati...
- 31** "You have not gone after the people that creat...
- 32** Instead of providing what he claimed was evide...

Republican1

- 33** "A large percentage of American citizens, incl...
- 34** He included aerial photographs purporting to s...
- 35** The letter emerged as the House committee, whi...
- 36** While Mr. Trump was unlikely to comply with th...
- 37** Should Mr. Trump decline to appear, it could l...
- 38** Committee members said they believed Mr. Trump...
- 39** "I want to believe again that every American c...
- 40** Representative Bennie Thompson, Democrat of Mi...
- 41** "If we get his attention, fine," Mr. Thompson ...
- 42** Mr. Trump's explosive reaction came the day af...
- 43** In another portion of the video released on Fr...
- 44** Mr. Trump never attempted to check on Mr. Penc...
- 45** During the call, Mr. Short said that they beli...

In [234...]

```
text2 = df2.to_string()

def get_sentiment(text2):
    blob2 = TextBlob(text2)
    sentiment2 = blob2.sentiment.polarity
    if sentiment2 > 0:
        return 'Positive'
    else:
        return 'Negative'

sentiment2 = get_sentiment(text2)

print(sentiment2)
```

Positive

As found before, the overall consensus is that the text is positive, which makes sense since it is an article meant for public entertainment, meaning it would make sense for the wording to be under a positive connotation. Still, I wanted to see a line-by-line analysis which is available below:

In [235...]

```
# Convert the DataFrame to a text string
text2 = df2.to_string()

# Define a function to perform sentiment analysis on each line
def get_sentiment(text2):
    blob2 = TextBlob(text2)
    sentiment2 = blob2.sentiment.polarity
    if sentiment2 > 0:
        return 'Positive'
    else:
        return 'Negative'

# Apply the get_sentiment function to each line
```

```
sentiment2 = df2.apply(lambda x: get_sentiment(x['Republican1']), axis=1)

# Print the sentiment analysis for each line
sentiment2
```

```
Out[235]: 0      Negative
1      Positive
2      Negative
3      Positive
4      Negative
5      Negative
6      Positive
7      Positive
8      Positive
9      Negative
10     Negative
11     Negative
12     Negative
13     Negative
14     Positive
15     Positive
16     Negative
17     Positive
18     Positive
19     Positive
20     Positive
21     Positive
22     Positive
23     Positive
24     Negative
25     Negative
26     Negative
27     Negative
28     Positive
29     Negative
30     Negative
31     Positive
32     Positive
33     Negative
34     Negative
35     Negative
36     Positive
37     Negative
38     Negative
39     Positive
40     Negative
41     Positive
42     Positive
43     Negative
44     Positive
45     Negative
dtype: object
```

From the break down above, we can see the rating of all 46 lines. At this point in the study, I was feeling stuck. My hypothesis was wrong, and the sentiment analysis disproves mass public opinion (and my opinion). I decided to relook at my datasets

Turning point:

The above analysis doesn't portray very much information besides the apparent fact that the text is written for the public eye, and that makes sense for there to be an overall positive tone to the text.

However, from here, I realized a mistake in my initial work. I tried to keep the original text format when uploading the text to Notepad to create the plain text document for analysis. Meaning that each paragraph is together, the same as it was when printed on NYTs'. However, I wanted to analyze each sentence, not each paragraph. The work above is not doing as deep of an analysis as I had initially intended. I have decided to return to my original text files and allow each sentence to have its own line. Hopefully, this will provide a deeper understanding of the text.

Here is the newly formatted democratic text file

NB: The new version now has 141 rows instead of the 87 from before

```
In [232...]: #dataset on republican news REFORMATTED VERSION
df4 = pd.read_table("C:\\\\Users\\\\julia\\\\Desktop\\\\democrats2.txt")
df4
```

	Democrats2
0	Democrats, Seeing a Weaker Trump, Are Falling ...
1	Concerns about the president's age are being o...
2	PHILADELPHIA — Nine months ago, amid sky-high ...
3	But now, as Democratic National Committee memb...
4	After Democrats far exceeded their own expecta...
...	...
136	A three-judge panel of the U.S. Court of Appeal...
137	Justice Barrett oversees that circuit, and eme...
138	In its application, the association argued tha...
139	"We are witnessing a gargantuan increase in th...
140	They added: "The argument that a president may...

141 rows × 1 columns

```
In [231...]: text4 = df4.to_string()

def get_sentiment(text4):
    blob4 = TextBlob(text4)
    sentiment4 = blob4.sentiment.polarity
    if sentiment4 > 0:
```

```

        return 'Positive'
    elif sentiment4 < 0:
        return 'Negative'

sentiment4 = get_sentiment(text4)

print(sentiment4)

```

Positive

despite the reformatting, the output on the initial overall sentiment is the same as before.

In [206...]

```

# Convert the DataFrame to a text string
text4 = df4.to_string()

# create a function to perform sentiment analysis on each line (sentence) in the dataset
def get_sentiment(text4):
    blob4 = TextBlob(text4)
    sentiment4 = blob4.sentiment.polarity
    if sentiment4 > 0:
        return 'Positive'
    elif sentiment4 == 0:
        return 'Neutral'
    elif sentiment4 < 0:
        return 'Negative'

# Apply the get_sentiment function to each line
sentiment4 = df4.apply(lambda x: get_sentiment(x['Democrats2']), axis=1)

# Print the sentiment analysis for each line
sentiment4

```

Out[206]:

```

0      Negative
1      Positive
2      Negative
3      Positive
4      Positive
       ...
136     Neutral
137     Positive
138     Neutral
139     Positive
140     Negative
Length: 141, dtype: object

```

Still, looking at the text line by line to ensure I can trust the tool is good practice. Next, I created a visual to better understand what all 141 lines looked like.

