What types of news content do Facebook users engage with most?

Using data from The New York Times

By Jessica Miles
Updated September 16, 2021

Agenda

- Challenge statement: What and why
- My approach
- Dataset overview
- Machine learning results
- Recommendations to drive higher engagement
- Caveats and Future Steps

Photo by cottonbro from Pexels

The challenge: Posting content to engage Facebook users

- 36% of US adults regularly get news from Facebook (Pew Research, 2020)
- Higher initial engagement leads to:
  - better News Feed prioritization
  - wider audience of potential new subscribers
- Not all content can be posted to Facebook
  - Multiple formats of the same content may exist
  - Facebook user preferences may differ from readers of print or web news content

Dataset Overview

Datasets

All NYT Facebook Posts from Nov 2012 to Nov 2016

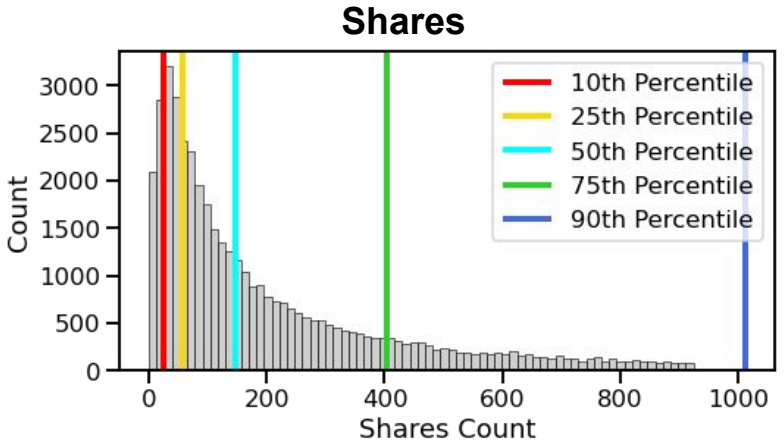
- 48,000 posts
- Found data set here
- Features modeled:
  - Post text, post type, timing of post

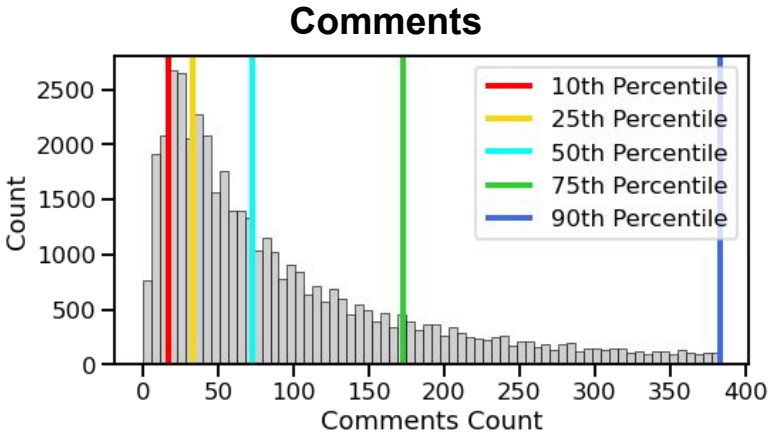
Posts that could be matched to NYT articles from API - 43,000

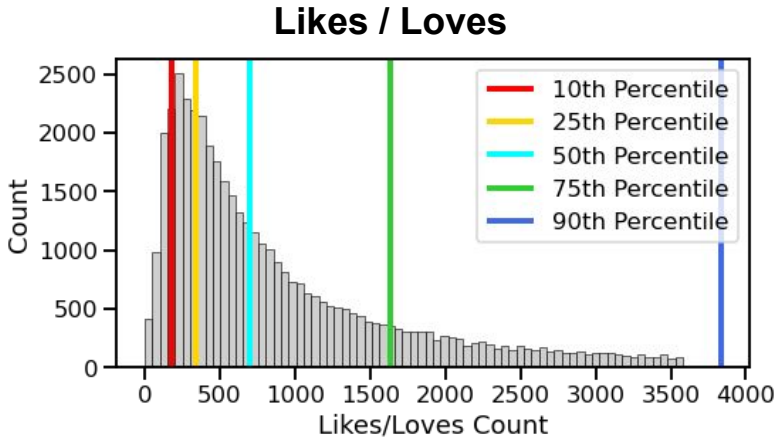
- Features modeled:
  - Abstract and headline, news section, topical subjects, article word count, content type
- Not all posts could be matched, so modeled as a separate dataset

Engagement Distribution

- 3 engagement metrics: **Comments**, **Shares**, and **Likes/Loves**
- Calculated percentile in each metric, then used the **mean of the percentiles as a single engagement metric**

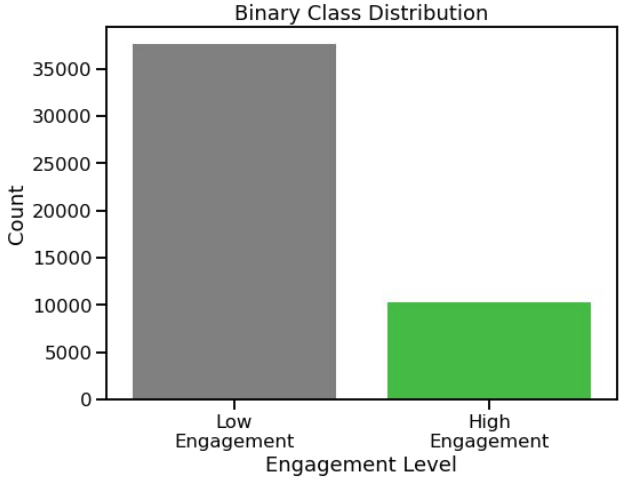


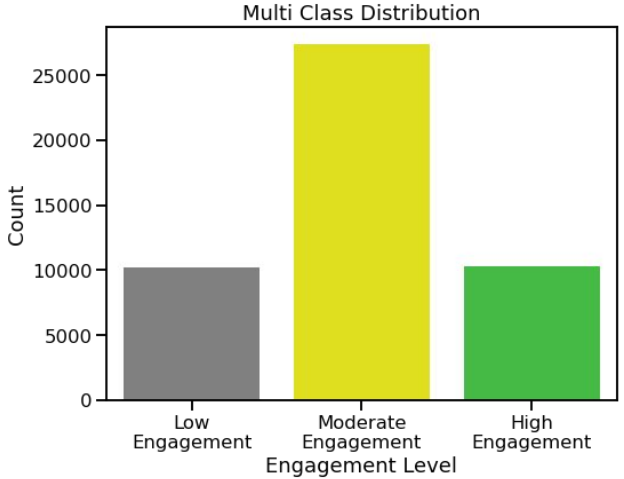




Target "High Engagement" Class

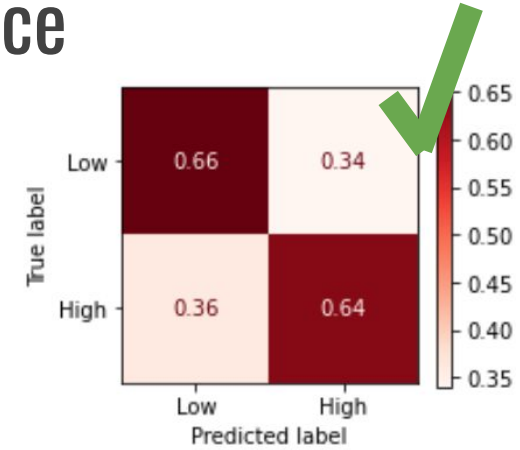
- Based on single engagement metric
- Binary:
  - High Engagement: over 75
  - Low Engagement: under 75
- Multi-class:
  - Low: < 25
  - Moderate: > 25 and < 75
  - High: > 75 (same as binary)

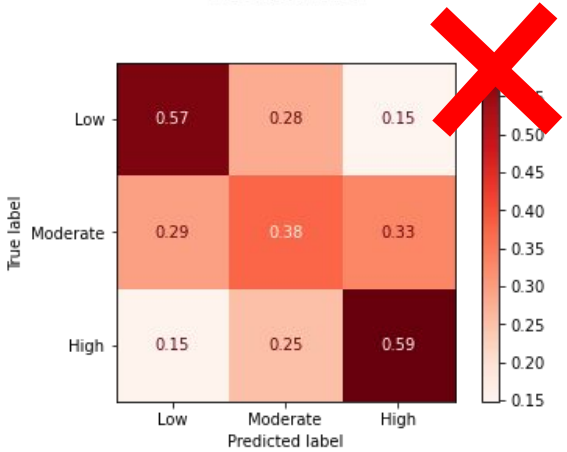




My approach - Machine Learning for Inference

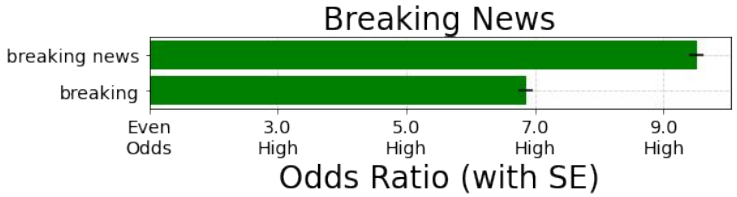
- Trained simple machine learning models on post and article text and metadata
    - Models included Naive Bayes, Logistic Regression
- **Binary model performed best: Detects ~62% of High Engagement posts correctly**
- Analyzed predictors from binary model for insights
    - Best model trained on 10 random splits drawn from entire dataset to obtain mean odds ratios for features
    - Manually reviewed and categorized top predictors to group words and topics into similar themes





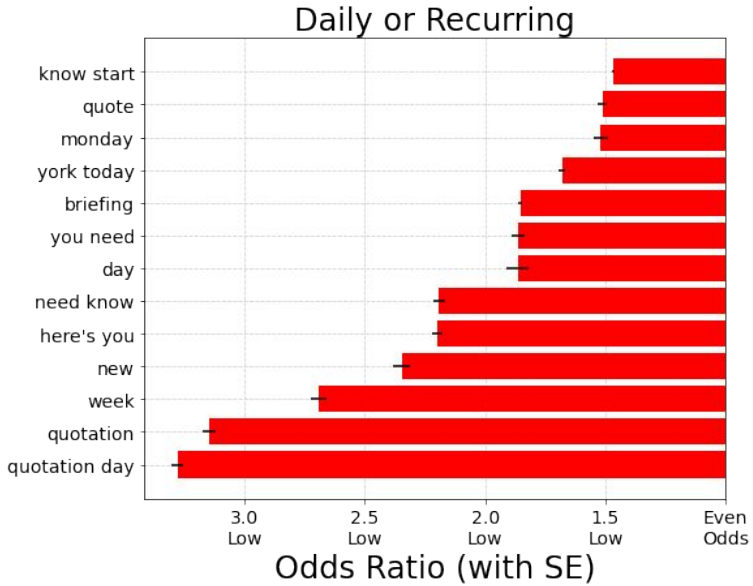
Recommendations to Increase Engagement

1. Prioritize Breaking News over Recurring Content

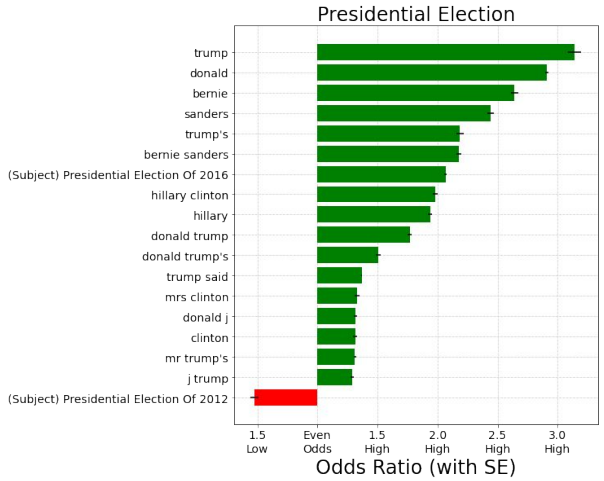


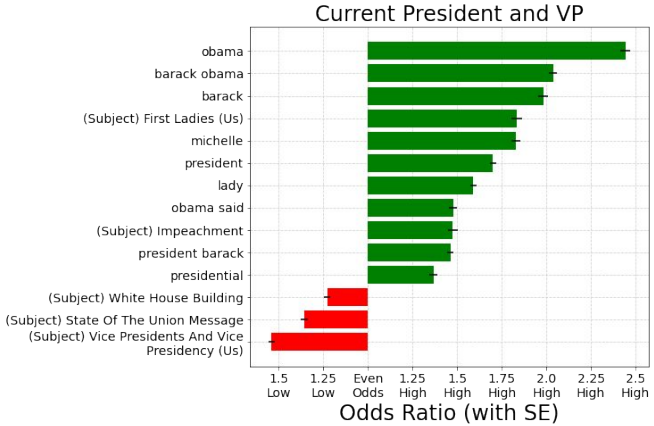
Examples of Recurring Content:

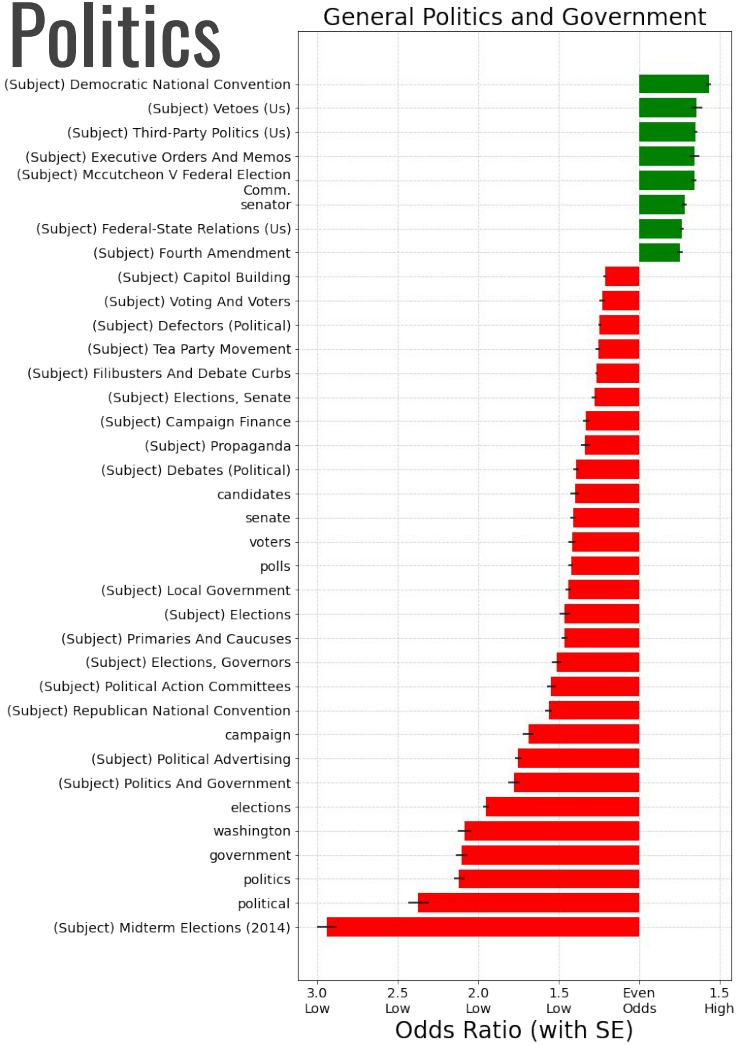
- Quotation of the Day
- Your Monday Briefing. Here's what you need to know to start your day.
- What You Should Watch This Week
- New York Today



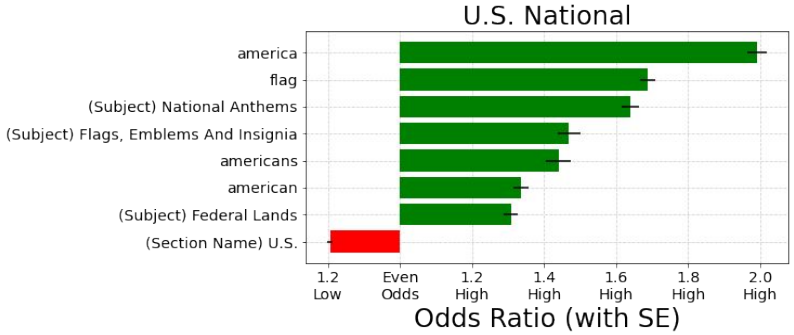
2. Focus on the President over General Politics

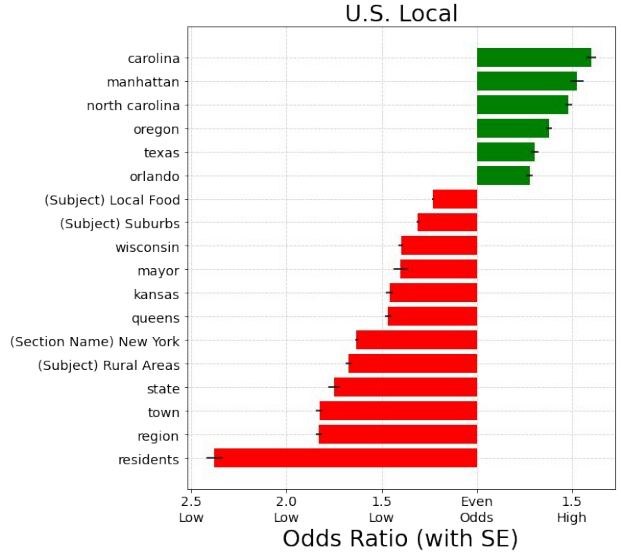


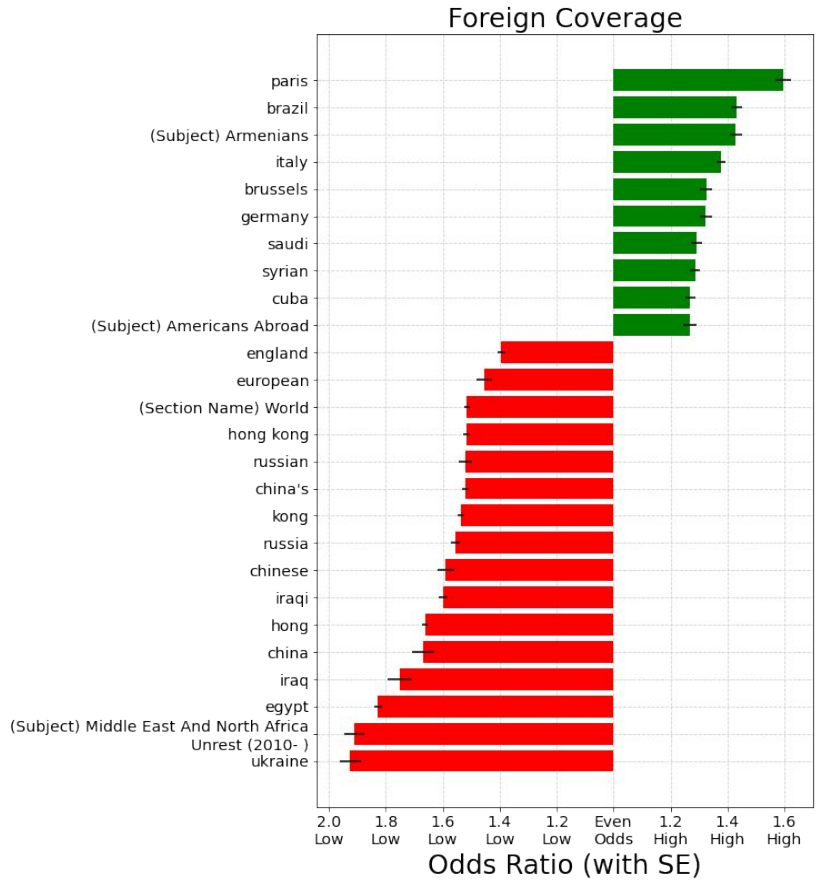




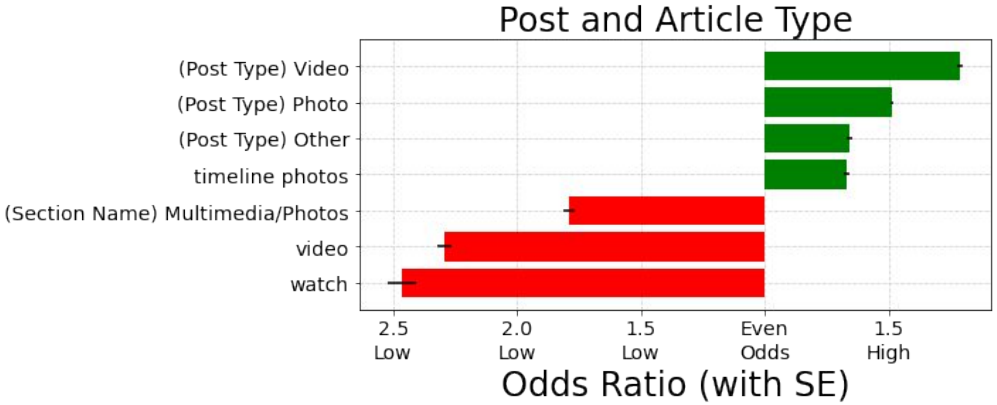
3. Prioritize U.S. National content over most Foreign and Local

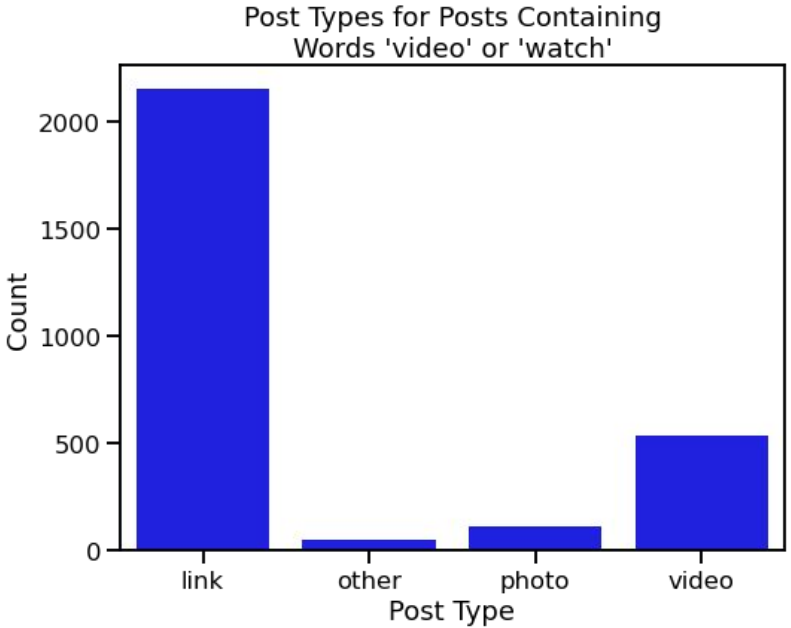






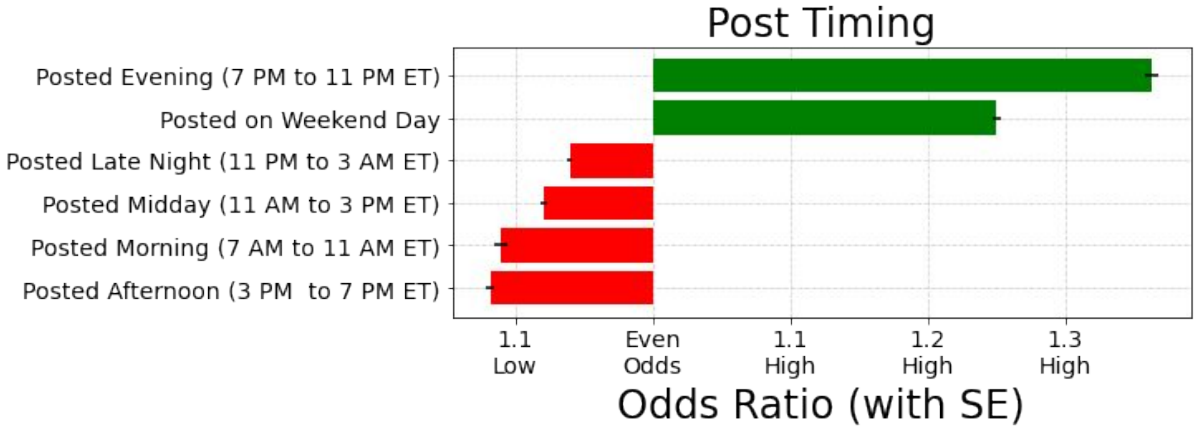
4. Post More Multimedia Content Outside Subscriber Paywall





- Video and Photo post types are where photos and videos were uploaded to Facebook. The majority of posts are links to content behind the paywall.
- Most posts containing the words "video" or "watch" are actually posted as links to content, which is frequently behind the paywall. These are less engaging.

