

Do Democrats and Republicans discuss the same topics?

By Carl Lehman

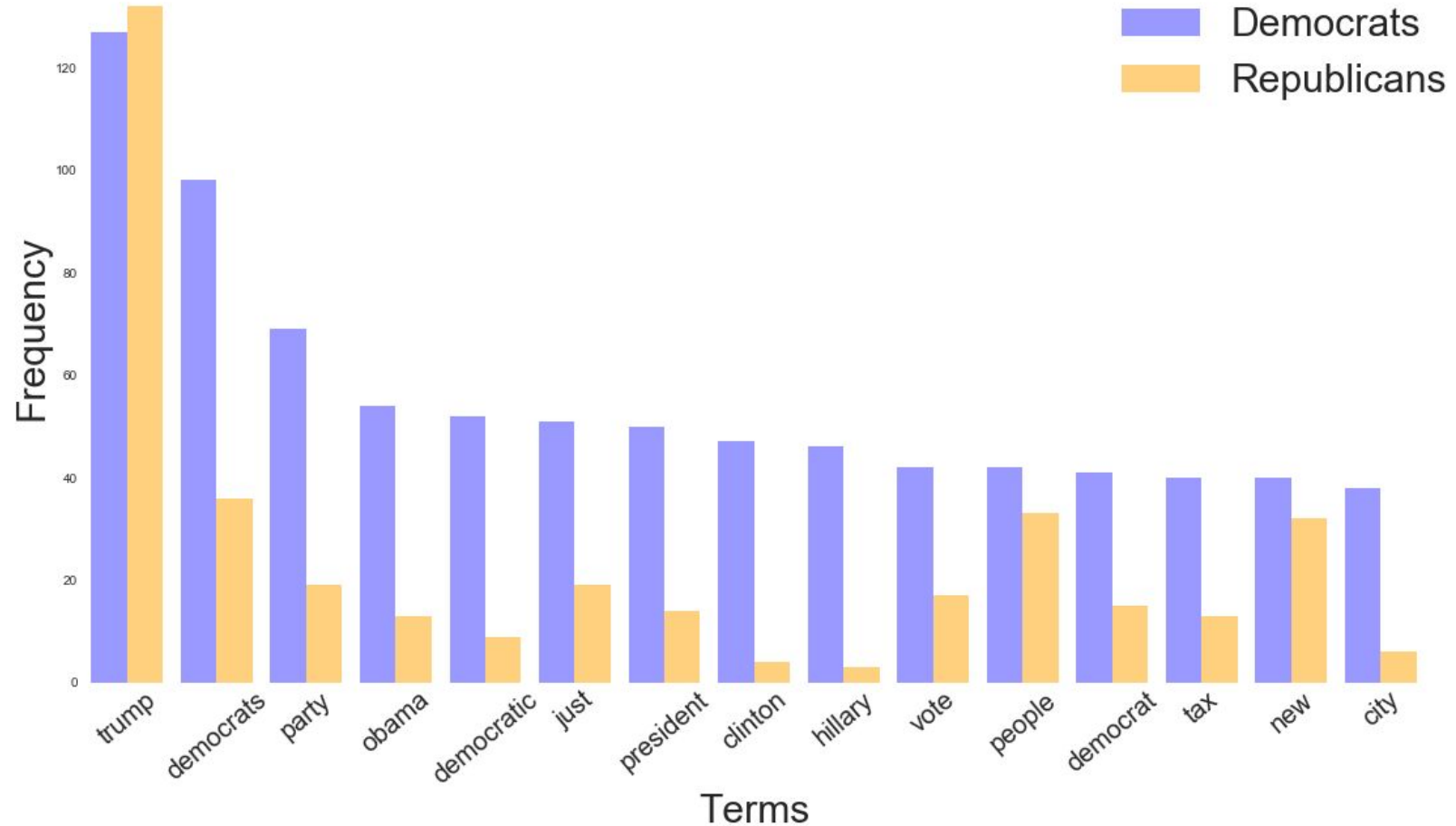
Why this is an interesting question

- We want to know if either Democrats or Republicans are biased towards discussing certain topics.
- For example, do republicans talk about gun control more than democrats?
- Do republicans talk about gun control differently than democrats?