In [203...]

```

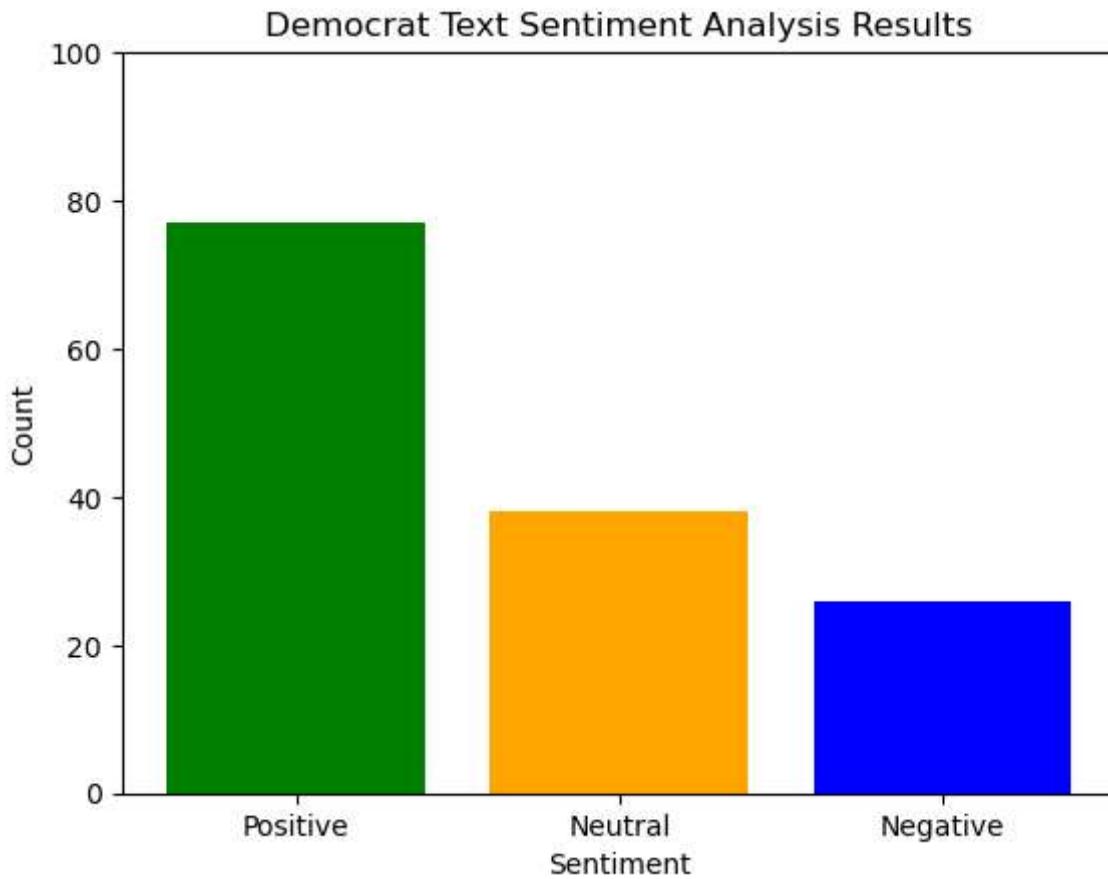
# Count the number of each sentiment label
counts = sentiment4.value_counts()

# Define a list of colors for the bar plot
colors = ['green', 'orange', 'blue']

# Create a bar plot of the sentiment analysis results
plt.bar(counts.index, counts.values, color=colors)
plt.title('Democrat Text Sentiment Analysis Results')

```

```
plt.xlabel('Sentiment')  
  
plt.ylabel('Count')  
  
# Set the y-axis limit to 100  
plt.ylim(top=100)  
  
plt.show()
```



Initial thoughts on this visual:

I'm happy with the outcome that matches my hypothesis; however, I know this is only the Democrat version, so this output is expected.

Here I will upload a newly formatted republican text file

NB: The new version now has 62 rows instead of the 46 from before

In [175...]

```
#dataset on republican news REFORMATTED VERSION  
df3 = pd.read_table("C:\\\\Users\\\\julia\\\\Desktop\\\\republican2.txt")  
df3
```

Out[175]:

Republican2

- 0** Trump Is Sued in Death of Capitol Police Offic...
- 1** The suit in the death of Brian D. Sicknick see...
- 2** Jan. 6: This article was updated with a respon...
- 3** WASHINGTON — The longtime partner of a Capitol...
- 4** The suit, filed in Federal District Court for ...
- ...** ...
- 57** Mr. Trump's explosive reaction came the day af...
- 58** In another portion of the video released on Fr...
- 59** Mr. Trump never attempted to check on Mr. Penc...
- 60** During the call, Mr. Short said that they beli...
- 61** But when Mr. Meadows asked where the vice pres...

62 rows × 1 columns

In [230...]

```
text3 = df3.to_string()

def get_sentiment(text3):
    blob3 = TextBlob(text3)
    sentiment3 = blob3.sentiment.polarity
    if sentiment3 > 0:
        return 'Positive'
    elif sentiment3 == 0:
        return 'Neutral'
    elif sentiment3 < 0:
        return 'Negative'

sentiment3 = get_sentiment(text3)

print(sentiment3)
```

Positive

Overall rating is still positive, I was hoping the new format would waiver this result slightly, but a deeper line analysis will tell:

In [228...]

```
# Convert the DataFrame to a text string
text3 = df3.to_string()

# Define a function to perform sentiment analysis on a single text entry
def get_sentiment(text3):
    blob3 = TextBlob(text3)
    sentiment3 = blob3.sentiment.polarity
    if sentiment3 > 0:
        return 'Positive'
    elif sentiment3 == 0:
        return 'Neutral'
    else:
        return 'Negative'
```

```
# Apply the get_sentiment function to each line of the DataFrame
sentiment3 = df3.apply(lambda x: get_sentiment(x['Republican2']), axis=1)

# Print the sentiment analysis for each line
sentiment3
```

```
Out[228]: 0    Neutral
           1    Positive
           2    Neutral
           3    Positive
           4    Negative
           ...
          57   Positive
          58   Neutral
          59   Positive
          60   Neutral
          61   Neutral
Length: 62, dtype: object
```