5. Post on Evenings and Weekends, when appropriate



- Content posted from 7 PM to 11 PM or on a weekend day has slightly increased odds of high engagement compared to posts added at other times
- Likely due to News Feed algorithm prioritizing recently posted content, and these being popular times to engage with Facebook

Additional Topics (details in Appendix)

More Engaging:

- Opinion and Editorial content (though not Op-Eds and Ethics)
- Obituaries
- Recipes and Cooking (though not Food section)
- Parenting and Children
- Mental Health
- Beauty and Self Care
- Exercise
- Marriage and Relationships
- Religion

Less Engaging:

- Business and Commerce
- Economics
- Surveillance, Privacy, and Security
- Fashion and Clothing
- Sports (global sports are an exception)
- Holidays
- Military and Warfare
- Modern Technology

Summary and Conclusion

Summary of Recommendations

1. Prioritize **Breaking News** over Recurring (daily, weekly) content
2. Focus on the **current president and presidential election** over general political topics
3. **Prioritize national coverage relevant for all americans** (especially if it's patriotic) versus local or foreign content
4. Upload more video and photo content to Facebook so it's **outside the subscriber paywall**
5. **Add posts on nights and weekends**, when users are more likely to be actively engaging with Facebook
6. Consider additional topics to focus on which are more highly engaging, and de-prioritize less engaging topics

Caveats

- Facebook's own News Feed algorithm is very important to driving engagement, and is based partly on user-centric preferences which we can't model
- The cutoff point for "High engagement" is somewhat arbitrary; changing it would yield different results
- Tastes change, so results from 2016 may not be applicable to present day. Facebook's algorithm also may have changed.
- These recommendations assume high engagement is the primary goal: they should be considered in the context of The Times' values and mission statement.

Potential Future Work

- Review sentiment of articles to see whether that affects engagement
- Compare engagement on Facebook to comments count on the New York Times website, so see if there is a difference in what drives engagement there
- Create an interactive dashboard so engagement of certain words and subjects can be reviewed

Thank you for reading!

For questions or comments, please contact:

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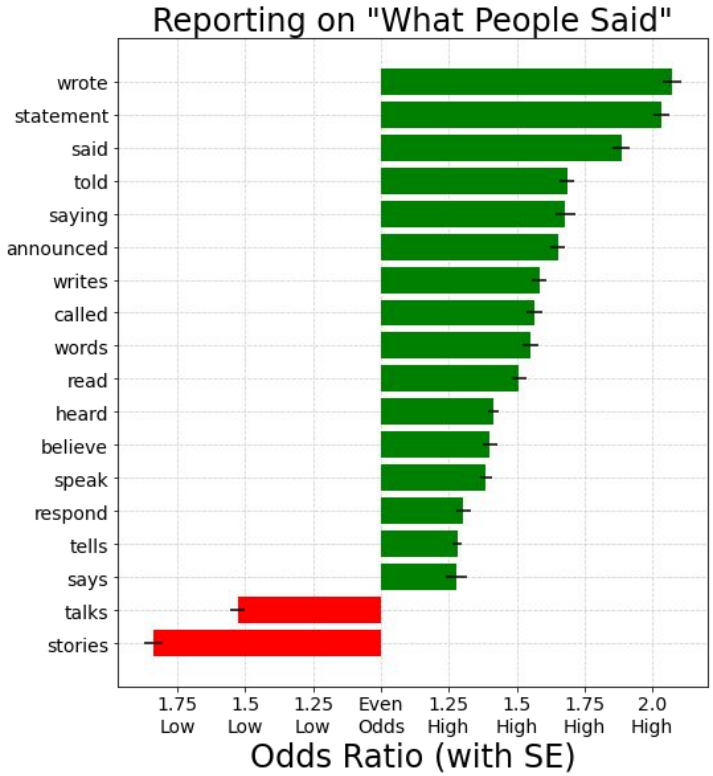
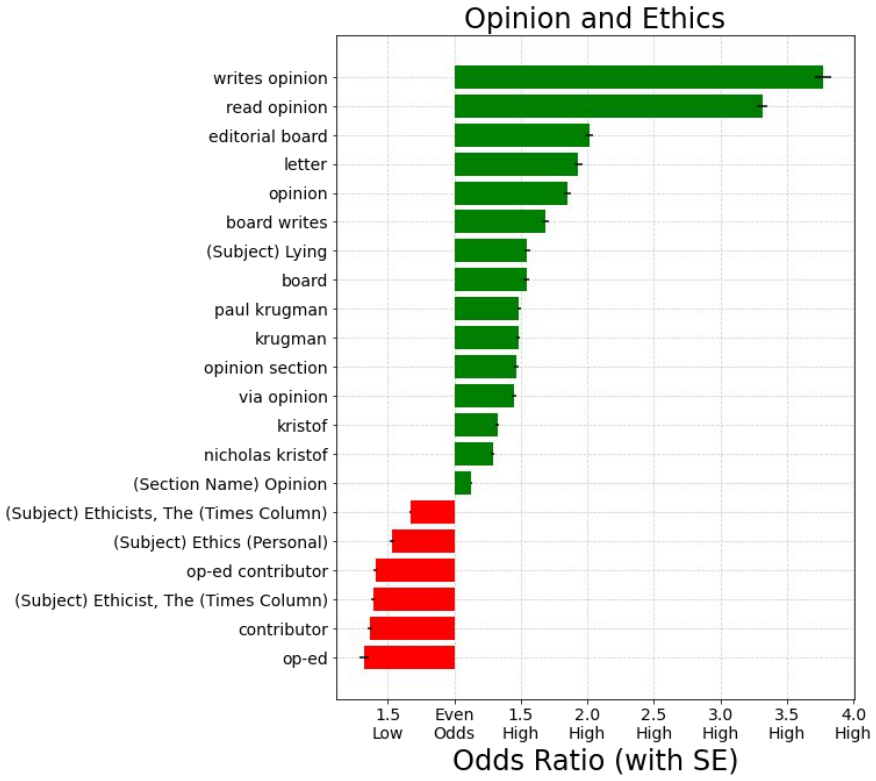
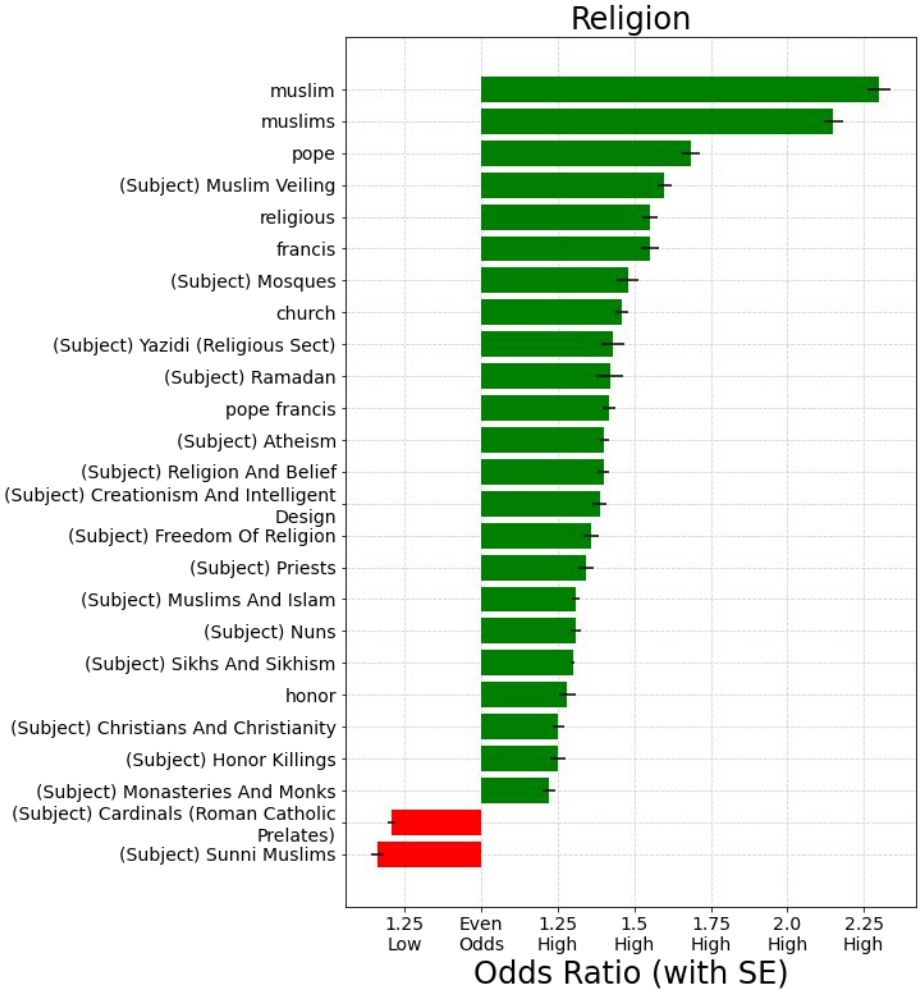
Appendix I - More Highly Engaging Topics