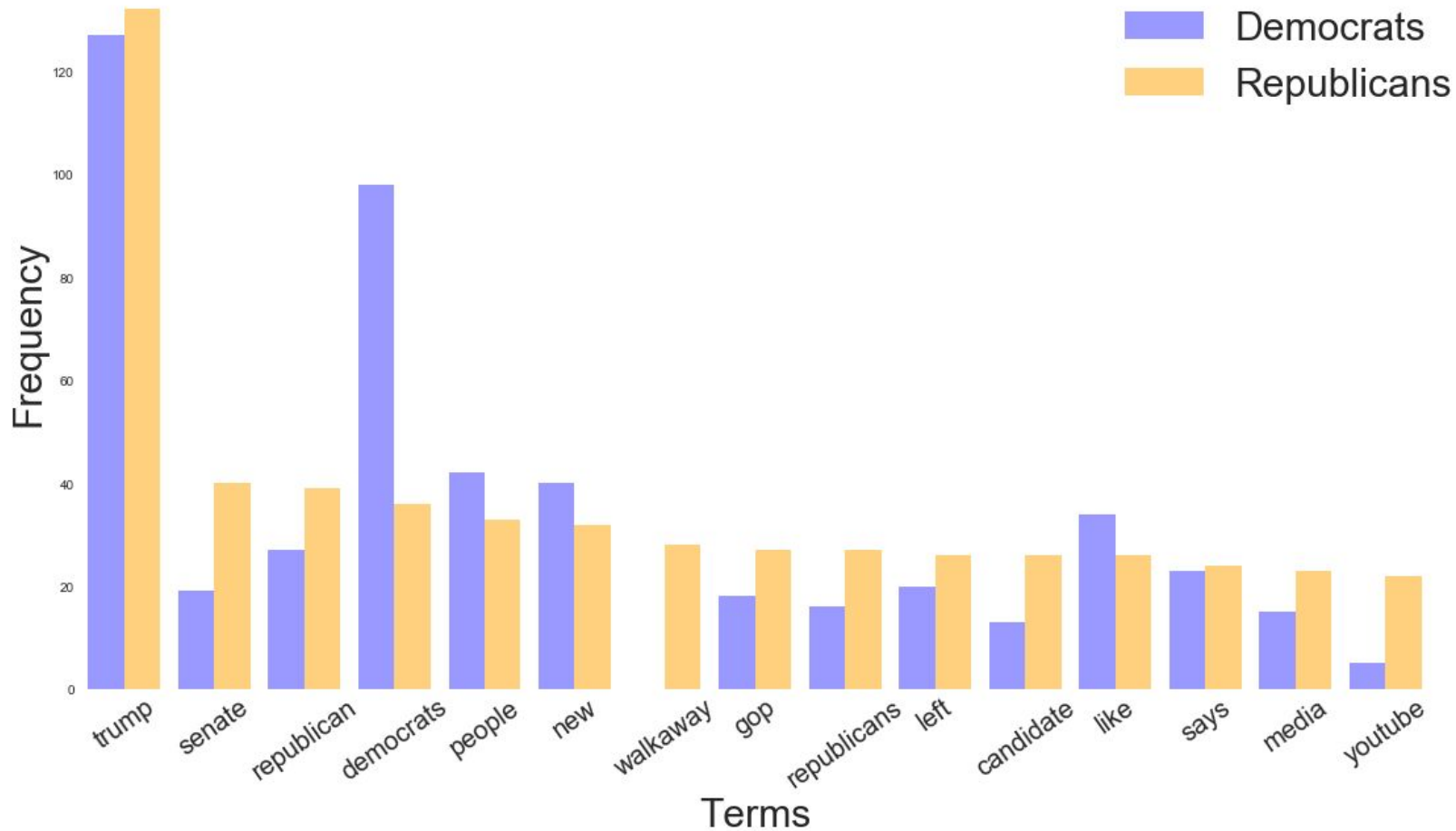
The Data

- Scraped about 1,000 posts from both the Democrat subreddit (<https://www.reddit.com/r/Democrat/>) and the Republican subreddit (<https://www.reddit.com/r/Republican/>)
- Looked at both the title and text body of each post
- Turned the words from each post into features and counted their appearance in each post

Most Frequent Terms in Democrat Subreddit



Most Frequent Terms in Republican Subreddit



T-tests between top overlapping words

- Is there a statistically significant difference between the average frequency of the top words that appear in both subreddits?
 - Null Hypothesis: The subreddits for democrats and republicans have the same mean frequency for word x.
 - Alternative Hypothesis: The subreddits for democrats and republicans have a different mean frequency for word x.
 - P-value for word “Trump”: **.75**
 - P-value for word “Democrats”: **.0001**
 - P-value for word “Party”: **.00035**

Modeling

- Motivation
- Scores:
 - Logistic Regression: 65.9% accuracy
 - K-Nearest Neighbors: 61.1% accuracy
 - Random Forest: 60.0% accuracy
- Even with sentiment analysis, my models had a difficult time differentiating between the subreddits, as the best model only scored about 15% better than a coin flip

Conclusion

- From my analysis, it appears that democrat and republicans discuss very similar topics and with similar tones
- This makes sense, as a large majority of the posts found on political subreddits are news headlines
- This shows that neither group is biased in terms of what news is discussed
- Future analysis should seek to look at the comments in addition to the posts