Let's visualize this!

```
In [227... # Count the number of each sentiment Label
counts3 = sentiment3.value_counts()

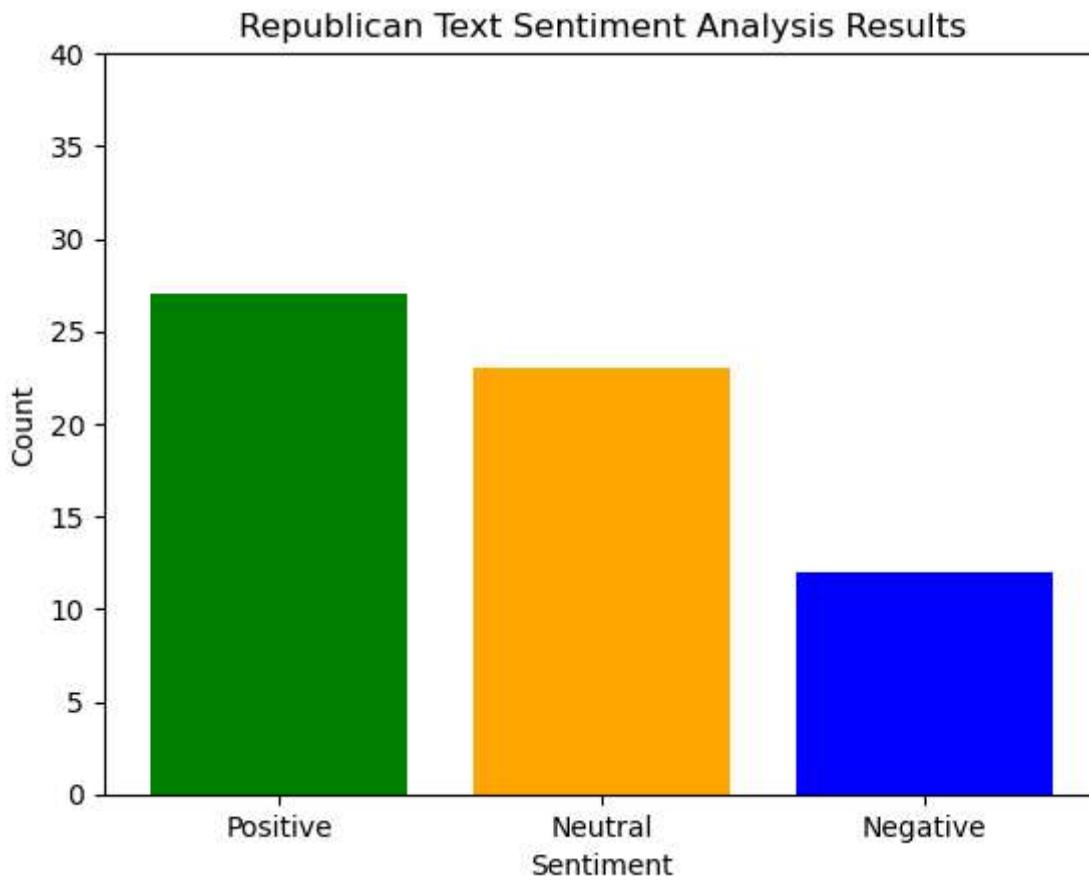
# colors
colors = ['green', 'orange', 'blue']

# Create a bar plot of results
plt.bar(counts3.index, counts3.values, color=colors)

plt.title('Republican Text Sentiment Analysis Results')
plt.xlabel('Sentiment')
plt.ylabel('Count')

# Set the y-axis limit to 40
plt.ylim(top=40)

plt.show()
```



From this visualization, we can see that the textblob analysis does not align with public opinion on the text. While it is interesting to see this visual, it was not what I hoped for.

When looking at the information in my first analysis, the word neutral provides very little helpful information. I am not looking at the dataset in search of neutral; I am trying to understand positive vs negative. Despite the neutral issue, I was also unsure of textblobs analysis (considering it is NLP and not NLTK). I decided to do another analysis with Vader since it uses NLTK. If we are going to say that sentiment analysis is a reliable tool, both of textblob and Vader should output similar results as we don't know what database tools like Voyant pull from to output their sentiment analysis. If they're all very different, it shows that baked-in bias is very real.

Now to try again with Vader sentiment analysis tool

This analysis will be a lot faster than the original. I know what I'm looking for. First, let's import NLTK and start using Vader.

```
In [226]: # importing some tools
import nltk
nltk.download('vader_lexicon')
from nltk.sentiment.vader import SentimentIntensityAnalyzer

sid = SentimentIntensityAnalyzer()
```

```
[nltk_data] Downloading package vader_lexicon to
[nltk_data]     C:\Users\julia\AppData\Roaming\nltk_data...
[nltk_data] Package vader_lexicon is already up-to-date!
```

As before let's start with democrats.

This is the Vader sentiment analysis on democrat articles

```
In [209]: df8 = pd.read_table("C:\\\\Users\\\\julia\\\\Desktop\\\\democrats2.txt", sep='\\t')
```

Out[209]:

Democrats2

0	Democrats, Seeing a Weaker Trump, Are Falling ...
1	Concerns about the president's age are being o...
2	PHILADELPHIA — Nine months ago, amid sky-high ...
3	But now, as Democratic National Committee memb...
4	After Democrats far exceeded their own expecta...
...	...
136	A three-judge panel of the U.S. Court ofAppea...
137	Justice Barrett oversees that circuit, and eme...
138	In its application, the association argued tha...
139	"We are witnessing a gargantuan increase in th...
140	They added: "The argument that a president may...

141 rows × 1 columns

This version outputs the sentences slightly different; view the 1's under each line of text

```
In [210]: df8['Democrats2'].value_counts()
```

Out[210]:

Democrats, Seeing a Weaker Trump, Are Falling in Line Behind Biden

1

He has appointed scores of L.G.B.T.Q. officials to posts in his administration, including Pete Buttigieg as transportation secretary.

1

The push for passage of the law was driven in part by the Supreme Court opinion overturning abortion rights, in which Justice Clarence Thomas raised the possibility of using the same logic to reconsider decisions protecting marriage equality and contraception rights.

1

Opponents of the legislation argued that it would undermine family values in the United States and restrict the religious freedoms of people who do not believe that same-sex marriage is moral.

1

Proponents of the new law insisted that Congress needed to be proactive in ensuring that a future Supreme Court ruling would not invalidate same-sex marriages around the country. In 2015, the court ruled in Obergefell v. Hodges that all states must recognize the marriages of same-sex couples just as they would marriages between a man and a woman.