Reporting on What People Said

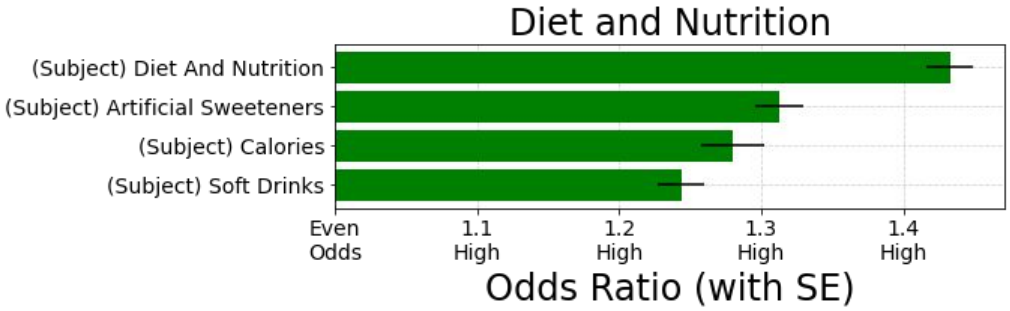


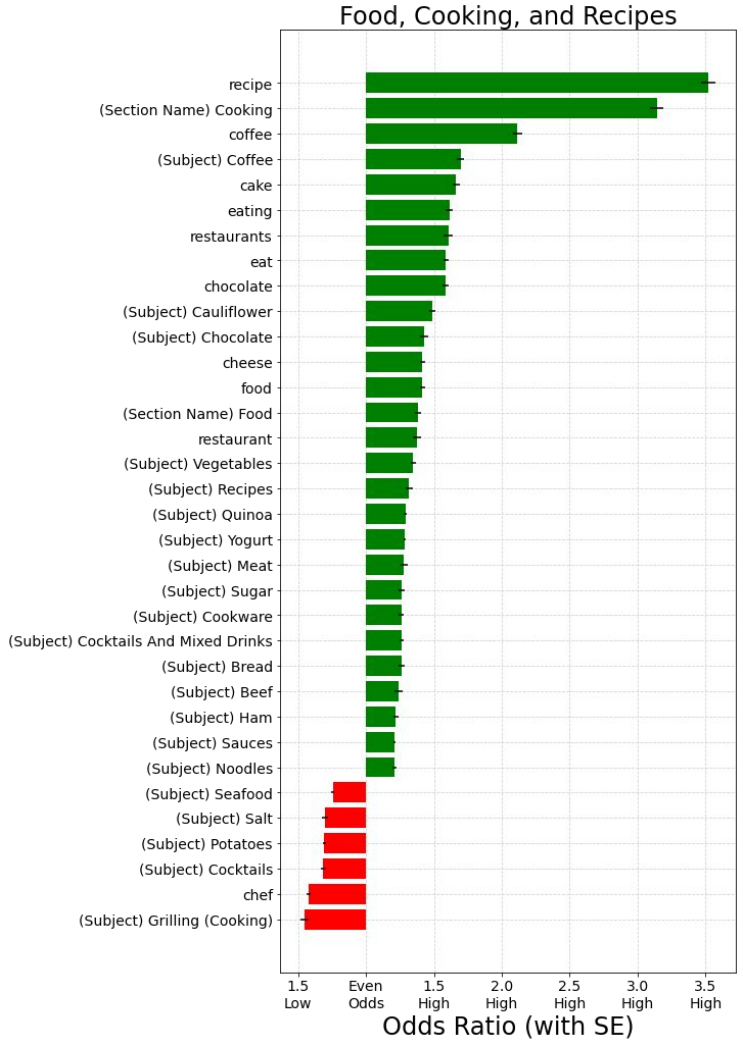
Opinion and Ethics; Religion



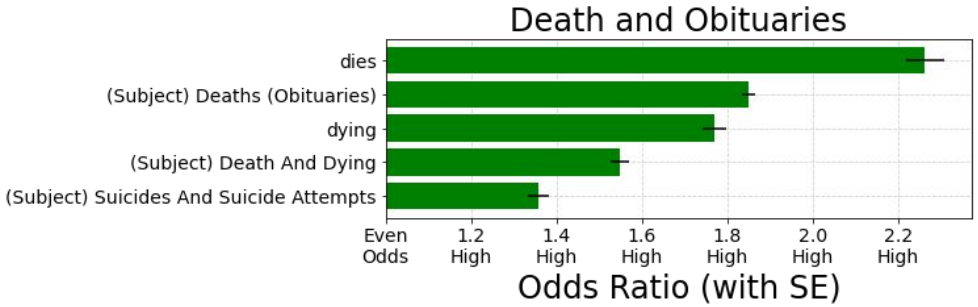


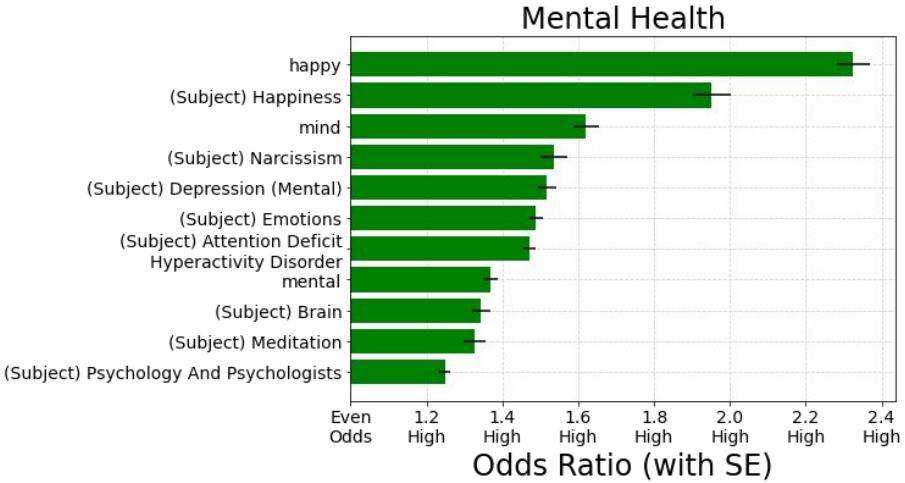
Recipes and Cooking; Diet and Nutrition



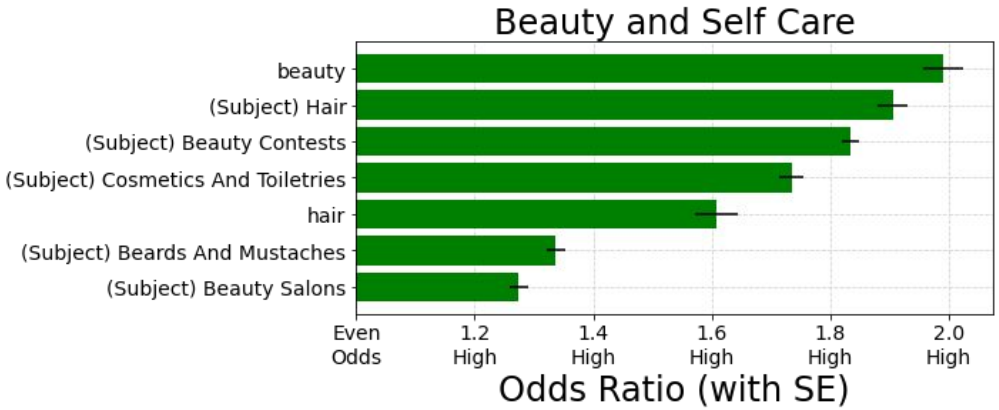


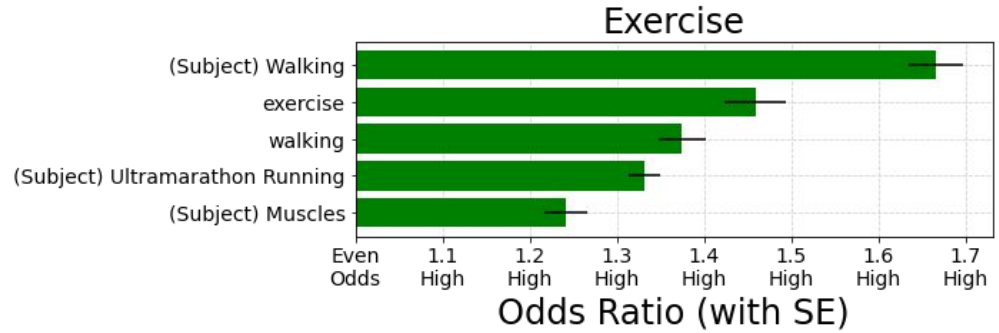
Death and Obituaries; Mental Health



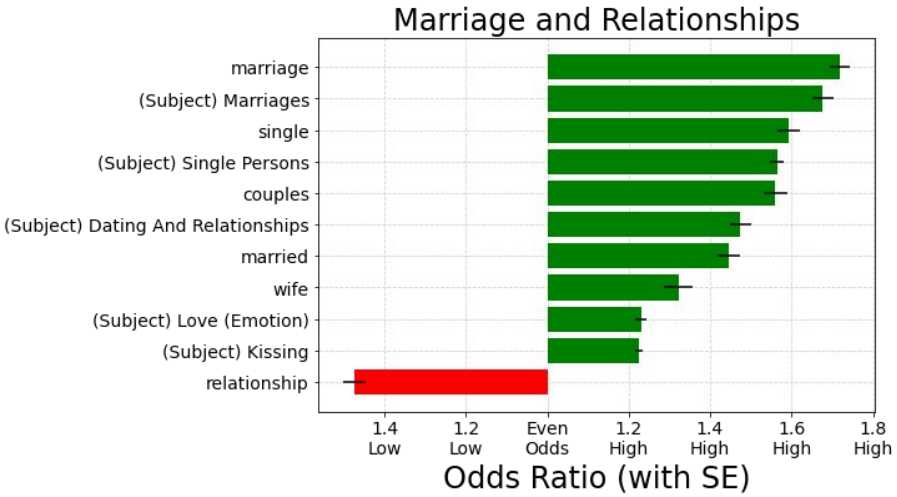


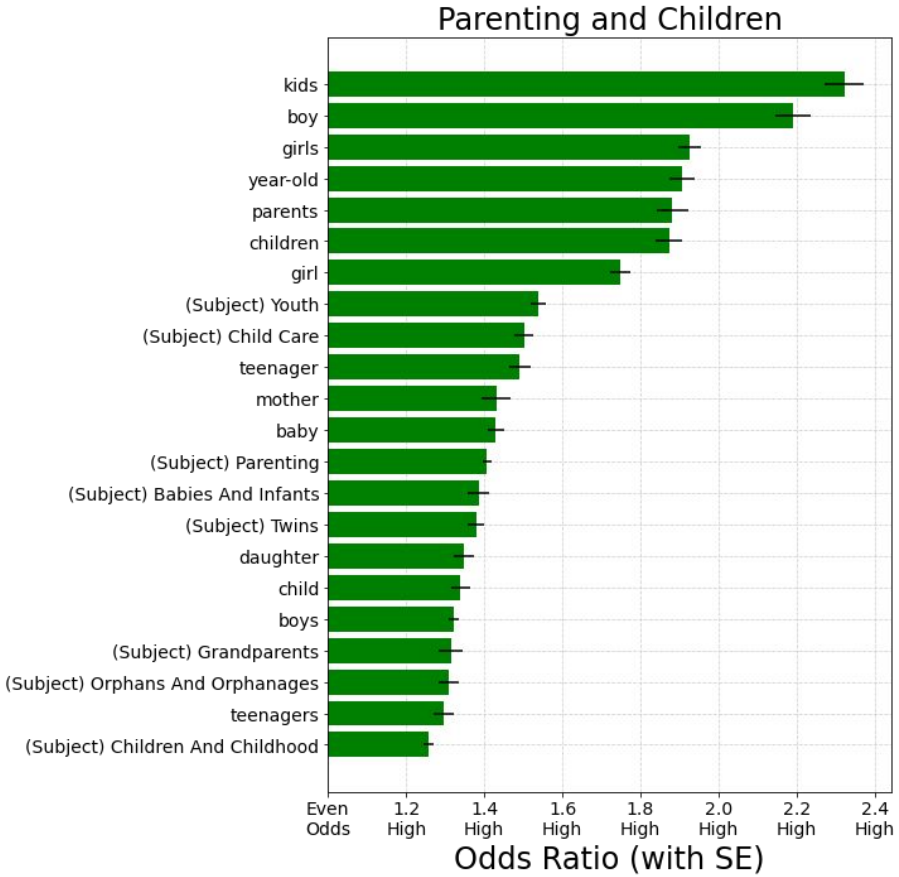
Beauty and Self Care; Exercise



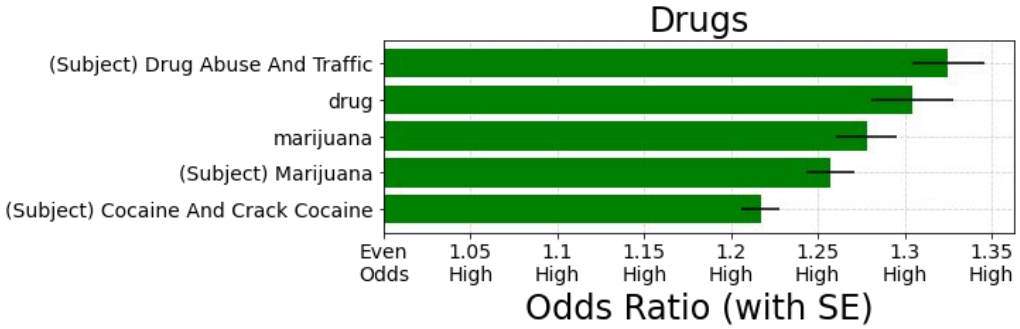


