#Activism

Analyzing How Triggering and Activism Events Impact Hashtag Activism for Social Movements

#team: jwhang3, tnguye72, kkwan, lwilson7

#Introduction

Hashtag activism has become an increasingly common way to fuel social movements. We wanted to explore where real-life events and social media come together by analyzing how events impact hashtag interaction on Twitter.

#Hypothesis

We believe that **triggering events** (shootings, scandals, etc) **will cause a greater increase in hashtag usage than activism events** (marches, protests).

#Data

Movements

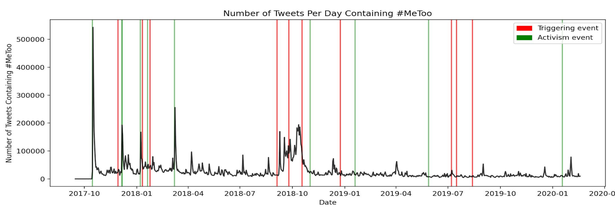
We selected three social movements: **MeToo, Black Lives Matter, and Gun Violence**.

Tweets

We used the counts endpoint of the Twitter Full Archive Search API to collect the **number of tweets per day** that contain one of the related hashtags.

Events

Our Events dataset is comprised of **20 events** (10 triggering and 10 activism) **for each movement.**



A sample of our initial plotting, where the vertical lines represent days when events took place. See full graphs here.

#Data Cleaning

After visualizing our data, we noticed random peaks on days without events. We discovered that other large, unrelated events used the same hashtag as the Gun Violence movement. For example, Holocaust Day uses the hashtag #NeverAgain causing unrelated peaks in our data. We cleaned these by replacing these days with the tweet count from the previous day.

#Methodology

For each event, we calculated the percent change of tweet counts between the day before and the day of. For the control groups, we calculated percent change for 10 randomly selected days not within one day of any event.

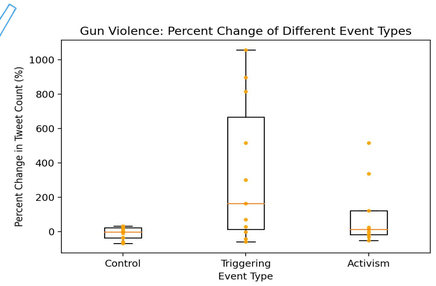
For each social movement, we conducted 3 t-tests:

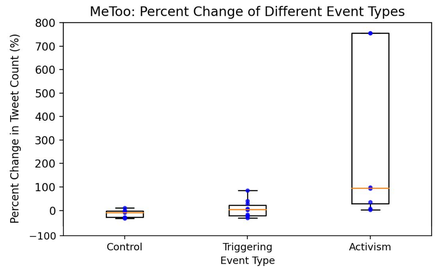
- Triggering vs. activism events
- Triggering events vs. control days
- Activism events vs. control days

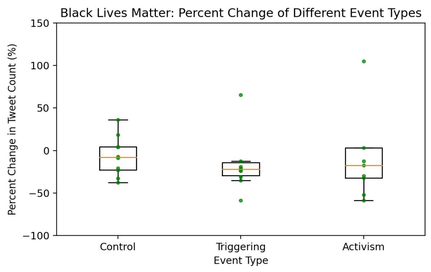
#Results & Visualization

Resulting P-values

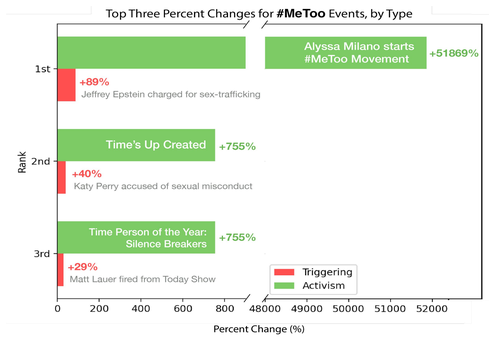
Movement	Triggering vs Control	Activism vs Control	Triggering vs Activism
MeToo	0.1091	0.2581	0.2595
BLM	0.3603	0.3644	0.5734
GV	**0.0152**	0.0952	0.1291