1

..

“The question I ask myself is not ‘What is my path to victory?’” she said. “My question is ‘What is my path to radical truth-telling?’

1

In an interview, Ms. Williamson said she would not run “simply to make a point” but to give Americans options.

1

Only Marianne Williamson, the self-help author who ran a quixotic presidential campaign in 2020, has acknowledged mulling a primary challenge, citing concerns over a Democratic Party that she said had “swerved from its unequivocal and unabashed advocacy for the working people.”

1

Other big names, including Gov. Gavin Newsom of California and Gov. Gretchen Whitmer of Michigan, have followed suit.

1

They added: “The argument that a president may unilaterally forgive debt owed to the U.S. Treasury through executive fiat, and that no one has standing to challenge him, threatens the very foundations of a constitutional republic.”

1

Name: Democrats2, Length: 141, dtype: int64

Now, let's see the actual scores. Vader is calculating the occurrence of negative, neutral and positive in each sentence, unlike textblob that was outputting a general ruling for a sentence as a whole.

In [211...]

```
df8['scores'] = df8['Democrats2'].apply(lambda review: sid.polarity_scores(review))

df8
```

Out[211]:

		Democrats2	scores
0	Democrats, Seeing a Weaker Trump, Are Falling ...	{'neg': 0.36, 'neu': 0.64, 'pos': 0.0, 'compound': -0.1}	
1	Concerns about the president's age are being o...	{'neg': 0.0, 'neu': 0.706, 'pos': 0.294, 'compound': 0.15}	
2	PHILADELPHIA — Nine months ago, amid sky-high ...	{'neg': 0.133, 'neu': 0.867, 'pos': 0.0, 'compound': 0.05}	
3	But now, as Democratic National Committee memb...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound': 1.0}	
4	After Democrats far exceeded their own expecta...	{'neg': 0.064, 'neu': 0.936, 'pos': 0.0, 'compound': 0.05}	
...
136	A three-judge panel of the U.S. Court of Appeal...	{'neg': 0.161, 'neu': 0.839, 'pos': 0.0, 'compound': 0.05}	
137	Justice Barrett oversees that circuit, and eme...	{'neg': 0.113, 'neu': 0.739, 'pos': 0.148, 'compound': 0.05}	
138	In its application, the association argued tha...	{'neg': 0.152, 'neu': 0.848, 'pos': 0.0, 'compound': 0.05}	
139	"We are witnessing a gargantuan increase in th...	{'neg': 0.154, 'neu': 0.671, 'pos': 0.174, 'compound': 0.05}	
140	They added: "The argument that a president may...	{'neg': 0.233, 'neu': 0.643, 'pos': 0.124, 'compound': 0.05}	

141 rows × 2 columns

Now to take the scores and normalize the numbers to generate the compound

```
In [213]: df8['compound'] = df8['scores'].apply(lambda score_dict: score_dict['compound'])

df8
```

Out[213]:

		Democrats2	scores	compound
0	Democrats, Seeing a Weaker Trump, Are Falling ...	{'neg': 0.36, 'neu': 0.64, 'pos': 0.0, 'compou...}		-0.5423
1	Concerns about the president's age are being o...	{'neg': 0.0, 'neu': 0.706, 'pos': 0.294, 'comp...		0.8617
2	PHILADELPHIA — Nine months ago, amid sky-high ...	{'neg': 0.133, 'neu': 0.867, 'pos': 0.0, 'comp...		-0.5994
3	But now, as Democratic National Committee memb...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...		0.0000
4	After Democrats far exceeded their own expecta...	{'neg': 0.064, 'neu': 0.936, 'pos': 0.0, 'comp...		-0.2944
...
136	A three-judge panel of the U.S. Court ofAppea...	{'neg': 0.161, 'neu': 0.839, 'pos': 0.0, 'comp...		-0.5267
137	Justice Barrett oversees that circuit, and eme...	{'neg': 0.113, 'neu': 0.739, 'pos': 0.148, 'co...		0.2023
138	In its application, the association argued tha...	{'neg': 0.152, 'neu': 0.848, 'pos': 0.0, 'comp...		-0.3612
139	"We are witnessing a gargantuan increase in th...	{'neg': 0.154, 'neu': 0.671, 'pos': 0.174, 'co...		0.1531
140	They added: "The argument that a president may...	{'neg': 0.233, 'neu': 0.643, 'pos': 0.124, 'co...		-0.6808

141 rows × 3 columns

Now, so we can easily visualize, I have created a compound score based on the compound rating. if c (compound) ≥ 0.5 c = positive. if c < -0.5 , it is negative; otherwise, c is neutral.

```
In [214...]: df8['comp_score'] = df8['compound'].apply(lambda c: 'Positive' if c >= 0.5 else ('Negative' if c < -0.5 else 'Neutral'))
```

Out[214]:

		Democrats2	scores	compound	comp_score
0	Democrats, Seeing a Weaker Trump, Are Falling ...	{'neg': 0.36, 'neu': 0.64, 'pos': 0.0, 'compound': -0.5423}	-0.5423	Negative	
1	Concerns about the president's age are being o...	{'neg': 0.0, 'neu': 0.706, 'pos': 0.294, 'compound': 0.8617}	0.8617	Positive	
2	PHILADELPHIA — Nine months ago, amid sky-high ...	{'neg': 0.133, 'neu': 0.867, 'pos': 0.0, 'compound': -0.5994}	-0.5994	Negative	
3	But now, as Democratic National Committee memb...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound': 0.0000}	0.0000	Neutral	
4	After Democrats far exceeded their own expecta...	{'neg': 0.064, 'neu': 0.936, 'pos': 0.0, 'compound': -0.2944}	-0.2944	Neutral	
...
136	A three-judge panel of the U.S. Court of Appeal...	{'neg': 0.161, 'neu': 0.839, 'pos': 0.0, 'compound': -0.5267}	-0.5267	Negative	
137	Justice Barrett oversees that circuit, and eme...	{'neg': 0.113, 'neu': 0.739, 'pos': 0.148, 'compound': 0.2023}	0.2023	Neutral	
138	In its application, the association argued tha...	{'neg': 0.152, 'neu': 0.848, 'pos': 0.0, 'compound': -0.3612}	-0.3612	Neutral	
139	"We are witnessing a gargantuan increase in th...	{'neg': 0.154, 'neu': 0.671, 'pos': 0.174, 'compound': 0.1531}	0.1531	Neutral	
140	They added: "The argument that a president may...	{'neg': 0.233, 'neu': 0.643, 'pos': 0.124, 'compound': -0.6808}	-0.6808	Negative	