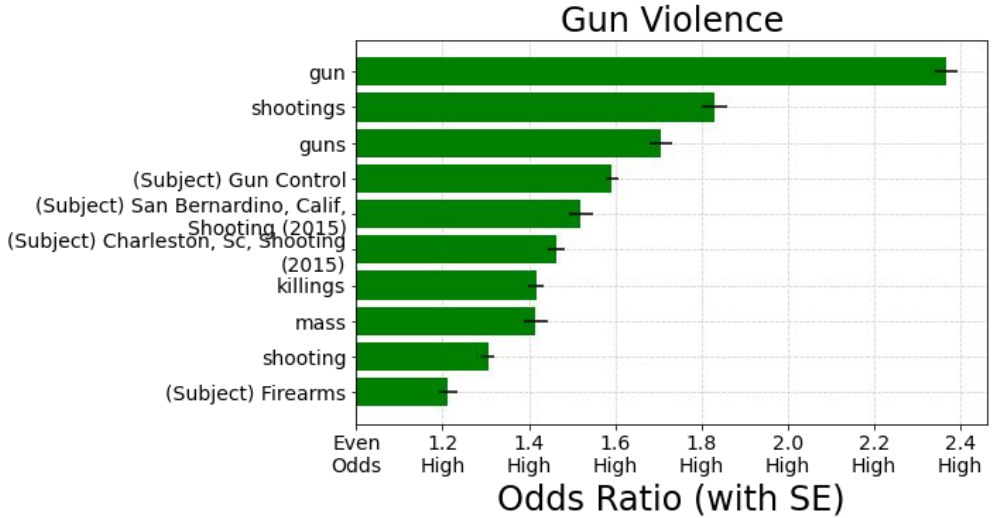
Parenting and Children; Marriage and Relationships





Drugs; Gun Violence

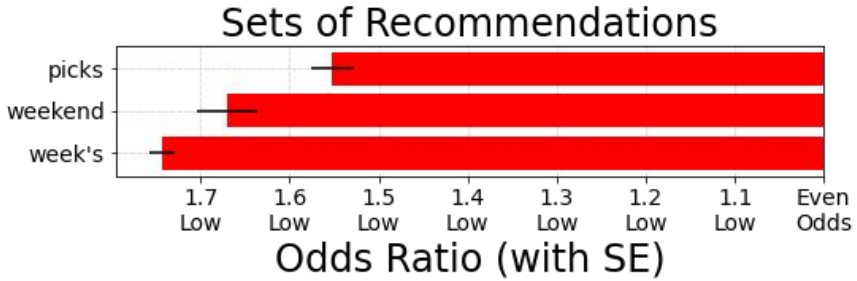


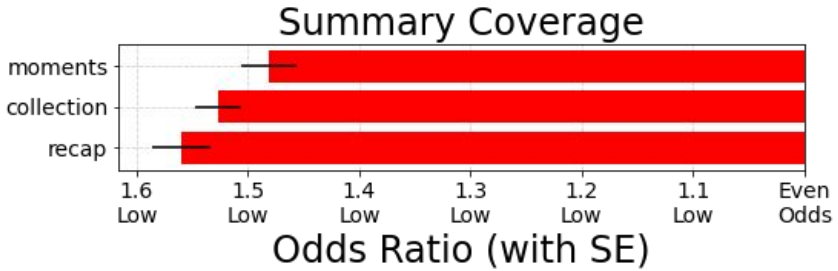


Appendix II - Less Engaging Topics

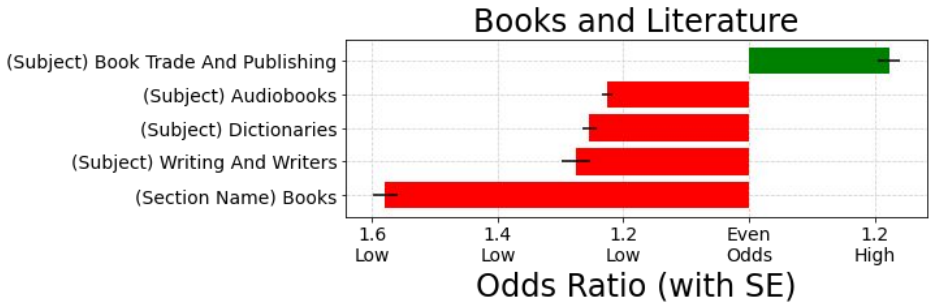
Words that solicit Direct Reader Engagement

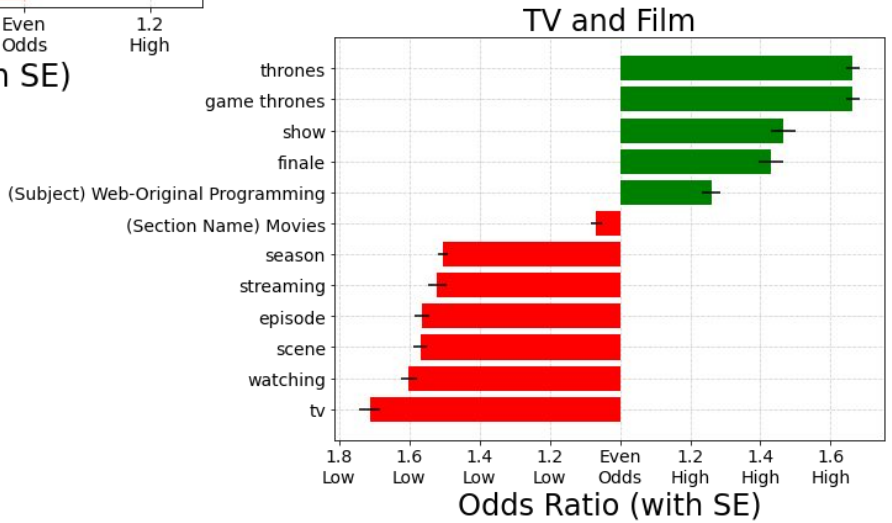
Recommendations and Summary Coverage



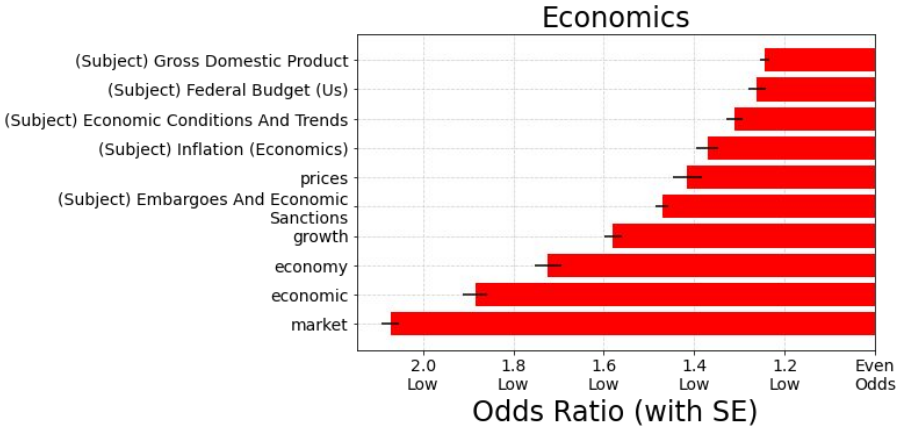


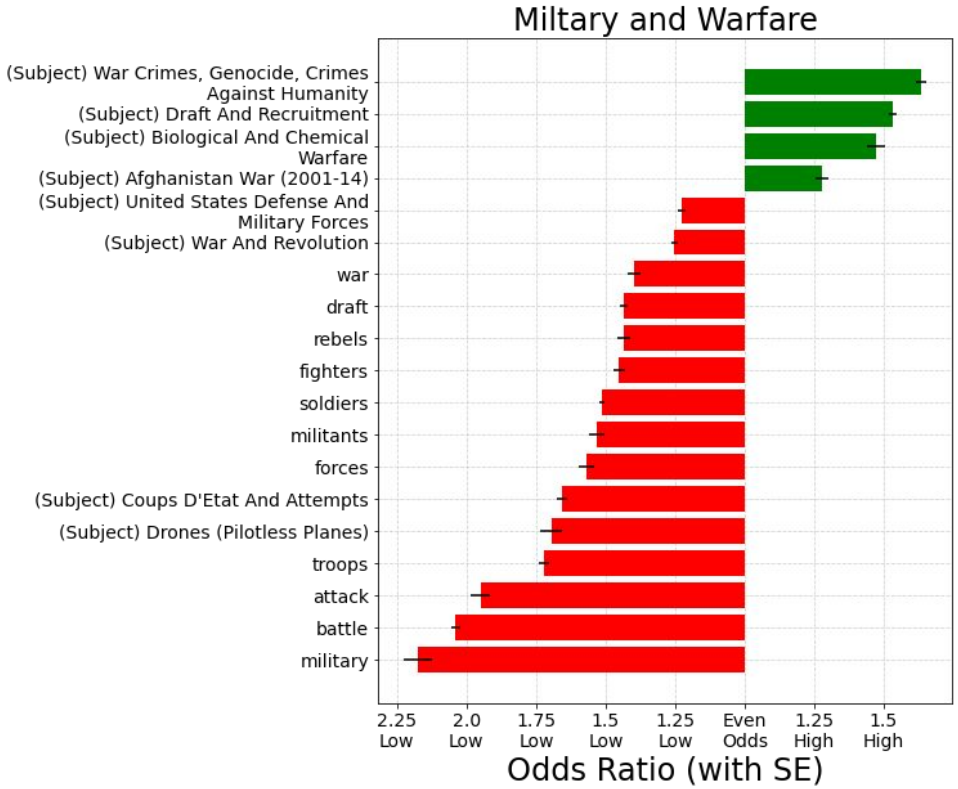
Books, TV and Film
(except very popular shows such as Game of Thrones)