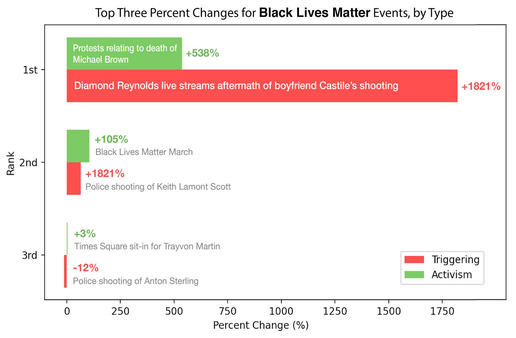


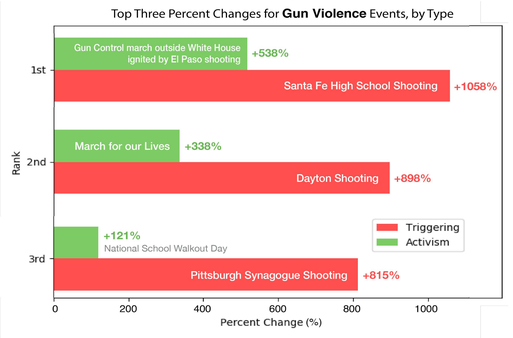


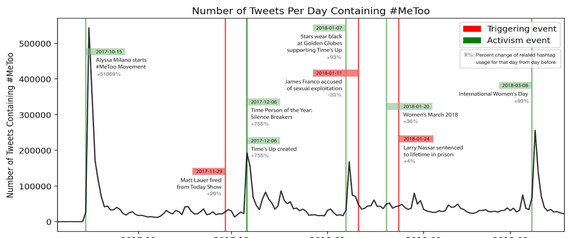


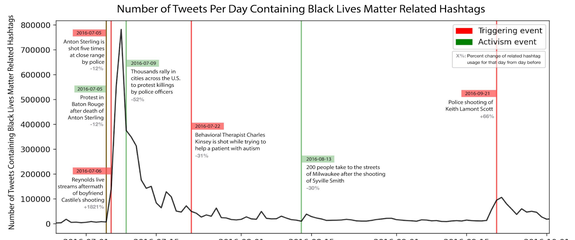
#A Closer Look

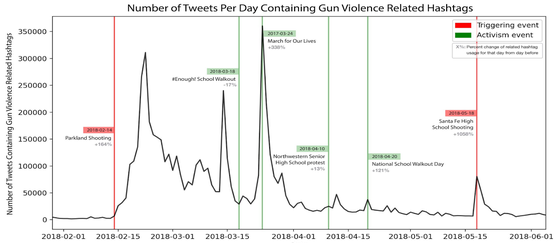












#Limitations

- Bias in the manual selection of events and movements
- Lack of access to private tweets
- The percent change in the number of tweets cannot be solely attributed to a single event.
  - For example, #BlackLivesMatter experienced a large increase in tweet counts on 2016-07-05, and there was another smaller event on 2016-07-09. Because the first event was so large, its effects may have been a factor in the negative percent change for the second event.
- The minimal impacts of the numerous smaller events may have overshadowed the great impact of the fewer larger events on tweet counts.

#Conclusion

At a significance level of 0.05, we **fail to reject the null hypothesis**, which is that there is no difference between the percentage change before and after an event based on event type (triggering vs. activism). There is not enough evidence to conclude that there is a significant difference in the impact of triggering vs. activism events in regards to tweet count.

We found that there is only a significant difference between percent changes for days with triggering events vs. days without events for the Gun Violence movement. Therefore, our results do not indicate that events actually have a significant impact on tweet counts in most cases.