141 rows × 4 columns

In [225...]

```
# Count the number of positive and negative scores
counts = df8['comp_score'].value_counts()

# Count the number of positive, neutral, and negative scores in consistent order (same counts)
counts = df8['comp_score'].value_counts()[['Positive', 'Neutral', 'Negative']]

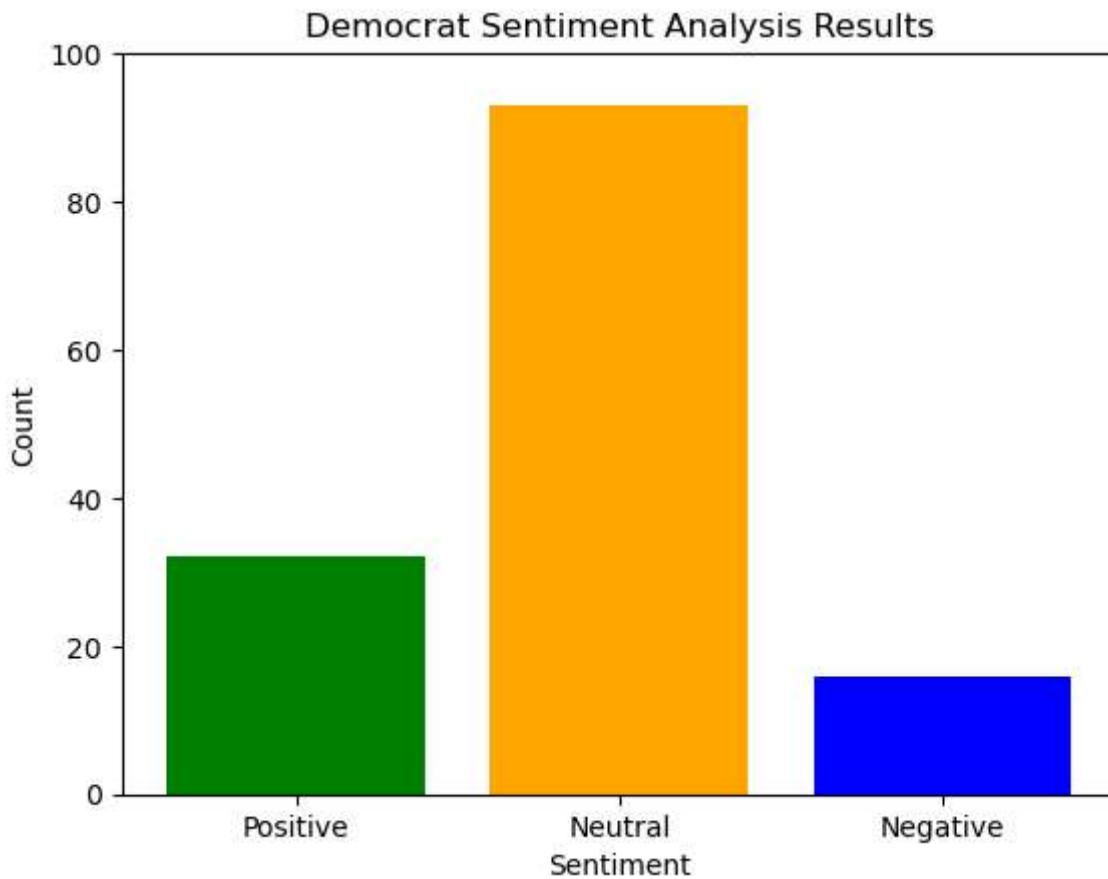
# Define a List of colors for the bar plot
colors = ['green', 'orange', 'blue']

# Create a bar plot
plt.bar(counts.index, counts.values, color = colors)

# Add Labels and title
plt.xlabel('Sentiment')
plt.ylabel('Count')

# Set the y-axis limit to 100
plt.ylim(top=100)
plt.title('Democrat Sentiment Analysis Results')

# Show the plot
plt.show()
```



My First thought on this graph is that the neutral here is WAY bigger than the neutral in textblob. We can see that they classify differently. Positive remains more than negative, so that continues to favour the hypothesis.

Now to repeat the Vader analysis with a Republican dataset

I won't explain it as it's the same process as above.

```
In [224]: df9 = pd.read_table("C:\\\\Users\\\\julia\\\\Desktop\\\\republican2.txt", sep='\\t')  
df9
```

Out[224]:

Republican2

- 0** Trump Is Sued in Death of Capitol Police Offic...
- 1** The suit in the death of Brian D. Sicknick see...
- 2** Jan. 6: This article was updated with a respon...
- 3** WASHINGTON — The longtime partner of a Capitol...
- 4** The suit, filed in Federal District Court for ...
- ...** ...
- 57** Mr. Trump's explosive reaction came the day af...
- 58** In another portion of the video released on Fr...
- 59** Mr. Trump never attempted to check on Mr. Penc...
- 60** During the call, Mr. Short said that they beli...
- 61** But when Mr. Meadows asked where the vice pres...

62 rows × 1 columns

In [217...]

`df9['Republican2'].value_counts()`

Out[217]: Senator Ron Johnson, a Wisconsin Republican and one of the nation's foremost spreaders of misinformation, won a third term, according to The Associated Press, turning back a challenge from his Democratic rival, Lt. Gov. Mandela Barnes.

2

Mr. Johnson's victory, in what became one of the ugliest Senate races in the country and the most expensive contest in Wisconsin history, is critical to Republican efforts to win back a Senate majority.

2

In August, after Mr. Barnes won the Democratic primary as the clear favorite, Mr. Johnson and his Republican allies began a strident campaign to label him as a soft-on-crime, anti-American radical.