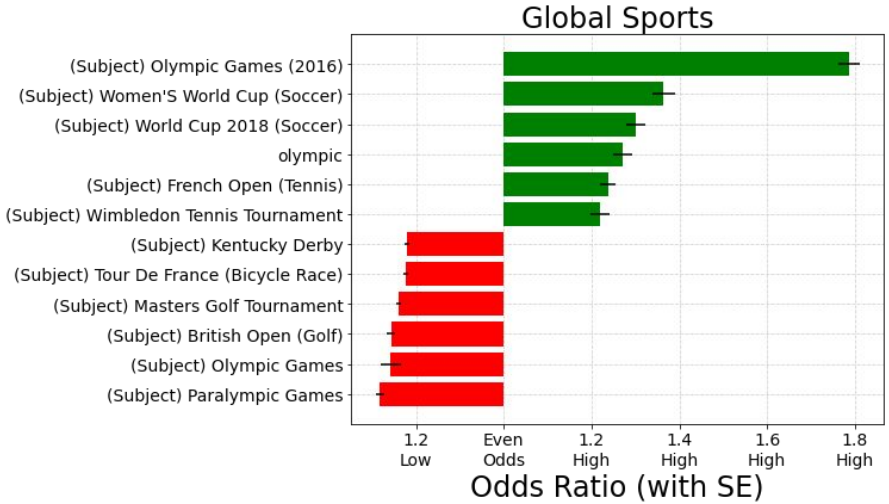


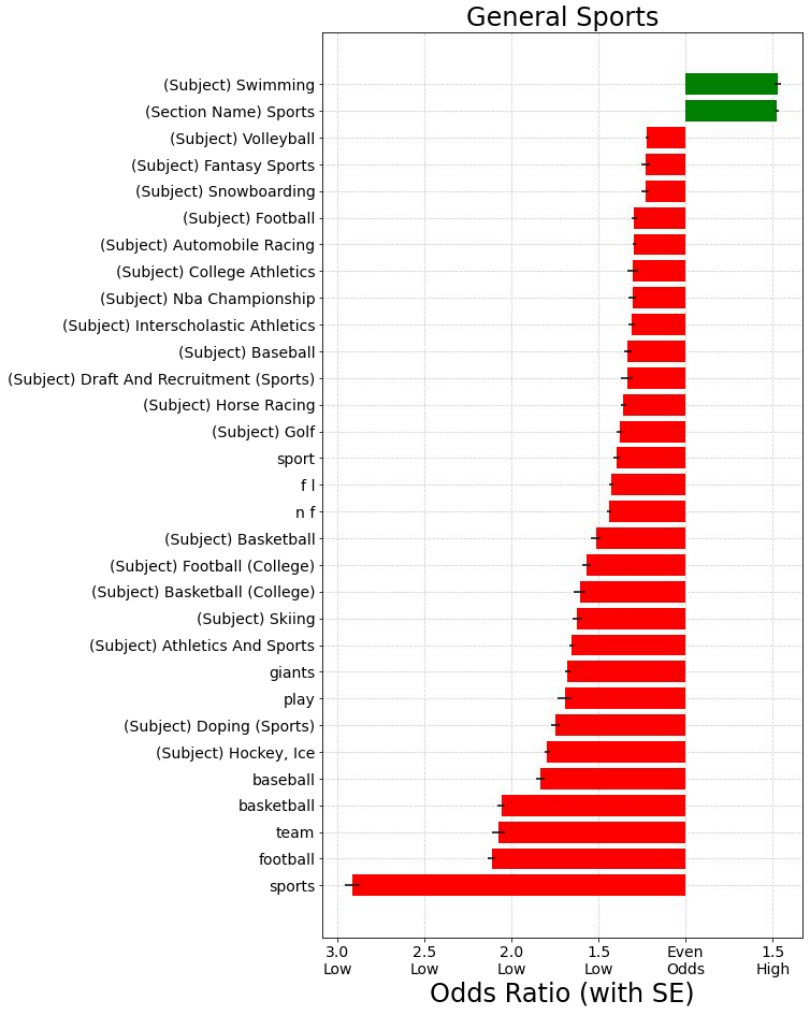
Economics;
Military and Warfare



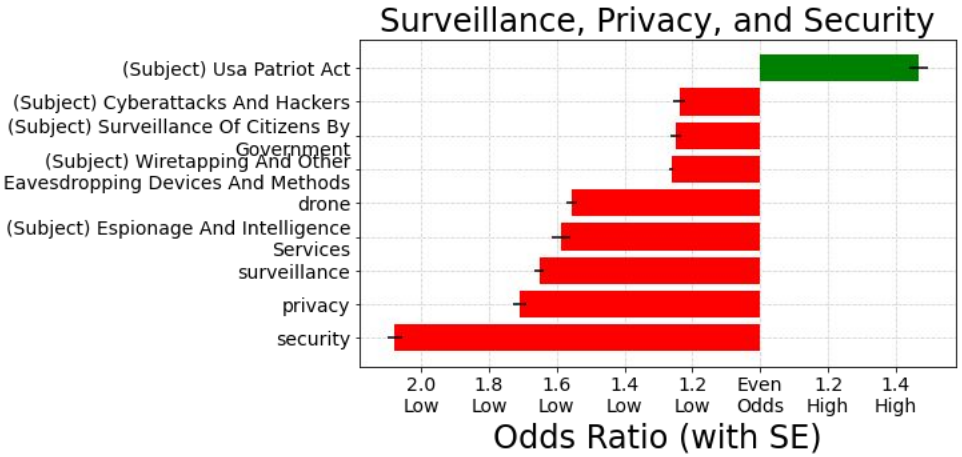


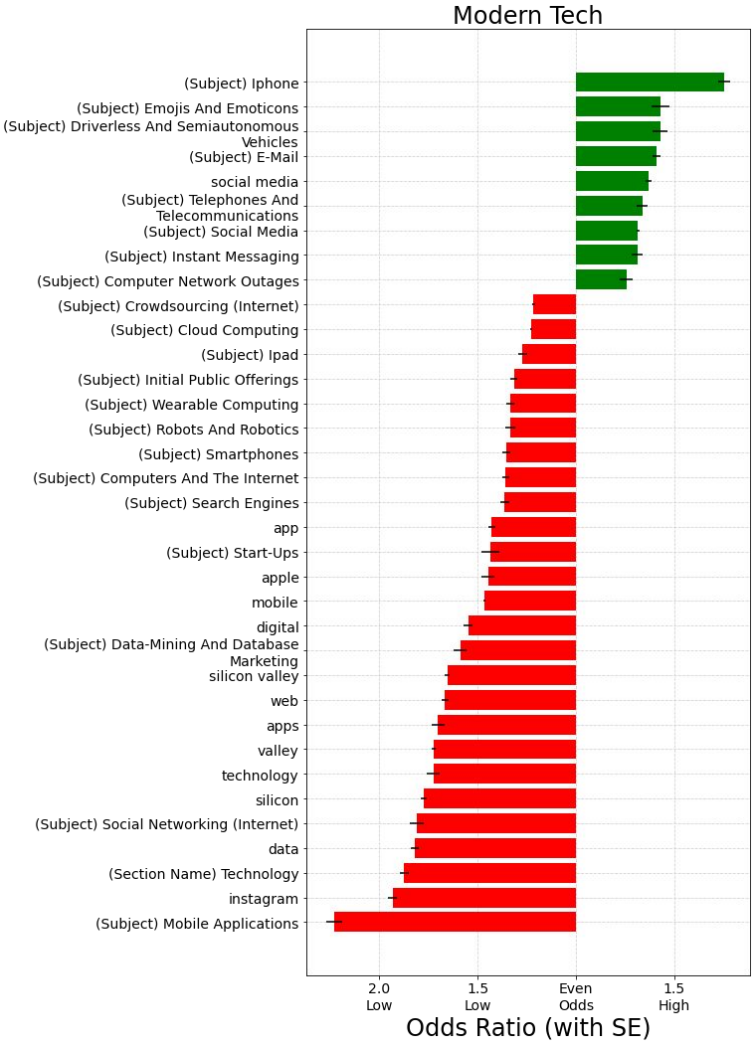
General Sports and Some Global Sports



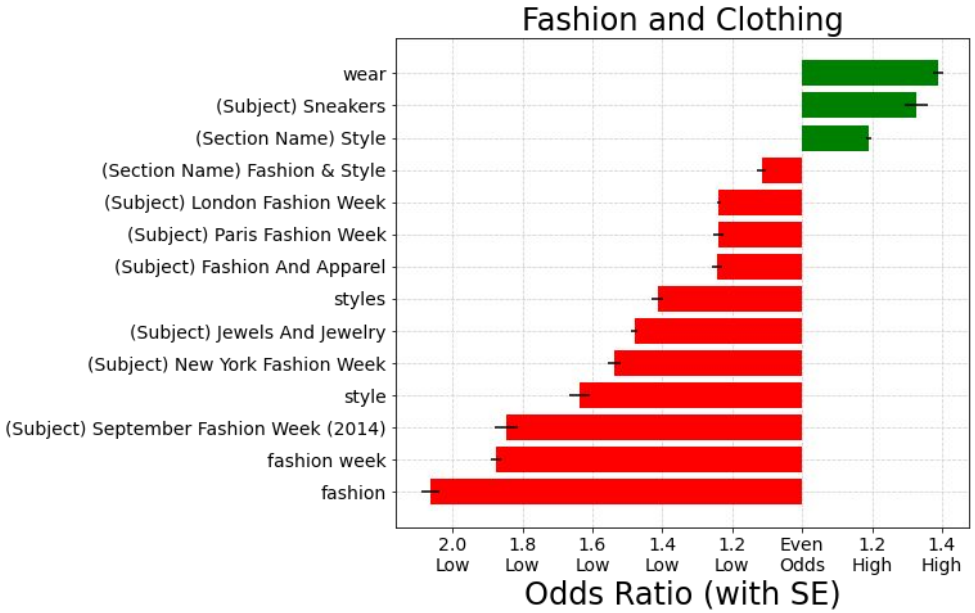


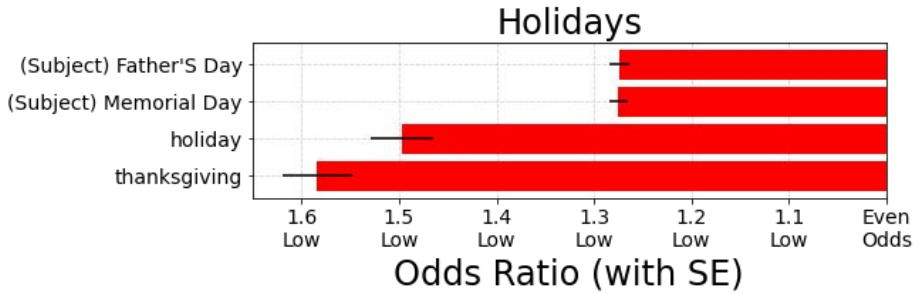
Surveillance, Privacy and Security; Modern Technology





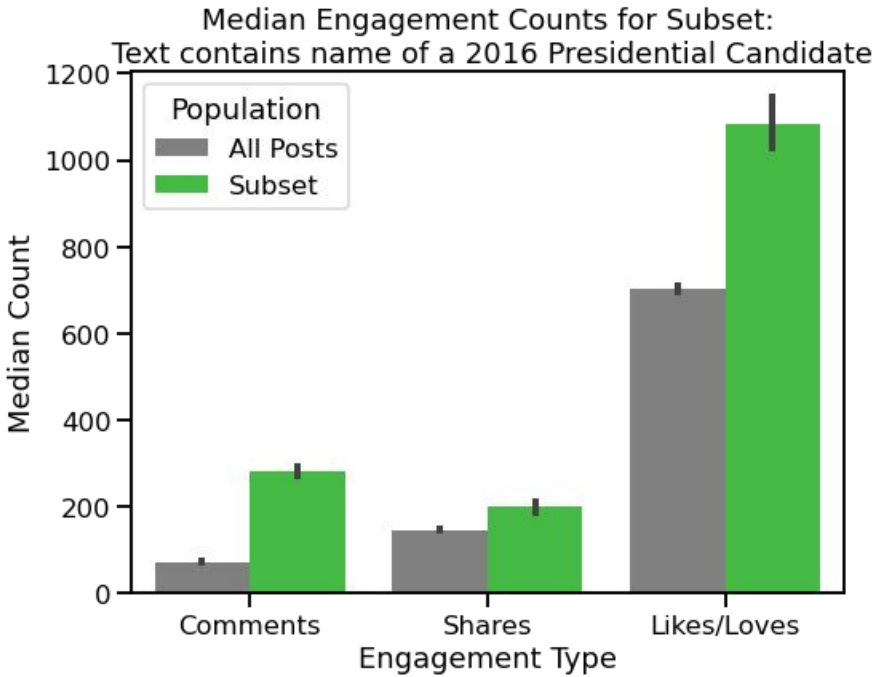
Fashion and Clothing; Holidays

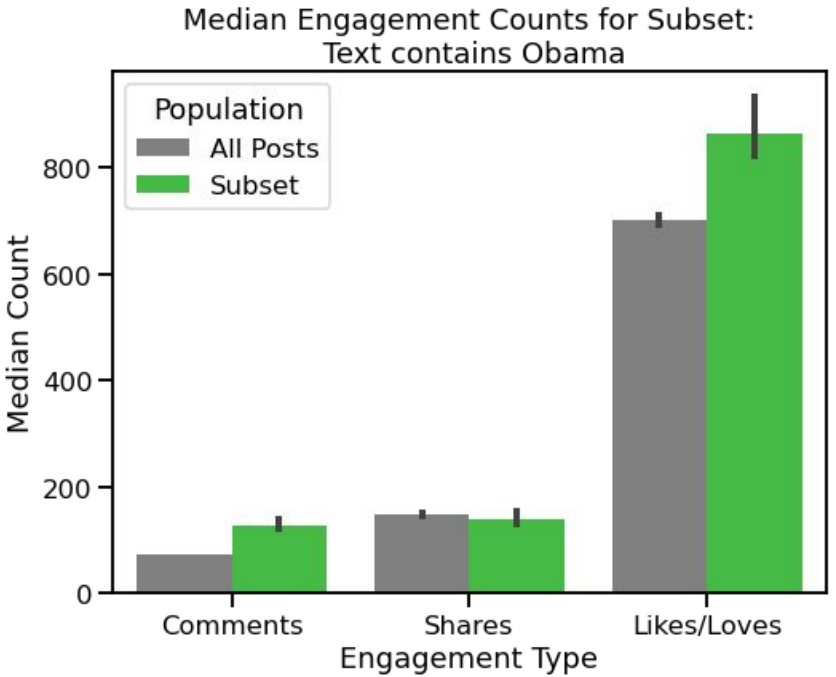




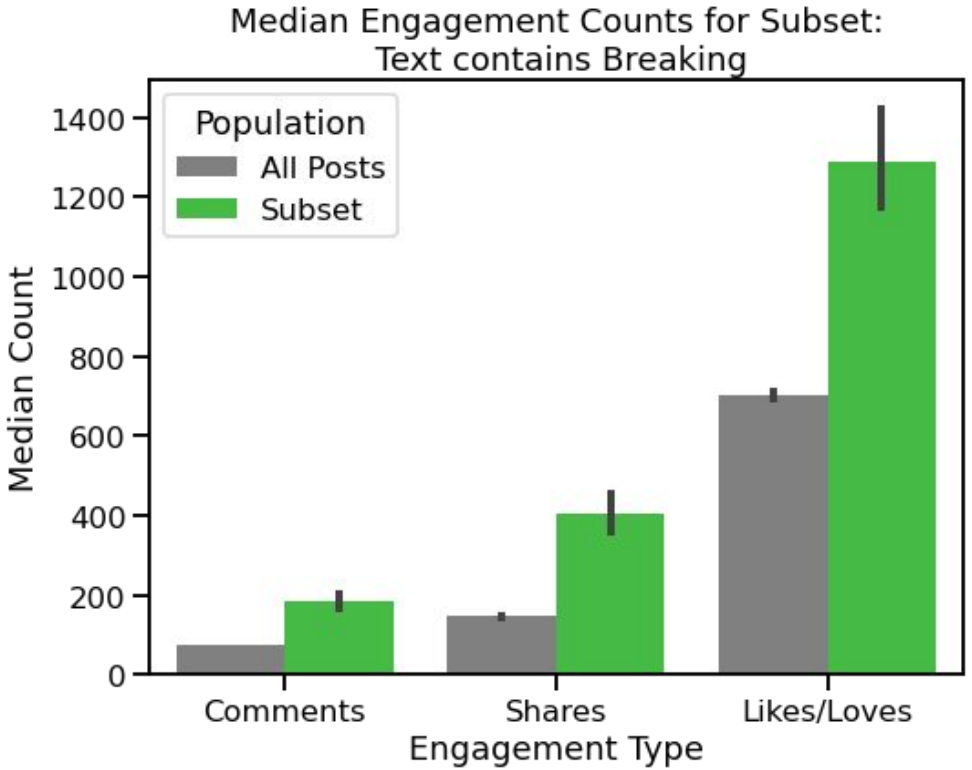
Appendix III - Separate Engagement Metrics