2

Like his victories in 2010 and 2016 over Russ Feingold, a Democrat, Mr. Johnson defeated Mr. Barnes after initially trailing in public polls.

2

In a 14-page missive that did not address whether he would comply with the subpoena, Mr. Trump perpetuated the same lies that had fueled the attack and boasted about the size of the crowd that had amassed to hear him speak before marching to the Capitol and staging a violent siege.

1

The former president has indicated privately to aides that he would be willing to testify to the House panel but would like to do so live, according to a person close to him, a prospect that would prevent video of him from being clipped or edited in a manner he dislikes.

1

The letter he released on Friday – a conspiracy theory-filled rehash of his many grievances and false assertions – underscored the risks for the committee of giving Mr. Trump an unfettered public platform.

1

“The presidential election of 2020 was rigged and stolen!” the letter began in all capital letters.

1

Mr. Trump dedicated page after page to repeating that lie about the 2020 election, which he lost to President Biden, a fact he has repeatedly refused to acknowledge.

1

“You have not gone after the people that created the fraud, but rather great American patriots who questioned it, as is their constitutional right,” Mr. Trump wrote in the screed.

1

“These people have had their lives ruined as your committee sits back and basks in the glow.”

1

Instead of providing what he claimed was evidence, he included appendices filled with assertions of widespread election irregularities that have been debunked, some by his own former attorney general, William P. Barr, and other top Justice Department officials.

1

“A large percentage of American citizens, including almost the entire Republican Party, feel that the election was rigged and stolen,” Mr. Trump wrote, without mentioning that his false claims were the reason the lies spread among the populace and have come to define the G.O.P.

1

He included aerial photographs purporting to show enormous throngs of people on the National Mall on Jan. 6, 2021 – reminiscent of the images that the White House released after his inauguration in 2017 – and again complained of what he claimed was media censorship that downplayed the size of the crowd.

1

The letter emerged as the House committee, which had voted unanimously on Thursday to issue a subpoena to Mr. Trump, was at work preparing the demand, which would list specific documents that the former president must turn over and a date by when he must

estify.

1

Trump Is Sued in Death of Capitol Police Officer After Jan. 6

1

In a rambling, 14-page restatement of false claims and conspiracy theories, the former president did not indicate whether he would testify before the House panel investigating the Capitol riot.

1

People close to the committee's work said the panel was poised to issue the subpoena as soon as Monday.

1

While Mr. Trump was unlikely to comply with the subpoena — he previously refused to testify in his impeachment trial — committee and staff members were discussing whether they would accept him testifying live.

1

Those familiar with the discussions said the committee seemed open to the idea, believing the panel could most likely elicit some significant developments from Mr. Trump's testimony.

1

Should Mr. Trump decline to appear, it could lead to a precedent-setting fight.

1

Several former presidents voluntarily testified before Congress, but there is no Supreme Court precedent that says whether Congress has the power to compel a former president to testify about his actions in office.

1

Committee members said they believed Mr. Trump should want to comply with the subpoena.

1

"I want to believe again that every American citizen who knows something about these events would come forward to testify, and nobody knows more about them than Donald Trump does," said Representative Jamie Raskin, Democrat of Maryland and a member of the committee.

1

Representative Bennie Thompson, Democrat of Mississippi and the chairman of the committee, told reporters on Thursday that he hoped Mr. Trump would comply but that he believed the panel had compiled a comprehensive case of the events of Jan. 6 without the former president's testimony.

1

"If we get his attention, fine," Mr. Thompson said. "If not, we'll go with the evidence we collected."

1

Mr. Trump's explosive reaction came the day after a hearing in which the Jan. 6 panel summed up its case against the former president, and presented remarkable behind-the-scenes video that showed top congressional leaders scrambling to secure the Capitol during the attack.

1

In another portion of the video released on Friday to CNN, Speaker Nancy Pelosi can be seen talking by cellphone to Vice President Mike Pence, asking about his well-being and advising him, "Don't let anybody know where you are." The moment underscored the danger Mr. Pence faced as the rioters called for his execution and Mr. Trump insulted him on Twitter.

1

Mr. Trump never attempted to check on Mr. Pence, who had been evacuated from the Capitol just minutes before the mob flooded the area where he had been. But in a separate phone call sometime that afternoon, Mr. Pence's chief of staff, Marc Short, reached Mark Meadows, the White House chief of staff, to say that he and the vice president were safe, according to a person briefed on the exchange.

1

During the call, Mr. Short said that they believed the counting of electoral votes should resume that night and Mr. Meadows agreed, the person said.

1

WASHINGTON – Former President Donald J. Trump responded on Friday to a promised subpoena from the House committee investigating the Jan. 6 assault with a lengthy, rambling letter that attacked the panel's work, reiterated false claims of widespread voting fraud and presaged a potentially bruising battle over whether he could be compelled to testify about his role in the riot and his efforts to subvert the 2020 election.

1

He remains one of the most influential and celebrated political figures in the state's history.

1

Trump, Reacting to Pending Jan. 6 Subpoena, Repeats Election Lies in Letter

1

The suit in the death of Brian D. Sicknick seeks millions in damages from the former president, whom it paints as responsible for the violence that day, and two Capitol rioters.

1

Jan. 6: This article was updated with a response from a spokesperson for former President Donald J. Trump.

1

WASHINGTON – The longtime partner of a Capitol Police officer who died after the Jan. 6 attack sued former President Donald J. Trump and two Capitol rioters on Thursday, arguing that his death was a “direct and foreseeable consequence” of their roles in the mob violence that day.

1

The suit, filed in Federal District Court for the District of Columbia just before the second anniversary of the attack, seeks at least \$10 million in damages each from Mr. Trump and two men accused of assaulting the officer, Brian D. Sicknick, with chemical spray on Jan. 6, George Tanios and Julian Elie Khater. Mr. Khater pleaded guilty in the assault, and Mr. Tanios pleaded guilty to misdemeanor charges.

1

“The horrific events of Jan. 6, 2021, including Officer Sicknick’s tragic, wrongful death, were a direct and foreseeable consequence of the defendants’ unlawful actions,” the suit said, adding that “the defendants are responsible for the injury and destruction that followed.”