More Engaging - Presidential Topics

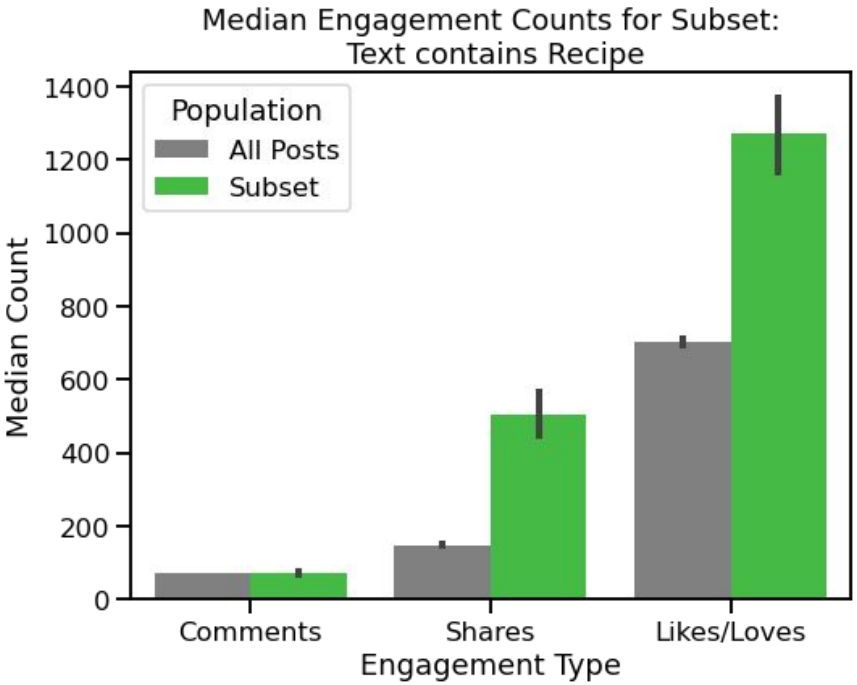


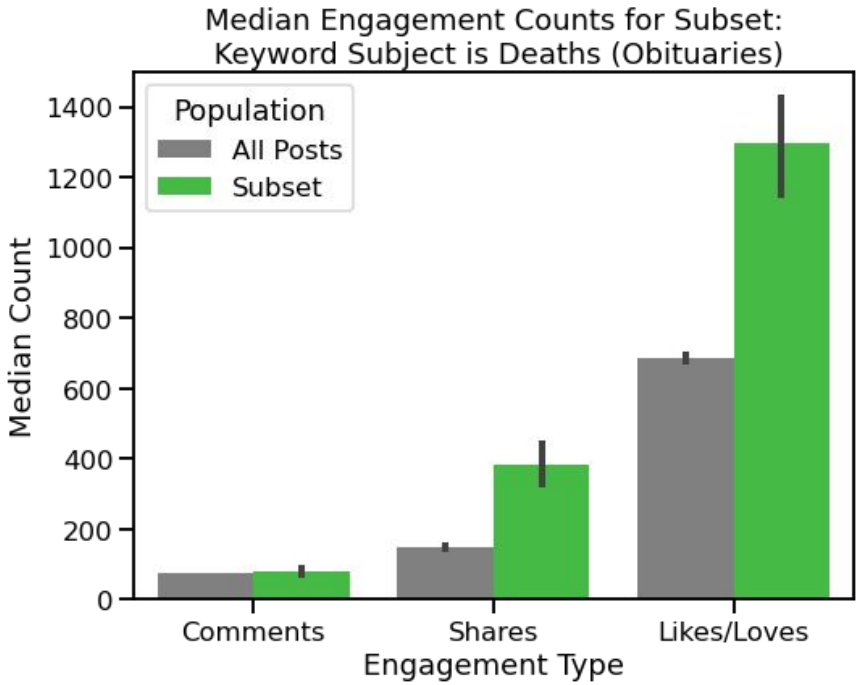


More Engaging - Breaking News

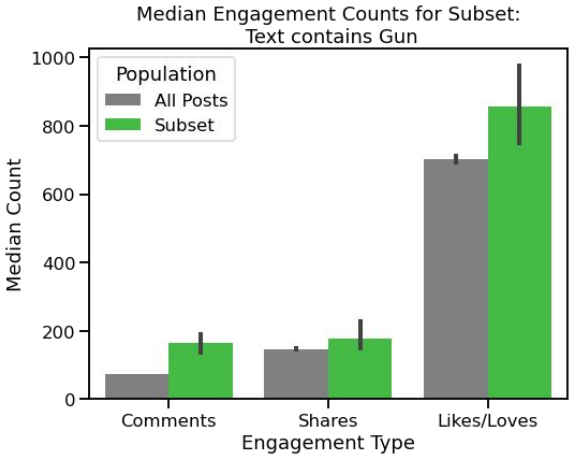


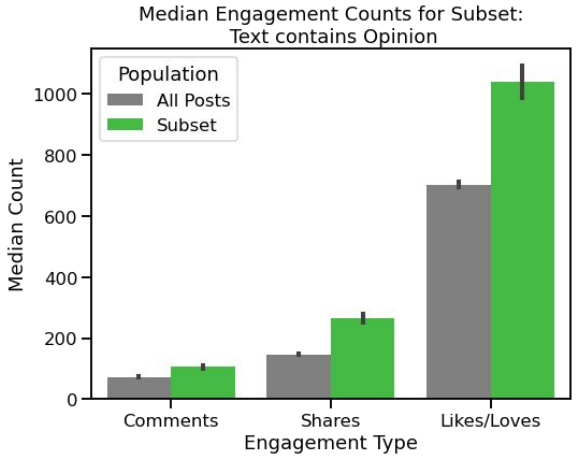
More Engaging - Recipes and Obituaries

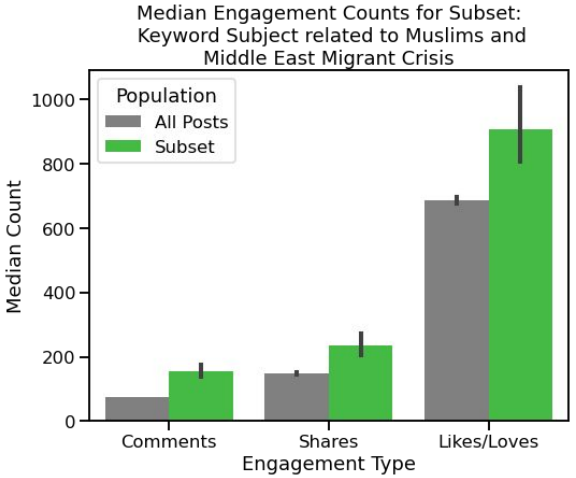




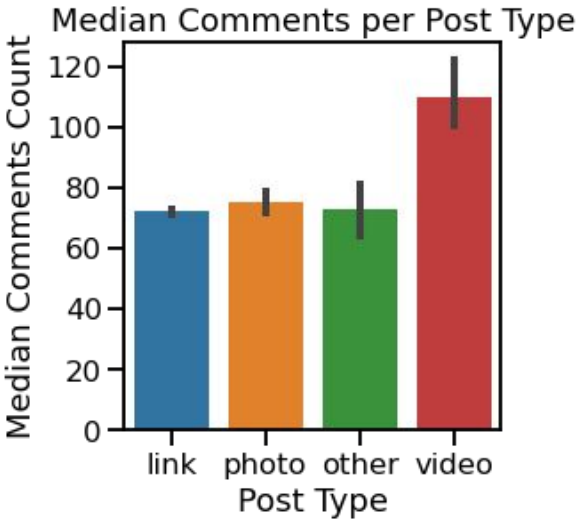
More Engaging - Controversial Topics

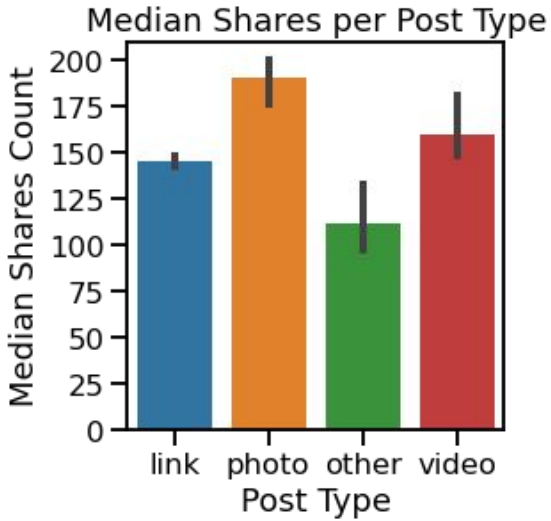


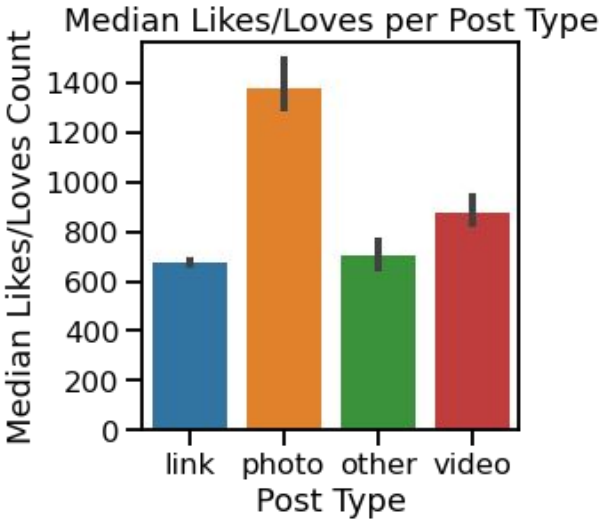




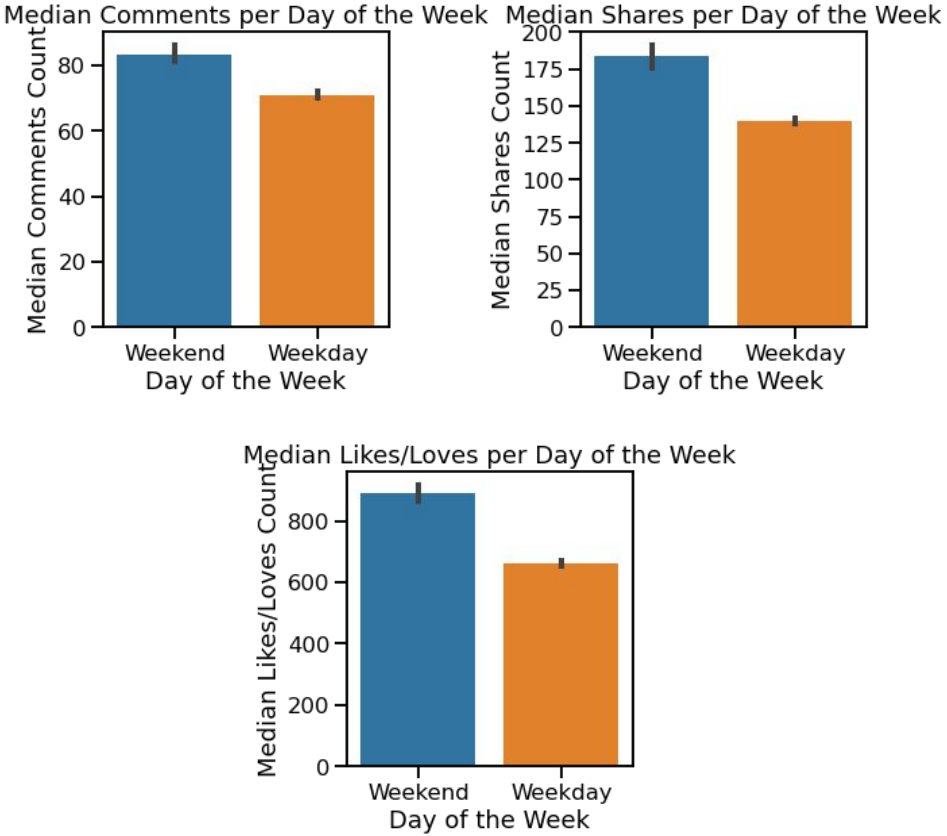
More Engaging - Post Type

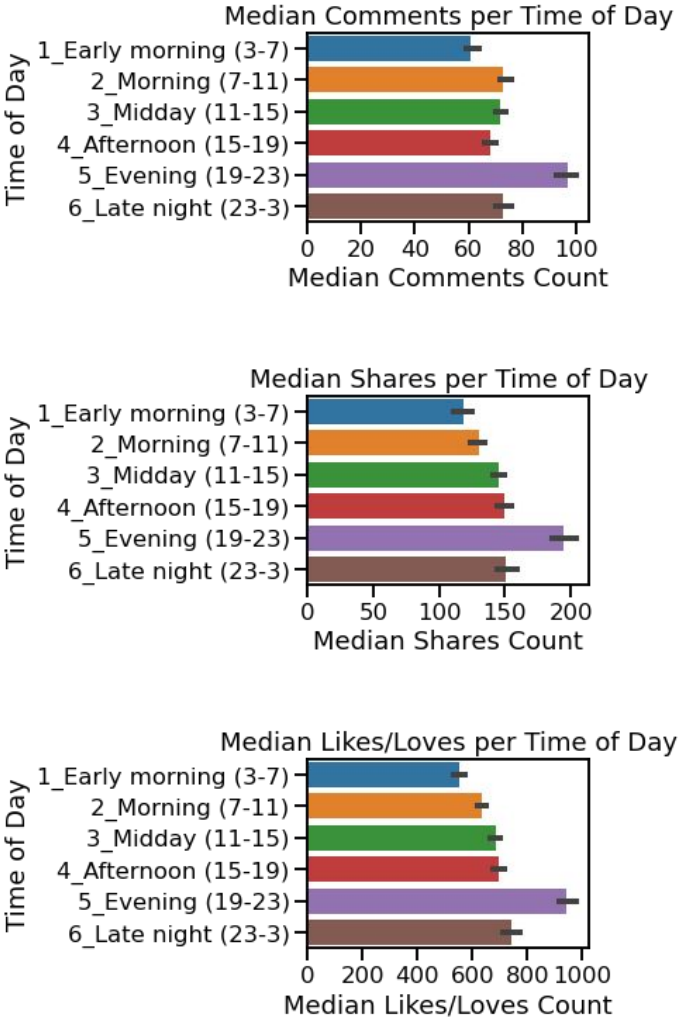




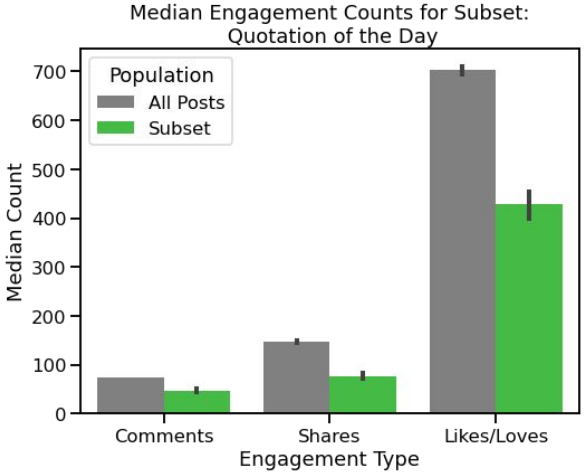


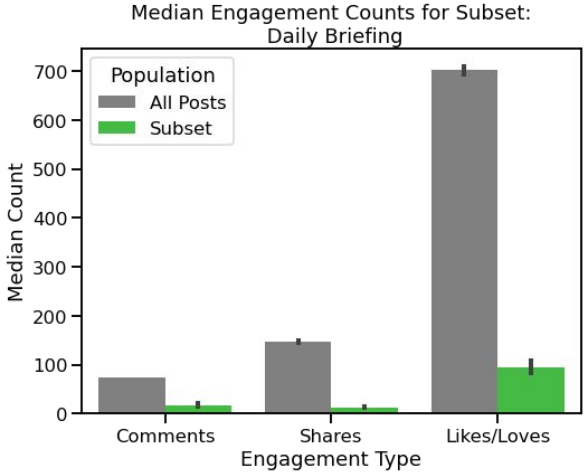
More Engaging - Post Timing

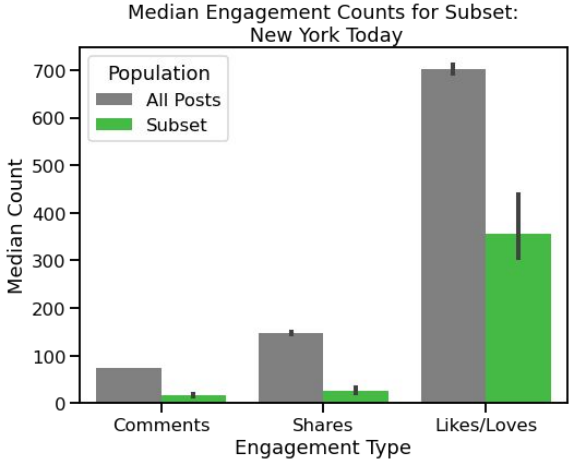
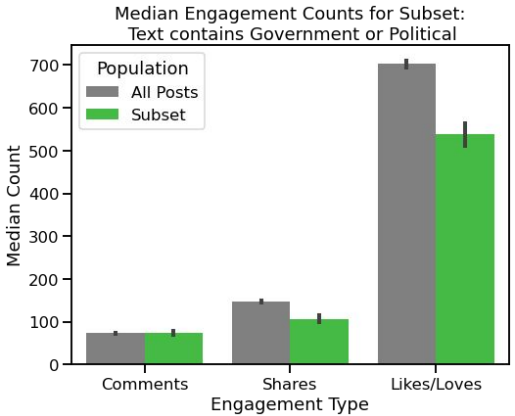
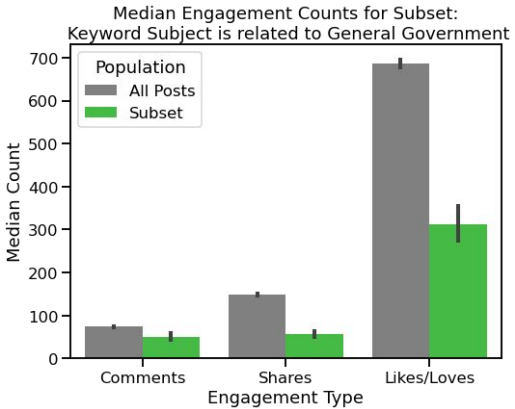
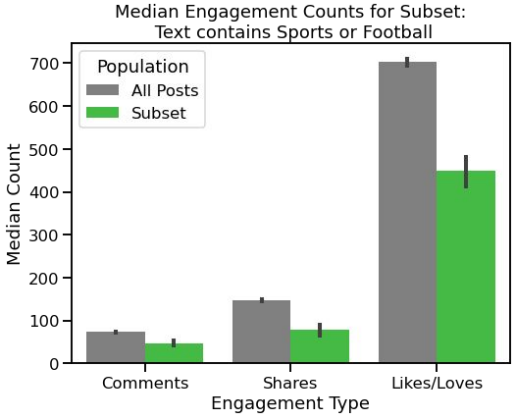
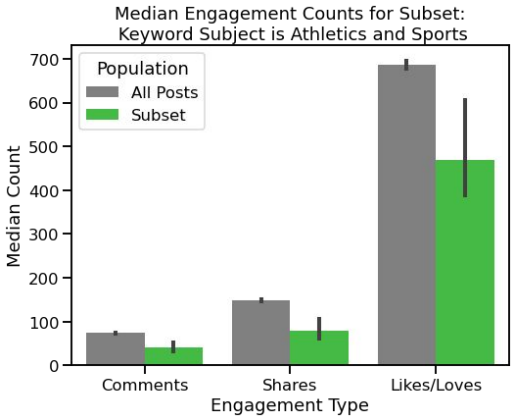




Less Engaging - Recurring Features







Less Engaging - General Politics and General Sports