1

Officer Sicknick died the day after the attack, but the Washington medical examiner ruled that it was from natural causes – multiple strokes that occurred hours after the mob confrontation – and prosecutors shied away from linking his death to the assault.

1

But the medical examiner also said that “all that transpired played a role in his condition,” and the Capitol Police consider his death a “line of duty” fatality.

1

In her suit, Sandra Garza, who as Officer Sicknick’s longtime partner is a representative of his estate, painted Mr. Trump as culpable both broadly for the violence on Jan. 6 and specifically for Officer Sicknick’s death.

1

The suit cited the conclusions of the House committee that investigated the Jan. 6 attack, saying that the panel “made a number of criminal referrals” against Mr. Trump “based on its finding of ‘sufficient evidence of one or more potential violations,’ including inciting an insurrection.

1

In a statement early Friday, a spokesperson for Mr. Trump dismissed the lawsuit as a frivolous attack.

1

The former president is facing an array of civil suits arguing that he is liable for major financial damages for his role in the events surrounding the Jan. 6 attack. A federal judge in February allowed three civil suits against Mr. Trump to move forward. The case is currently being appealed.

1

Officer Sicknick is one of five police officers at the Capitol on Jan. 6 who died in

the year after the attack.

1

The four other officers – Jeffrey Smith, Howard S. Liebengood, Gunther Hashida and Kyle DeFreytag – died by suicide.

1

Wisconsin Voters Re-elect Johnson, an Election Denier, in a Key Senate Race Senator Ron Johnson, a Republican and one of the foremost spreaders of misinformation, won a third term, turning back a challenge from Lt. Gov. Mandela Barnes.

1

Democrats had criticized Mr. Johnson as a self-dealer who used his dozen years in the Senate to enrich himself and his big donors – a strategy agreed to more than a year ago by officials in Washington and Wisconsin.

1

They largely did not stress to voters Mr. Johnson's role in former President Donald J. Trump's effort to overturn the result of the 2020 election or his pushing of discredited Covid treatments.

1

Now Mr. Johnson, 67, will return to Washington for a third term that he said six years ago he would not seek.

1

He began to change his tune shortly before the 2020 election and formally launched his re-election bid early this year.

1

Mr. Barnes, 35, had cast himself as the voice of a new generation of Wisconsin Democrats, ending his stump speeches with a rousing, "It's our time now."

1

But Mr. Barnes struggled to win over the middle-of-the-road voters.

1

Mr. Johnson's September advertising blitz turned the race around, burying Mr. Barnes under a largely unanswered mountain of attack ads using his own words that called for a redistribution of law enforcement resources, criticized police practices and praised progressive officials.

1

Mr. Barnes tried to distance himself from his past statements, but Mr. Johnson's ads put him in a hole too deep to dig out from.

1

Mr. Johnson, a former plastics manufacturing executive, is just the second Wisconsin Republican to win a third Senate term in the last century.

1

Senator Alexander Wiley served four terms from 1939 to 1963, and Senator Robert La Follette, a liberal Republican known as "Fighting Bob," spent the last 20 years of his life in the Senate.

1

But when Mr. Meadows asked where the vice president was, Mr. Short declined to provide specifics, saying only that they were around the Capitol.

1

Name: Republican2, dtype: int64

In [218...]

```
df9['scores'] = df9['Republican2'].apply(lambda review: sid.polarity_scores(review))  
df9
```

Out[218]:

		Republican2	scores
0	Trump Is Sued in Death of Capitol Police Offic...	{'neg': 0.281, 'neu': 0.719, 'pos': 0.0, 'comp...	
1	The suit in the death of Brian D. Sicknick see...	{'neg': 0.271, 'neu': 0.672, 'pos': 0.057, 'co...	
2	Jan. 6: This article was updated with a respon...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	
3	WASHINGTON — The longtime partner of a Capitol...	{'neg': 0.312, 'neu': 0.688, 'pos': 0.0, 'comp...	
4	The suit, filed in Federal District Court for ...	{'neg': 0.274, 'neu': 0.726, 'pos': 0.0, 'comp...	
...
57	Mr. Trump's explosive reaction came the day af...	{'neg': 0.066, 'neu': 0.768, 'pos': 0.166, 'co...	
58	In another portion of the video released on Fr...	{'neg': 0.102, 'neu': 0.898, 'pos': 0.0, 'comp...	
59	Mr. Trump never attempted to check on Mr. Penc...	{'neg': 0.0, 'neu': 0.925, 'pos': 0.075, 'comp...	
60	During the call, Mr. Short said that they beli...	{'neg': 0.0, 'neu': 0.92, 'pos': 0.08, 'compou...	
61	But when Mr. Meadows asked where the vice pres...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	

62 rows × 2 columns

In [219...]

```
df9['compound'] = df9['scores'].apply(lambda score_dict: score_dict['compound'])

df9
```

Out[219]:

		Republican2	scores	compound
0	Trump Is Sued in Death of Capitol Police Offic...	{'neg': 0.281, 'neu': 0.719, 'pos': 0.0, 'comp...}		-0.5994
1	The suit in the death of Brian D. Sicknick see...	{'neg': 0.271, 'neu': 0.672, 'pos': 0.057, 'co...}		-0.8625
2	Jan. 6: This article was updated with a respon...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...}		0.0000
3	WASHINGTON — The longtime partner of a Capitol...	{'neg': 0.312, 'neu': 0.688, 'pos': 0.0, 'comp...}		-0.9565
4	The suit, filed in Federal District Court for ...	{'neg': 0.274, 'neu': 0.726, 'pos': 0.0, 'comp...}		-0.9682
...
57	Mr. Trump's explosive reaction came the day af...	{'neg': 0.066, 'neu': 0.768, 'pos': 0.166, 'co...}		0.5719
58	In another portion of the video released on Fr...	{'neg': 0.102, 'neu': 0.898, 'pos': 0.0, 'comp...}		-0.7717
59	Mr. Trump never attempted to check on Mr. Penc...	{'neg': 0.0, 'neu': 0.925, 'pos': 0.075, 'comp...}		0.6652
60	During the call, Mr. Short said that they beli...	{'neg': 0.0, 'neu': 0.92, 'pos': 0.08, 'compou...}		0.2732
61	But when Mr. Meadows asked where the vice pres...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...}		0.0000

62 rows × 3 columns

```
In [220... df9['comp_score'] = df9['compound'].apply(lambda c: 'Positive' if c >= 0.5 else ('Negative' if c <= -0.5 else 'Neutral'))
```

df9

Out[220]:

	Republican2	scores	compound	comp_score
0	Trump Is Sued in Death of Capitol Police Offic...	{'neg': 0.281, 'neu': 0.719, 'pos': 0.0, 'comp...}	-0.5994	Negative
1	The suit in the death of Brian D. Sicknick see...	{'neg': 0.271, 'neu': 0.672, 'pos': 0.057, 'co...}	-0.8625	Negative
2	Jan. 6: This article was updated with a respon...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...}	0.0000	Neutral
3	WASHINGTON — The longtime partner of a Capitol...	{'neg': 0.312, 'neu': 0.688, 'pos': 0.0, 'comp...}	-0.9565	Negative
4	The suit, filed in Federal District Court for ...	{'neg': 0.274, 'neu': 0.726, 'pos': 0.0, 'comp...}	-0.9682	Negative
...
57	Mr. Trump's explosive reaction came the day af...	{'neg': 0.066, 'neu': 0.768, 'pos': 0.166, 'co...}	0.5719	Positive
58	In another portion of the video released on Fr...	{'neg': 0.102, 'neu': 0.898, 'pos': 0.0, 'comp...}	-0.7717	Negative
59	Mr. Trump never attempted to check on Mr. Penc...	{'neg': 0.0, 'neu': 0.925, 'pos': 0.075, 'comp...}	0.6652	Positive
60	During the call, Mr. Short said that they beli...	{'neg': 0.0, 'neu': 0.92, 'pos': 0.08, 'compou...}	0.2732	Neutral
61	But when Mr. Meadows asked where the vice pres...	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...}	0.0000	Neutral

62 rows × 4 columns

In [223...]

```
# Count the number of positive and negative scores
counts = df9['comp_score'].value_counts()

# Count the number of positive, neutral, and negative in same order as Last version
counts = df9['comp_score'].value_counts()[['Positive', 'Neutral', 'Negative']]

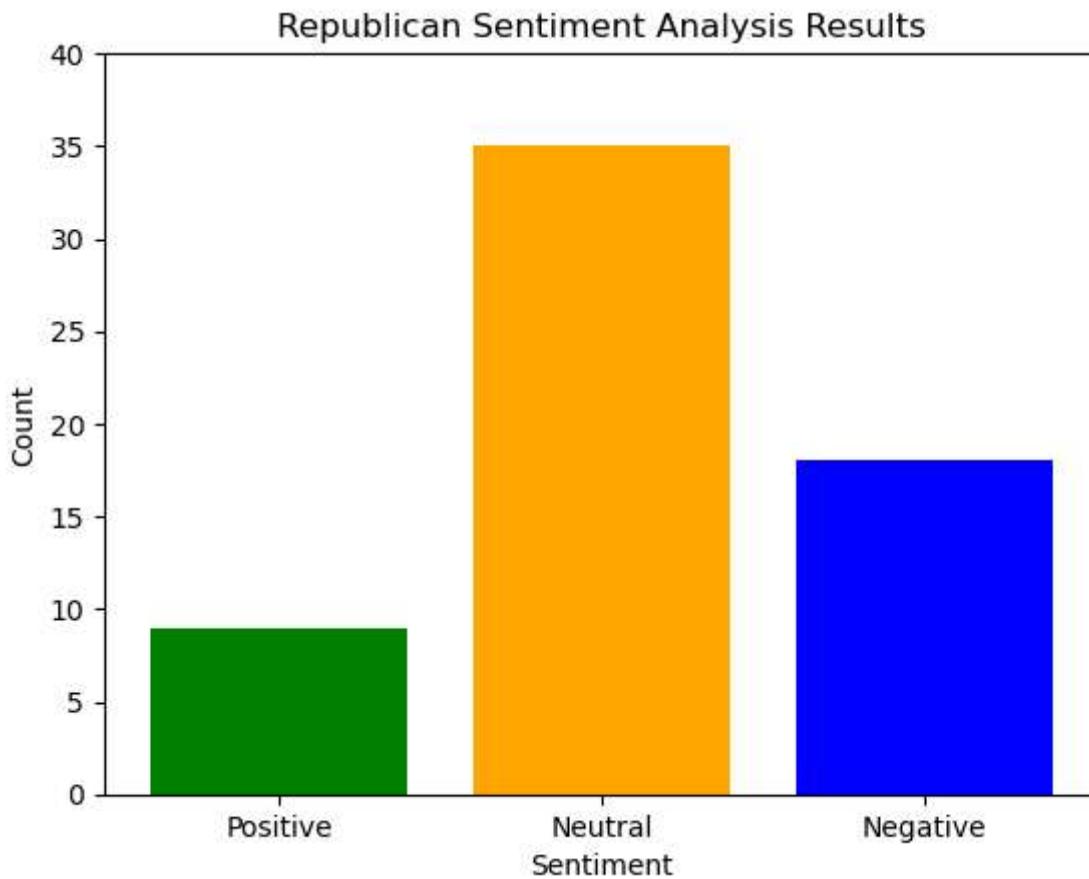
# Define a List of colors for the bar plot
colors = ['green', 'orange', 'blue']

# Create a bar plot
plt.bar(counts.index, counts.values, color = colors)

# Add Labels and title
plt.xlabel('Sentiment')
plt.ylabel('Count')

# Set the y-axis limit to 40
plt.ylim(top=40)
plt.title('Republican Sentiment Analysis Results')

# Show the plot
plt.show()
```



Thoughts on this graph:

1. This version proves my hypothesis.
2. Again with the neutral issue, though, it contradicts textblobs classification of neutral

Overall thoughts:

We cannot trust sentiment analysis. The difference between textblob and Vader is so huge that it provides a different conclusion. This obviously highlights the baked-in bias errors of those who created the datasets that textblob and Vader pull from.

In []: