

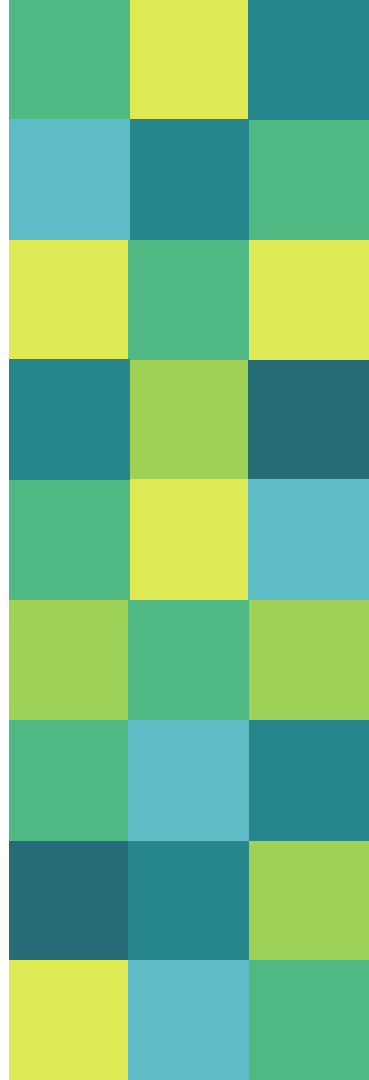


# Florida Twitter Election Data

By Elle, Gia, Jair, and Henry

# Our Objective

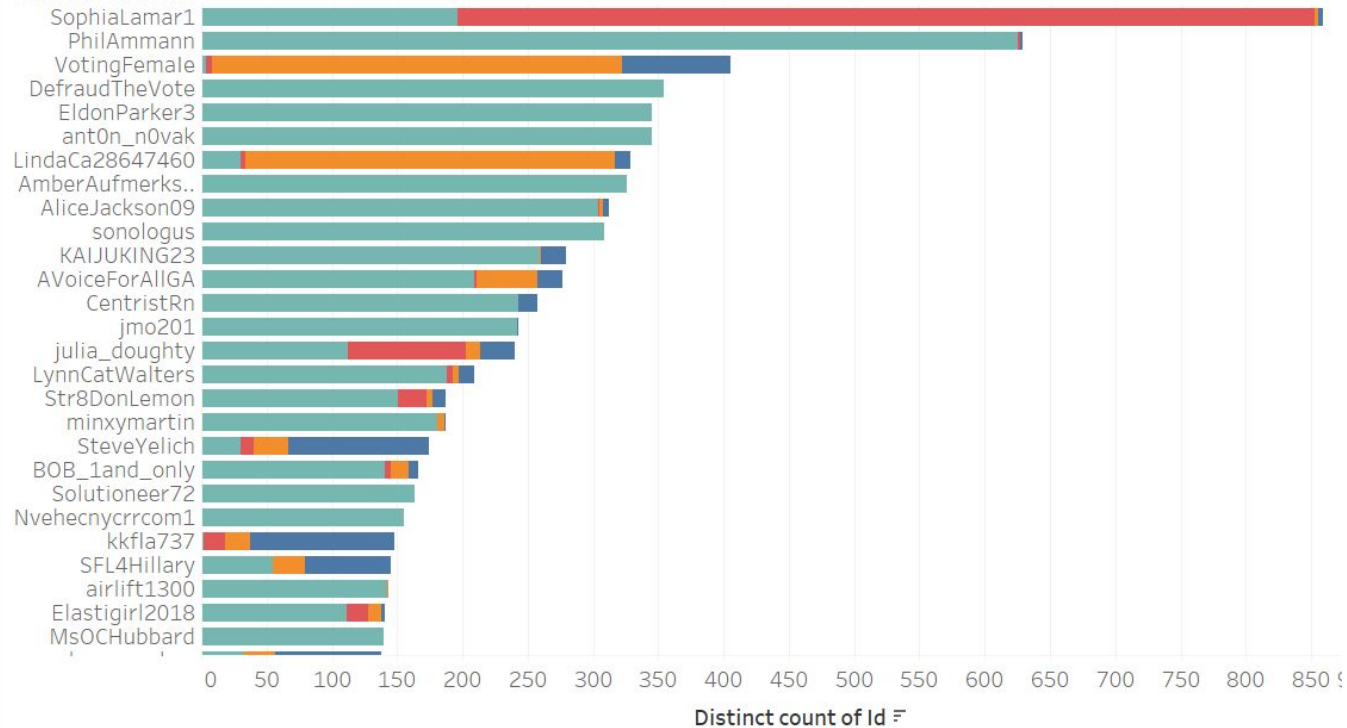
We wanted to determine whether a user's verification status impacted how many original tweets they made about the Florida election. This was interesting because it tells us whether it's famous people who are guiding the conversation or average users.



# Our Starting Point Visualization

## User activity

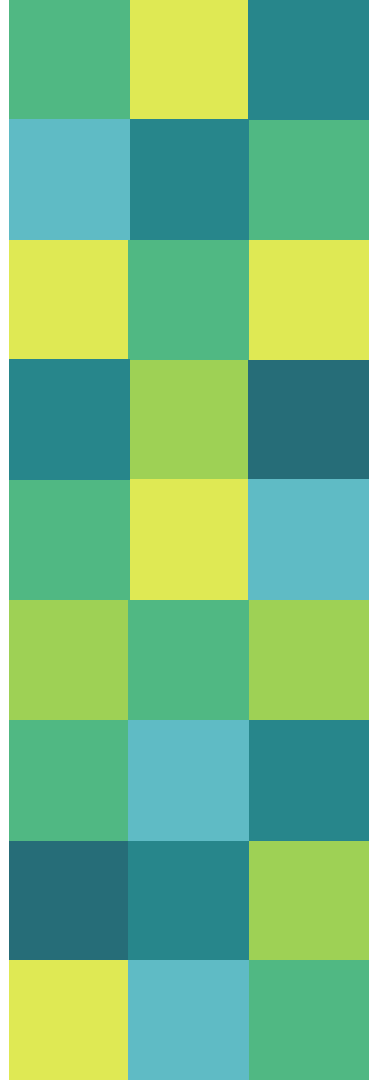
### User Screen Name



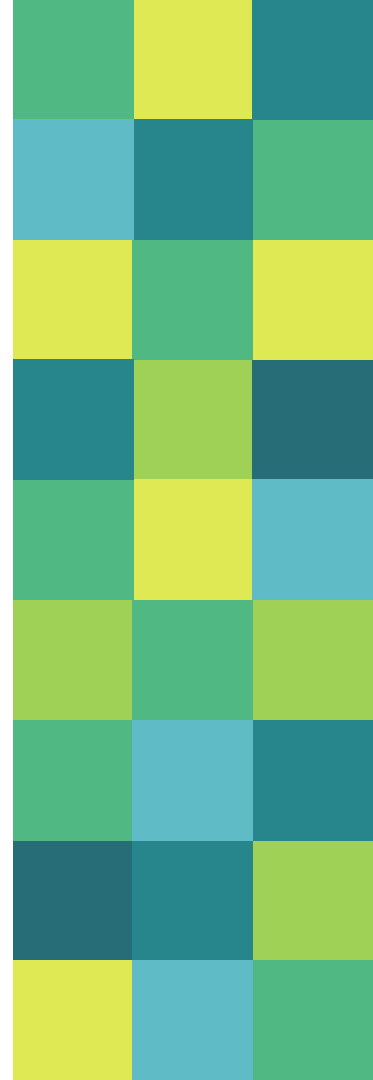
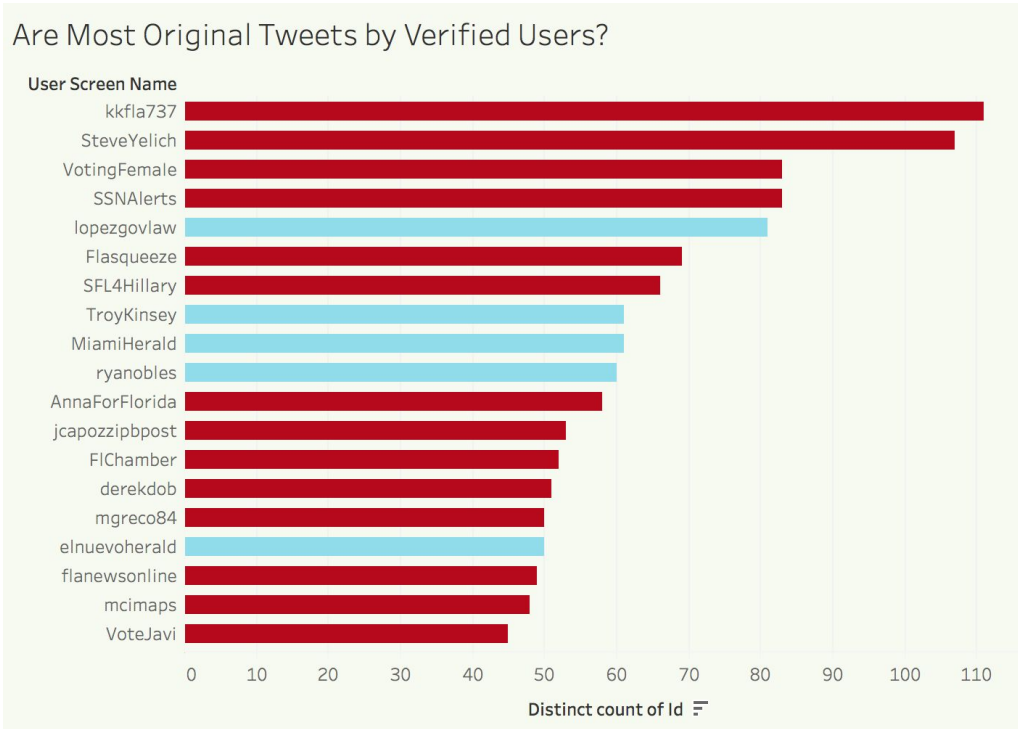
# Questions This Raised

How many retweets, replies, original tweets, and quotes does each unique user in this dataset make?

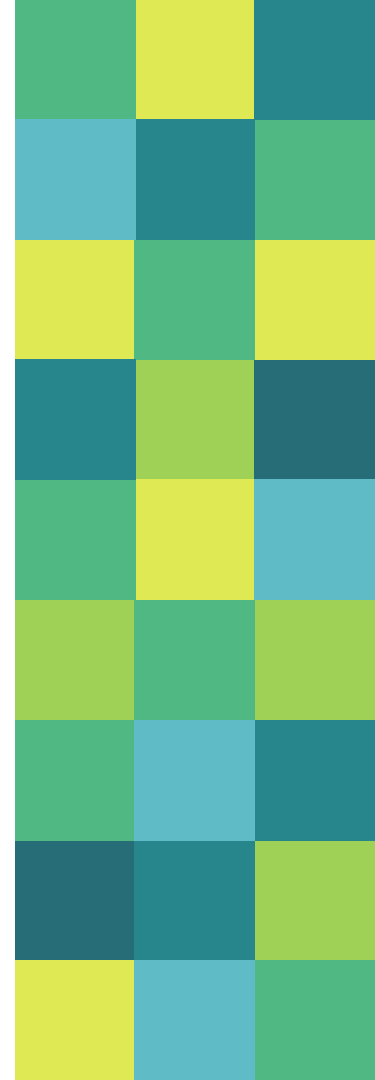
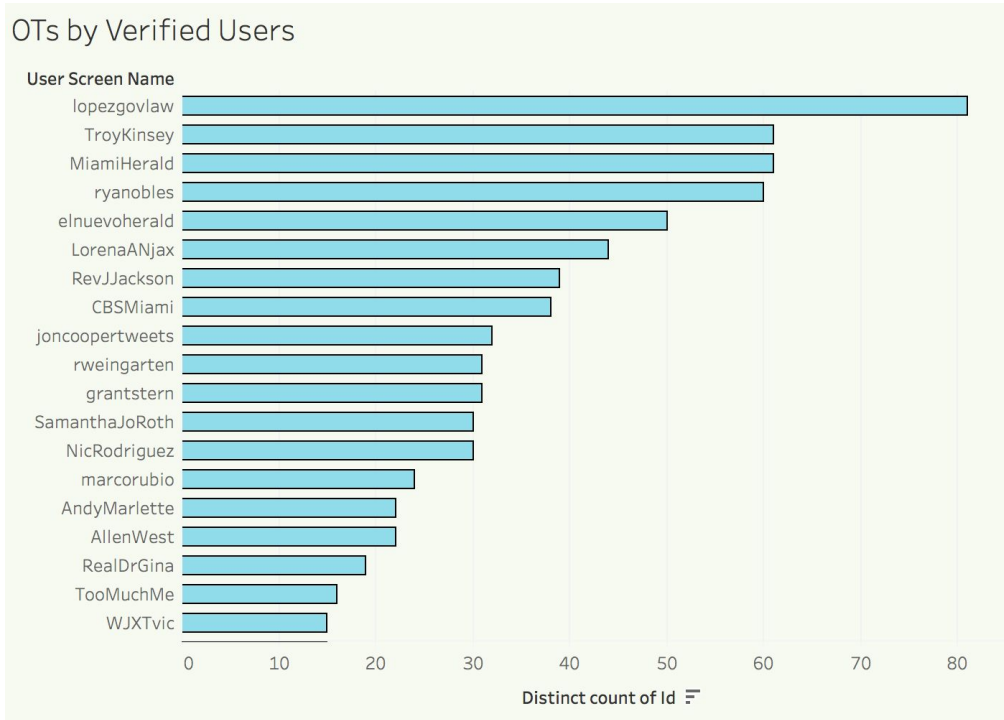
But we wanted to know a little more about whether being “verified” on Twitter actually impacts engagement with other users....



# Our Original Visualization



# A closer look: Verified vs. Unverified



# Lopezgovlaw + TroyKinsey

**Jorge Luis Lopez Esq** @lopezgovlaw · 6 Nov 2018  
#cancerresearch RT @BPFranksShow: #CancerResearch

Olympic Gold Medalist Scott Hamilton talks about the upcoming Scott Hamilton and Friends on Ice on... [twitter.com/web/status/1...](https://twitter.com/web/status/1...)

**Jorge Luis Lopez Esq** @lopezgovlaw · 6 Nov 2018  
#ChildhoodCancer RT @WinwithClass: Kids NEED our help. Let's join @AlexsLemonade in fighting the great fight against childhood cancer. #ChildhoodCancer

**Jorge Luis Lopez Esq** @lopezgovlaw · 6 Nov 2018  
#ChildhoodCancer RT @ATCBenin: A true example of character

#Taekwondo #NEWS #ChildhoodCancer



**Troy Kinsey** @TroyKinsey · 31 Oct 2018  
@AndrewGillum rallies in Destin #figov



0:19 4,108 views

31 45 120

Andrew Gillum Retweeted

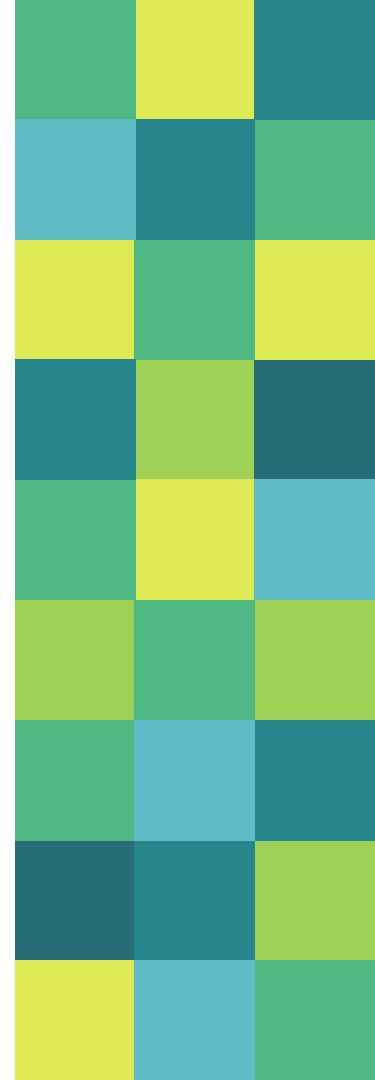
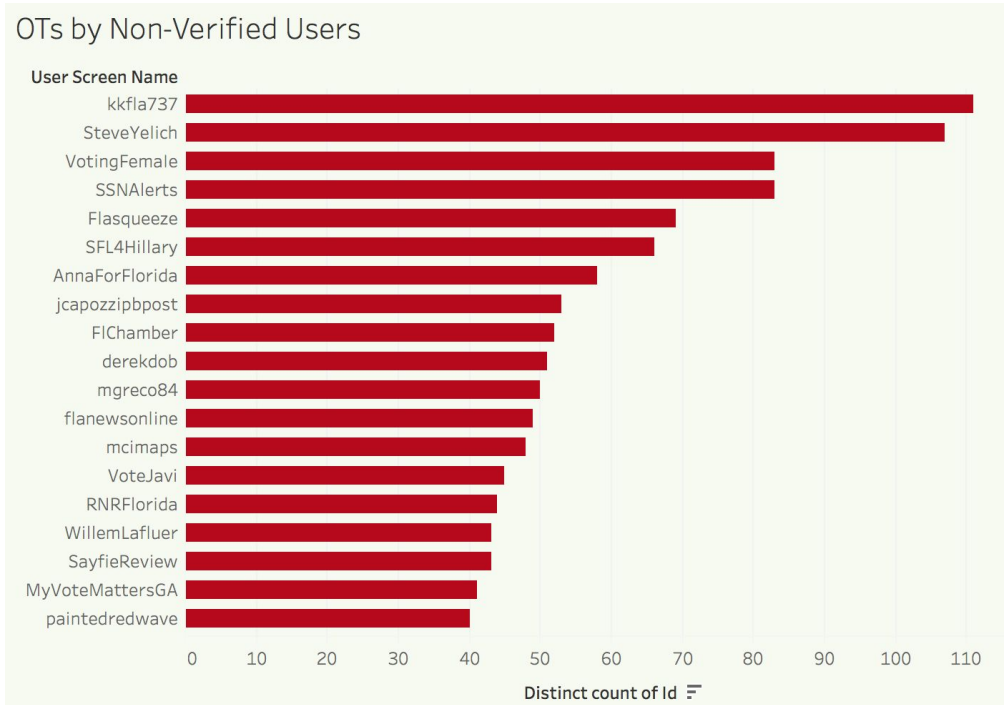
**Troy Kinsey** @TroyKinsey · 3 Nov 2018  
@AndrewGillum tells a West Palm Beach crowd one victim of yesterday's #tallahassee shooting sustained six gunshot wounds. "It underscores what we have to do just three days from now when we send an unapologetic message to the NRA that their time is up." #figov



60 595 2.2K



# A closer look: Verified vs. Unverified





# Kkfla737 + SteveYelich

 **Kartik Krishnaiyer** @kkfla737 · 6 Nov 2018  
Replying to @grumpybirdieS  
No the neighboring district  
1 1

 **Kartik Krishnaiyer** @kkfla737 · 6 Nov 2018  
As #ElectionDay turns into #ElectionNight I keep thinking of 2004...  
2 1 1

 **Kartik Krishnaiyer** @kkfla737 · 6 Nov 2018  
Proud to say we've had our highest traffic day in @FL\_Political\_Sq history surpassing #ElectionDay 2014 and the day after Election Day 2014, our previous best days. Actually shattering that number. Thanks @DaNumbersGuy & @nashville\_brook . #FlaPol #Sayfie  
1 3 10

 **Kartik Krishnaiyer** @kkfla737 · 6 Nov 2018  
I'm thinking Trump had a negative impact in Lee and Escambia where GOP turnout seems to have flatlined today in the counties he visited. However, GOP looks strong in other cored Republican counties. #ElectionDay #FlaPol #Sayfie  
3 1 2

 **Kartik Krishnaiyer** @kkfla737 · 6 Nov 2018  
63.06% turnout thus far in Brevard County which in theory is very good news for the GOP per @DaNumbersGuy - that's BREVARD not BROWARD for those outside the state that get confused :)! #ElectionDay #FlaPol #Sayfie  
1 1 3

 **Steve Yelich** @SteveYelich · 6 Nov 2018  
Andrew Gillum Sends Message to Trump and DeSantis: "The politics of hatred and separation have come to an end" #BringItHome #FLDeservesBetter #ElectionDay

 **Andrew Gillum Sends Message to Trump and DeSa...**  
With a crowd of supporters cheering him on, Andrew Gillum cast his ballot for governor of Florida this morning at Good Shepherd Catholic Church in Tallahassee, FL. [thegrio.com](http://thegrio.com)

1 1 1

 **Steve Yelich** @SteveYelich · 6 Nov 2018  
DeSantis puts words in Gillum's mouth that he didn't say in Florida governor race [politifact.com/florida/statem...](http://politifact.com/florida/statem...) via @PolitiFactFL

 **What Andrew Gillum did or didn't say about police**  
Republican Ron DeSantis and GOP groups have painted Democrat Andrew Gillum as anti-police. In an interview with Sean Hannity on Oct. 30, 2018, DeSantis doubled... [politifact.com](http://politifact.com)

1 1 1

 **Steve Yelich** @SteveYelich · 6 Nov 2018  
Replying to @MSNBC  
If anybody needs to be reminded of the stark difference between @AndrewGillum and @RonDeSantisFL, and why Gillum should be Governor and DeSantis should not, just listen to what each of them said as they exited the

# Questions this visualization raised

Most verified users tweeted multiple times but a number of notable verified users (Bernie Sanders, Cory Booker, Amy Klobuchar, and others) only tweeted once. Why were they not as engaged?

What does verification really even mean? Is there any reason we should place more importance on verified tweets versus non-verified tweets?

What explains the difference in # of tweets between verified and non-verified users?



# Conclusions

- Verification does not appear to have a causal relationship with engagement of tweets



# Republican vs. Democrat Twitter Influence



Cassandra Stecker, Chloe Hubbe, Nico Bodkin, Mikaela Johnson

# Objective

Question: Which party had the biggest presence on Twitter?

Objective: To sort the User Descriptions by Party Affiliation and compare who is being retweeted more over time

# Procedure

- Starting point visualization: User Visibility
- Questions Raised:
  - Does one party exert more influence (on Twitter) than another?
  - Do people tend to interact with Twitter users of their party or of other parties?
- One question we focused in on
  - Which party is being retweeted more over time?

# Hypothesis

- Democrats would have retweeted more during this time of the contested election because of the dispute which could tilt the election in their favor.

# Procedure for New Visualization

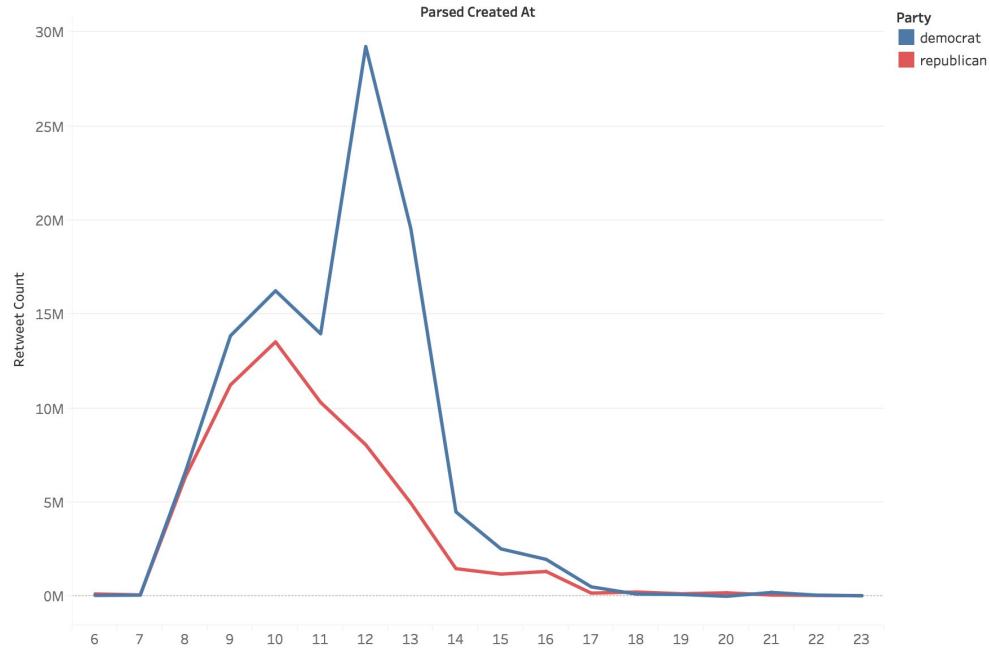
- We used a formula to sort through user descriptions based on who included the word “republican” or “democrat” in their bio. Then we separated them into two graphs; looking at how many retweets over time republicans and democrats received

*This new visualization showed that*

Democrats and Republicans both had a lot of retweets; however, their influence appeared on different days. We believe this change over time coincides with the dispute over the election. Democrats started receiving a lot more retweets in the midst of the recount for the gubernatorial race. Therefore, our original hypothesis was correct, but only for a certain time period, not during the entire election season. These two visualizations appear to display the momentum of each party.



## Republican vs. Democrat Retweet Counts over time

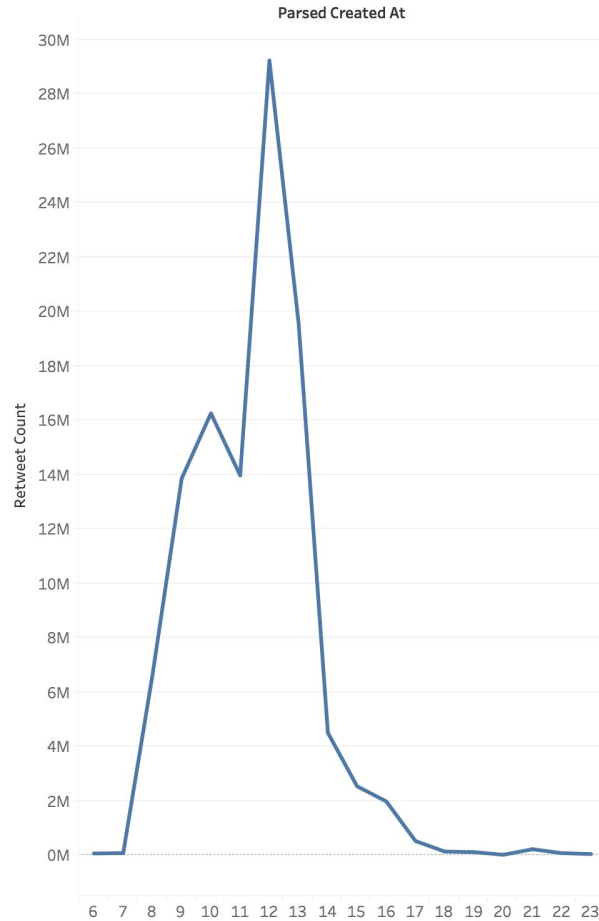


The trend of sum of Retweet Count for Parsed Created At Day. Color shows details about Party. The view is filtered on Party, which keeps democrat and republican.

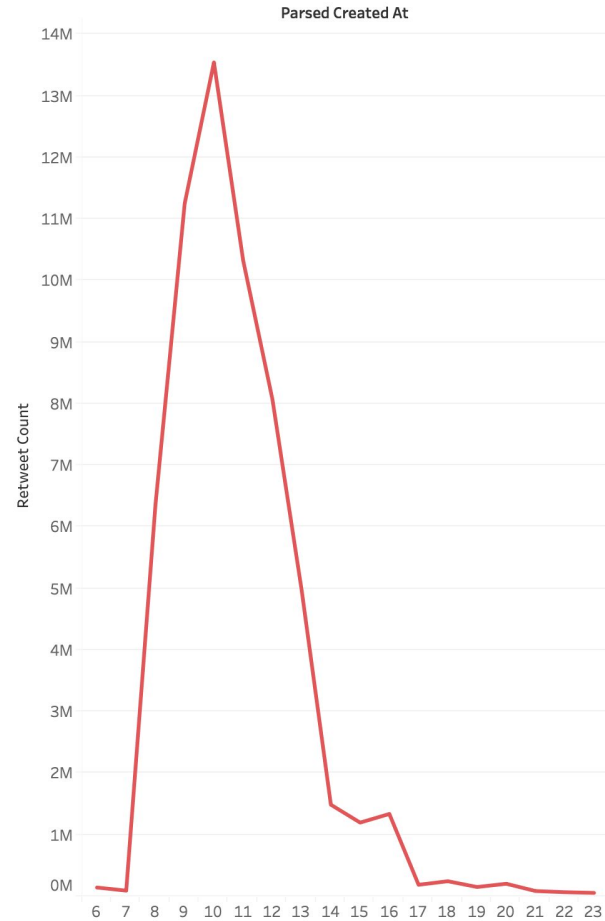
## Number of tweets by affiliation



Democrat Retweet Counts over time



Republican Retweet Counts over time



# Granular Examination of Individual Tweets

It would be interesting to see how confident the discourse is of each party throughout the election dispute. Perhaps Republicans started getting more indignant, Democrats started being more accusatory, etc...

# Reflection

- This shows how much certain parties are retweeting tweets in general.
- In the future, it would be interesting to know how many retweets each individual is receiving.
- The answer was what we expected in the sense that democrats received a lot more retweets during the period of #CountEveryVote. However, one of the largest issues with our comparison was the difference in sample size. Far more people in this data set included the description “democrat” in their bio than the description of “republican,” so these graphs do not include the retweets of individuals who align with a party, but simply do not have it in their description.

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# **Tweet or Nah: Changes in Twitter users' follower bases during Florida recount**

— Senita Portlock, Neb Tibebe, —  
Shom Tiwari, Irene Zhou

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## Research Question

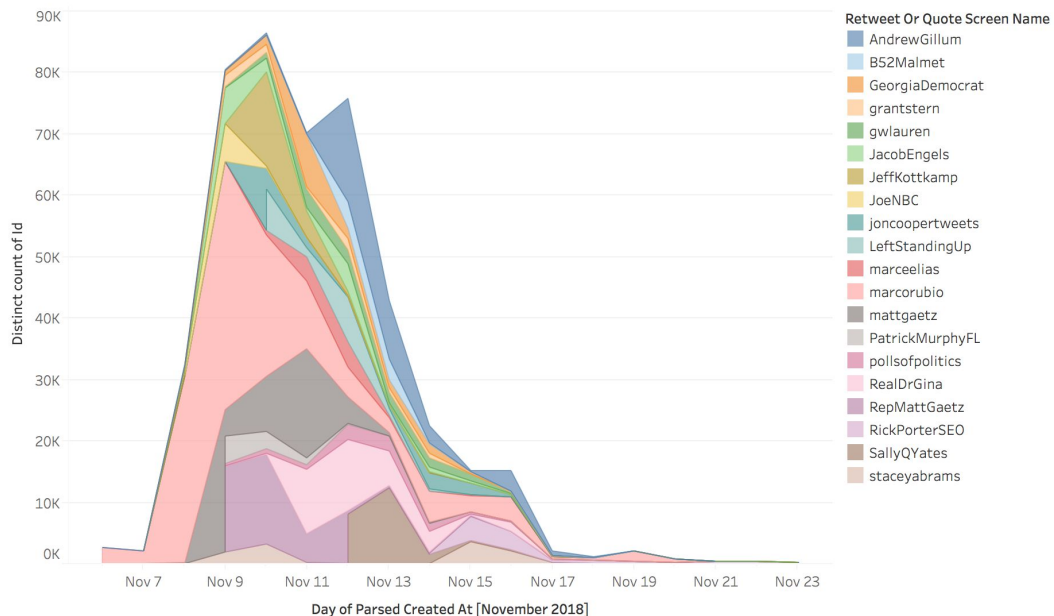
Which points in time during the Florida recount influenced the changes within sizes of user followers amongst the top 10 most retweeted or quoted users?

## Objective

Investigate if at any points during the Florida Recount, user activity had a particularly positive or negative impact on the number of followers amongst the top 10 most retweeted or quoted users

# Initial Visualization

User Visibility Per Day



The plot of distinct count of Id for Parsed Created At Day. Color shows details about Retweet Or Quote Screen Name. The view is filtered on Retweet Or Quote Screen Name, which keeps 20 of 7,540 members.

How do the sizes of individuals' followers change depending on their activity during the Florida Recount? Which point in time saw the most drastic changes? Do the numbers increase or decrease depending on the content of their tweets? What does this tell us about the political leanings of the Twitter space?



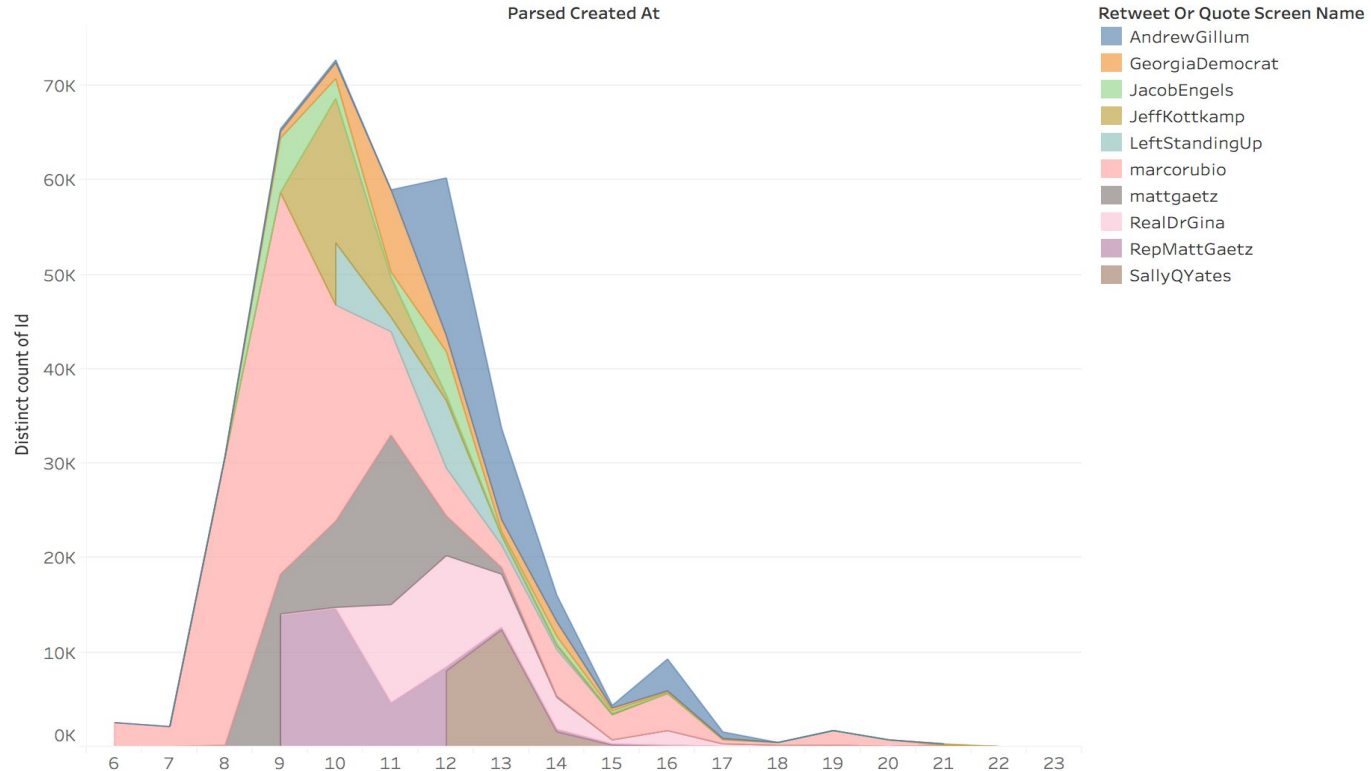
# Research Question → Hypothesis

Which points in time during the Florida recount influenced the changes within sizes of user followers amongst the most followed users?

We hypothesize that tweets sent on November 9th will have the greatest impact on the size of user followers because this is the day after the investigation was filed, leading major political figures and other users to tweet their stance on the recount, such as Gillum and Trump, who tweeted “Count every vote” and “FRAUD” respectively.

# New Visualization

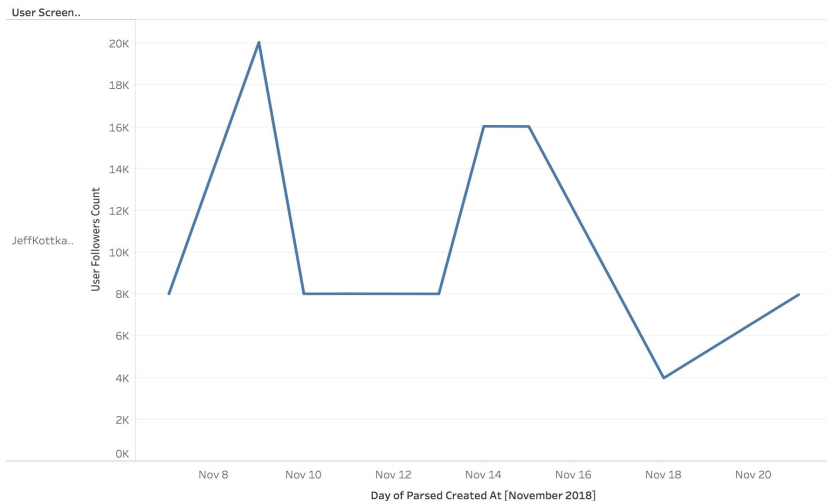
## User Visibility Per Day



Distinct count of Id for each Parsed Created At Day. Color shows details about Retweet Or Quote Screen Name. The view is filtered on Retweet Or Quote Screen Name, which keeps 10 of 14,146 members.

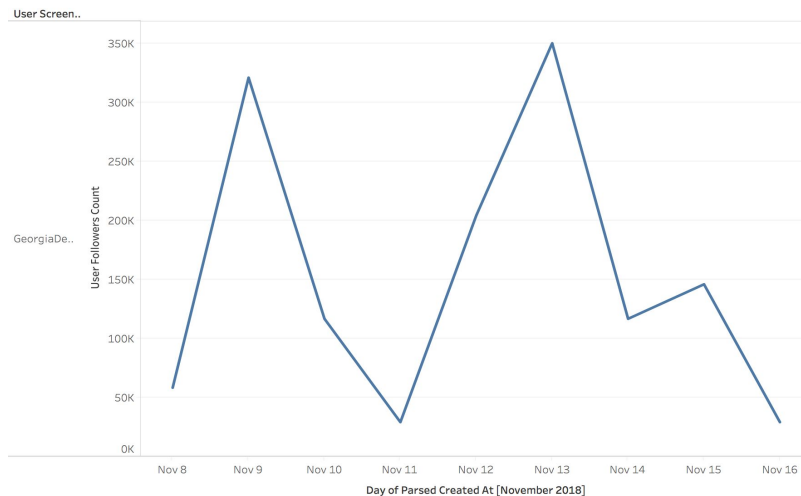
# Spikes on Nov. 9th

@JeffKottkamp Following Over Time

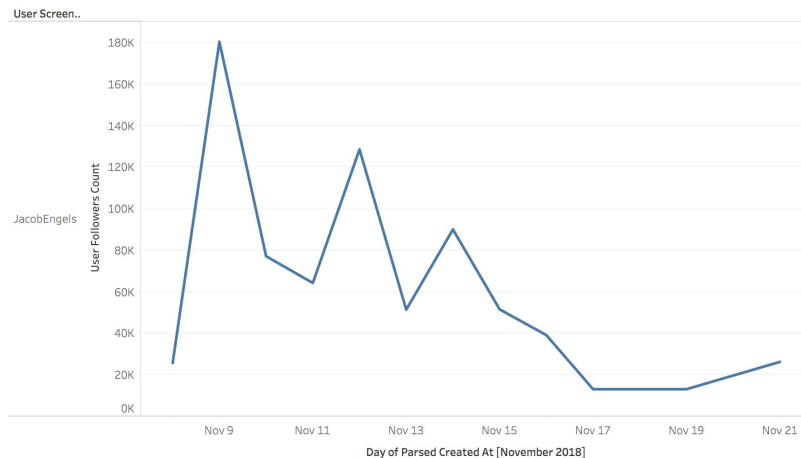


**@JeffKottkamp:** Former FL Lieutenant Governor  
**@GeorgiaDemocrat:** Democratic Party of Georgia  
**@JacobEngels:** Orlando-based right-wing blogger whose account was suspended in February for criticizing Islam

@GeorgiaDemocrat Following Over Time



@JacobEngels Following Over Time



# Spikes Nov. 8th, 10th, 11th, 12th

8th: **@MarcoRubio**: Republican Florida Senator

- Lawsuit filed

10th: **@MattGaetz**: Republican (FL-1)

- Recount announced

11th: **@RealDrGina**: Conservative Media Personality

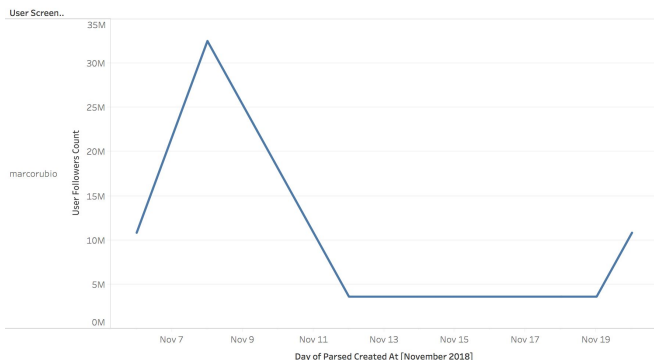
- Protest at Broward Elections Supervisor Office

12th: **@LeftStandingUp**: Dir. of Comms. for Stacey Abrams

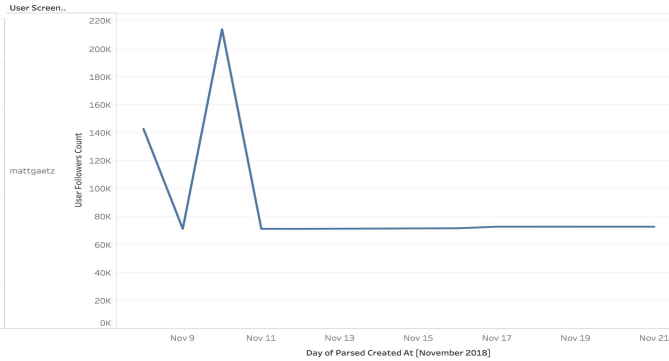
- Recount Continues

**@RealDrGina**: My husband **@johnloudon** spent the entire night (midnight-8 am) watching Dems steal our #FloridaRecount. He saw 1000s of ballots not counted then moved, unsecured out of view of observers to be filled in later by unknown people as they see fit... <https://t.co/TWRHHtO8oE>

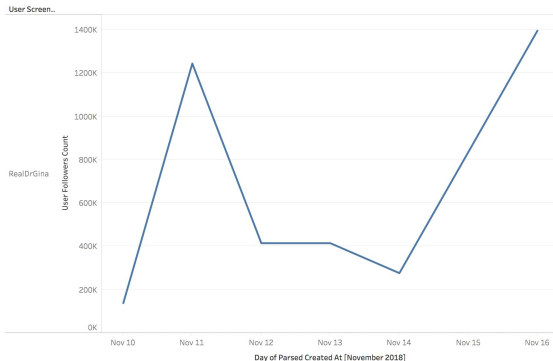
@marcorubio Following Over Time



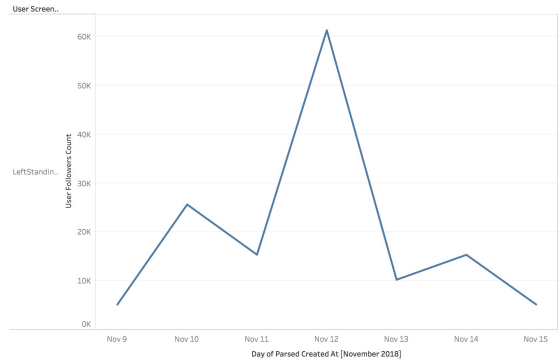
@mattgaetz Following Over Time



@RealDrGina Following Over Time

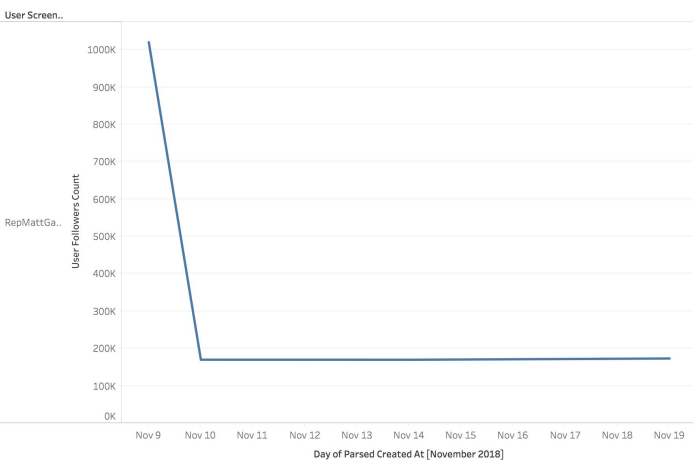


@LeftStandingUp Following Over Time



# No Spikes

@RepMattGaetz Following Over Time

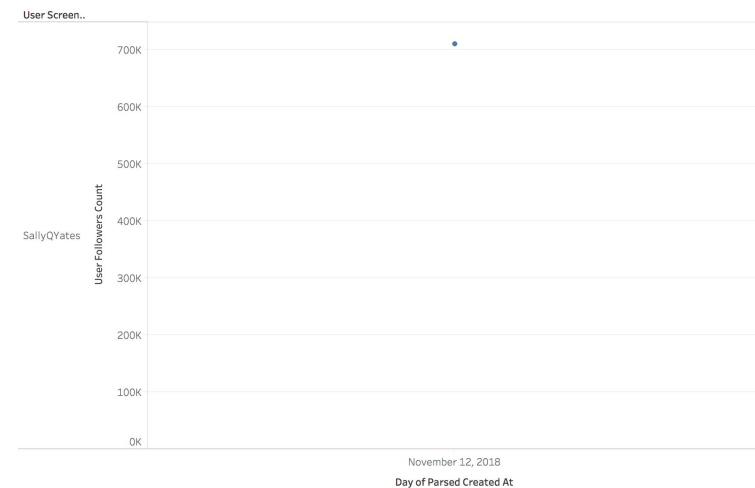


@RepMattGaetz: Second Account for Republican Representative (FL-1)

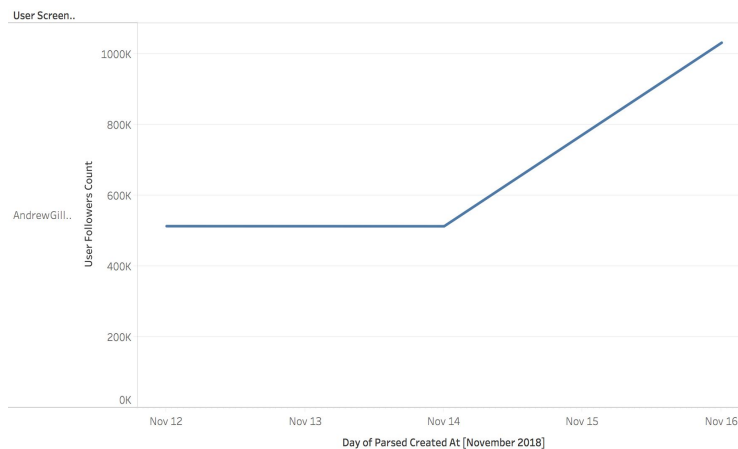
@AndrewGillum: Democratic Candidate

@SallyQYates: Former Deputy Attorney General

@SallyQYates Following Over Time



@AndrewGillum Following Over Time



# @SallyQYates



Hashtag	#CountEveryVote
Favorite Count	90154
Retweet Count	24699
User Followers // Following	710858 // 76
Tweet Text	<i>Democracy is only democracy if ALL eligible ballots are counted. It's not just about Stacey Abrams or any particular candidate. It's about our country's fundamental promise to #CountEveryVote</i>
Type	Original
User Description	Former Deputy Attorney General of the United States.



# Conclusions

From our investigations, it appears that in general, there is a weak correlation between the changes within the political climate and the changes in activity on Twitter. Our new visualizations corroborated our hypothesis to an extent; for 3 out of the top 10 most visible users, they showed that the most spikes within their follower count did indeed fall on Nov. 9th. However, the changes were not as consistent as we had predicted, with fluctuations occurring on four other days within the same time period, including decreases in follower count after the initial spike.

# Further Investigations?

- Look more in depth at individual user content for data points where follower size either dramatically increases or decreases to see if there are any patterns.
- Investigate the rate of change over time to see if there is any significant difference between fluctuations during periods of time with a politically charged climate versus more “neutral” political moments





# Political Bent in the Florida Recount Twitter Cycle

Erick Aguilar, Alex Rego, Kalif Jeremiah, Kevin Zheng

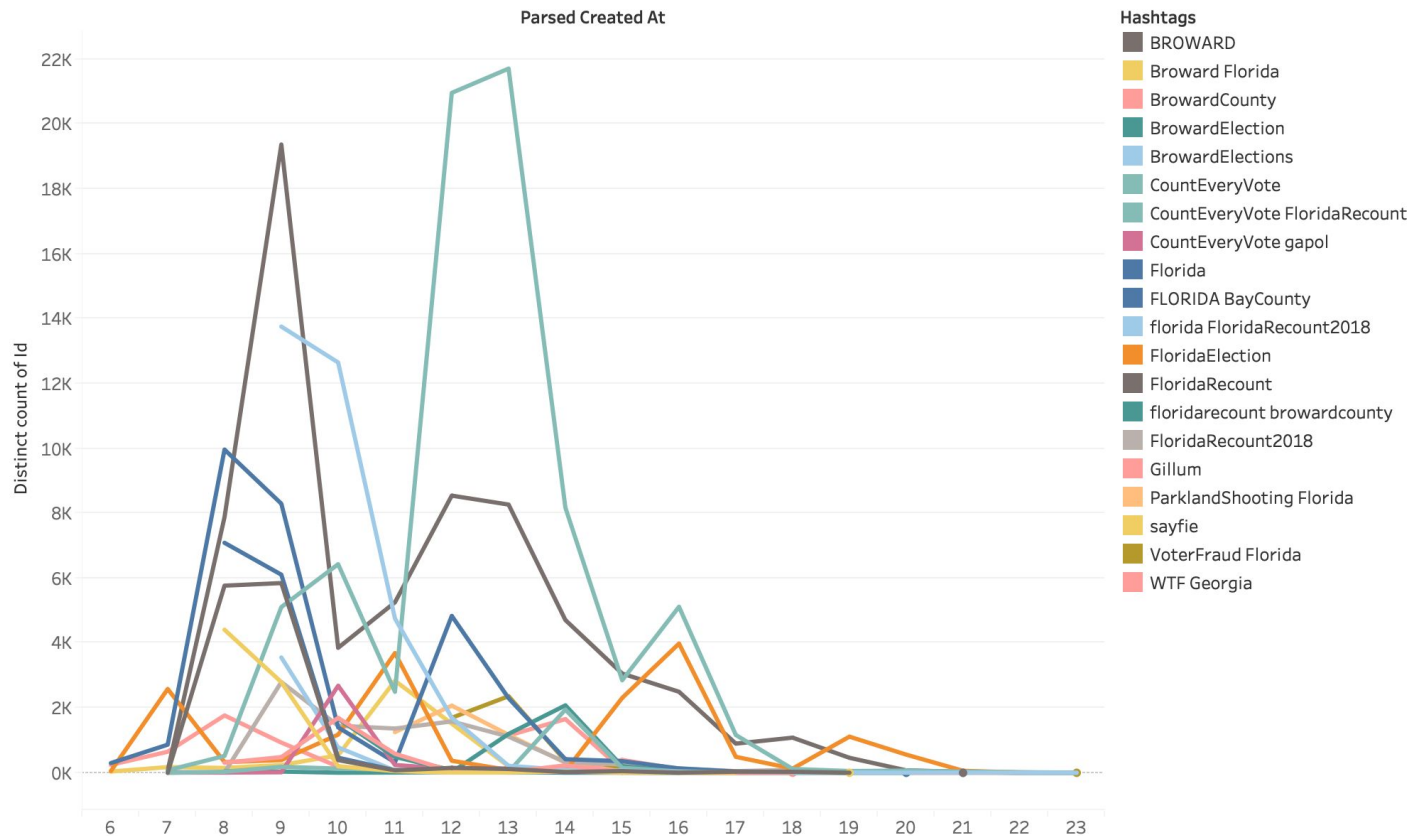


## Our Objective

- Our objective was to determine if there was a relationship between various politically indicative hashtags (such as #CountEveryVote) and the visibility of certain users

# The Initial Visualization

Hashtags Per Day: All



The trend of distinct count of Id for Parsed Created At Day. Color shows details about Hashtags. The view is filtered on Hashtags, which keeps 20 of 9,923 members.



## Our Hypothesis

The varying visibility of the most popular politically inclined Twitter accounts will correlate to the varying popularity of politically leaning hashtags over time. More specifically: we expect to see increased usage of #FloridaRecount with increased visibility of Republican top Twitter users and increased usage of #CountEveryVote with increased visibility of Democrat top Twitter users.

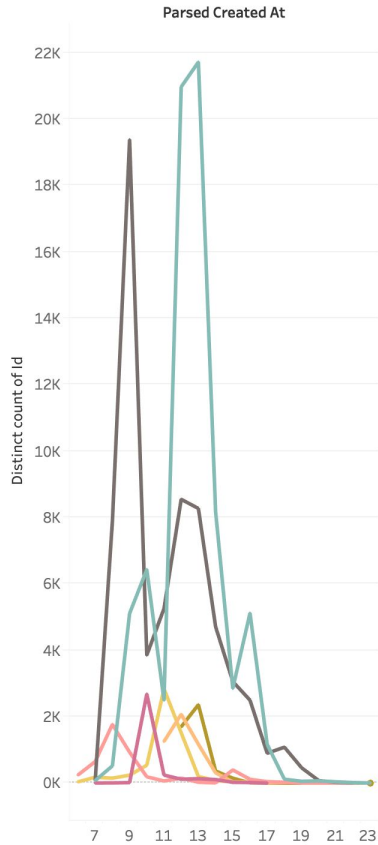


# The Process

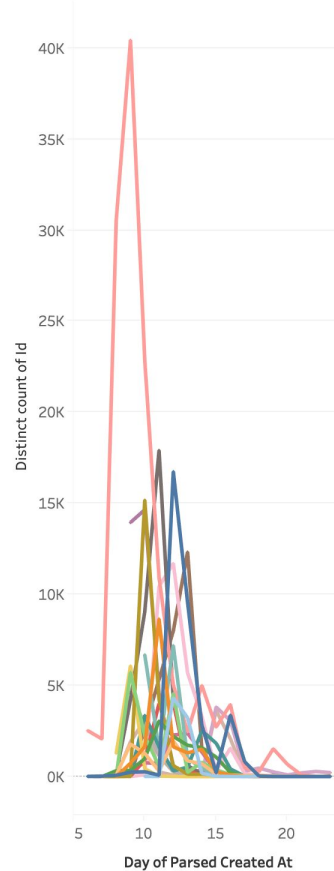
- First, we took the “User Visibility: @Mentions” & “User Visibility: Retweets” visualizations and looked at popularity over time, with the intention of comparing it to the popularity of certain hashtags over time
- Our first attempt at retrieving this data returned too many results
- To narrow it down to a more compact data set, we went through and “hid” mentions and hashtags that did not provide insight into the political leaning of the user. Such hashtags include generalization such as #Florida or #Vote
- In an ideal world we could have found out the political affiliation of every person’s data that was collected into the set. However, this proved to be impossible.

# The Visualization Comparison

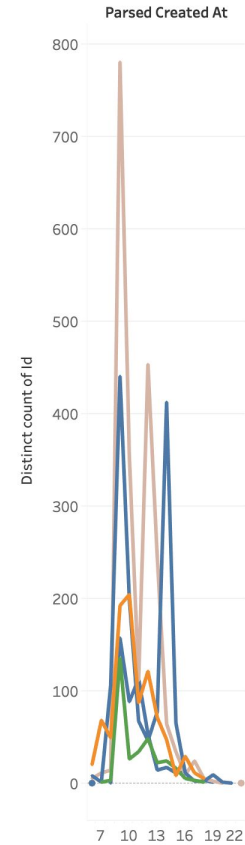
Hashtags Per Day: Most Interesting



User Visibility: Retweets



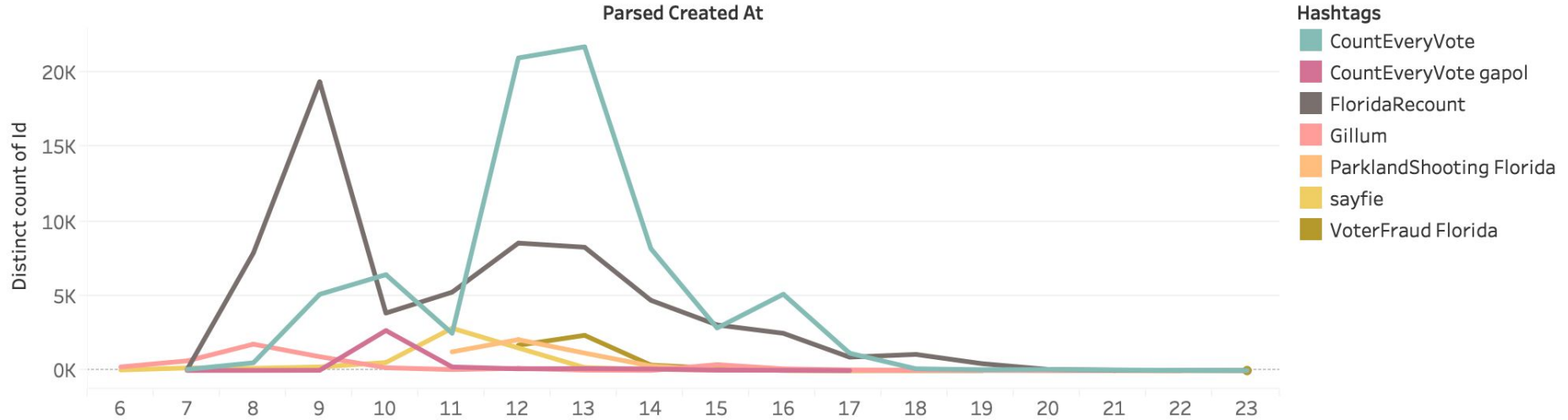
User Visibility: @Mentions



- Hashtags**
- CountEveryVote
  - CountEveryVote gap..
  - FloridaRecount
  - Gillum
  - ParklandShooting FL..
  - sayfie
  - VoterFraud Florida
- Retweet Or Quote Screen ..**
- AndrewGillum
  - B52Malmel
  - GeorgiaDemocrat
  - grantstern
  - gwlauren
  - JacobEngels
  - JeffKottkamp
  - JoeNBC
  - joncoopertweets
  - LeftStandingUp
  - marceelias
  - marcorubio
  - mattgaetz
  - PatrickMurphyFL
  - pollsofpolitics
  - RealDrGina
  - RepMattGaetz
  - RickPorterSEO
  - SallyQYates
  - staceyabrams
- In Reply To Screen Name**
- AndrewGillum
  - FLGovScott
  - marcorubio
  - realDonaldTrump
  - ScottforFlorida

# The Visualization Comparison: Hashtags

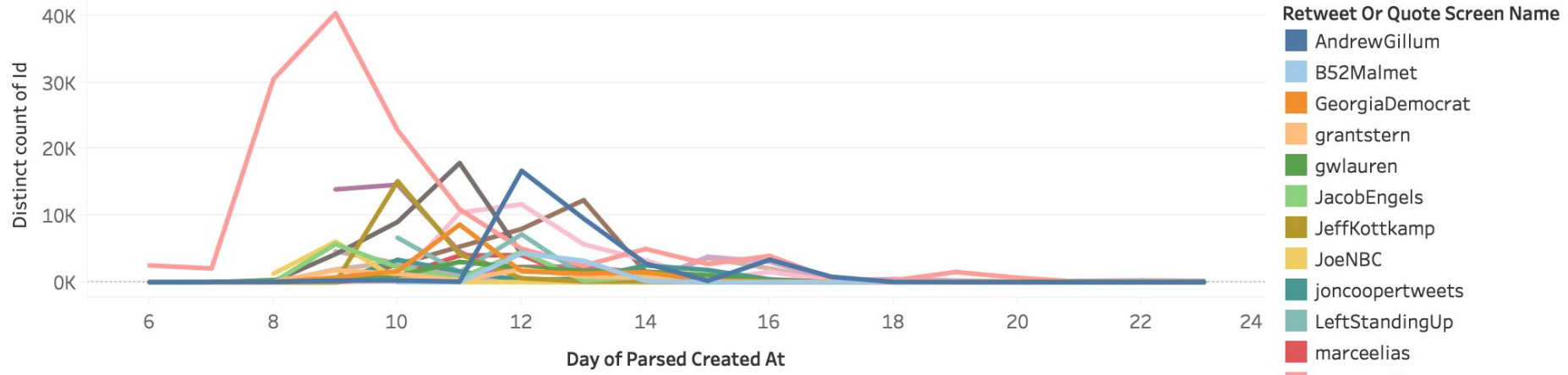
## Hashtags Per Day: Most Interesting



The trend of distinct count of Id for Parsed Created At Day. Color shows details about Hashtags. The view is filtered on Hashtags, which keeps 20 of 9,923 members.

# The Visualization Comparison: Retweets

## User Visibility: Retweets

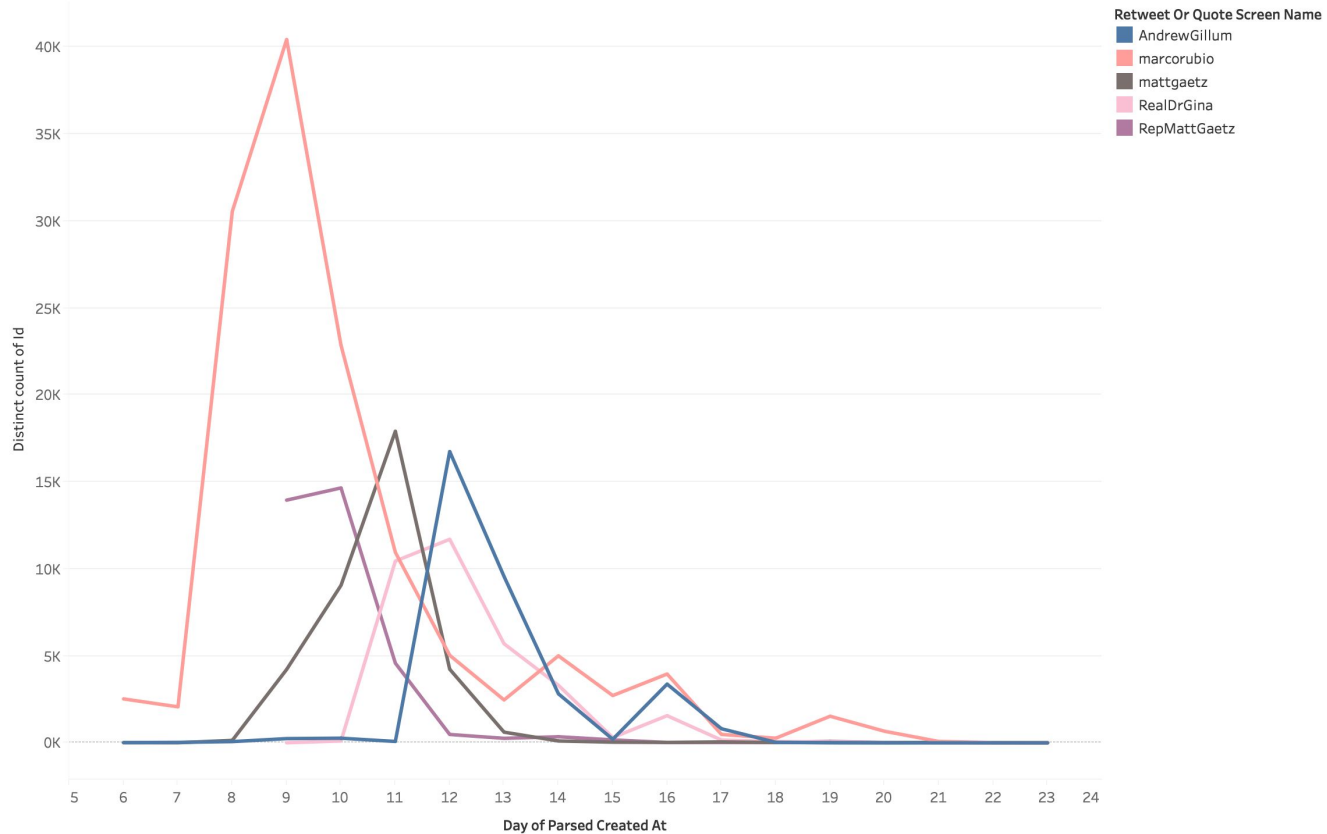


The trend of distinct count of Id for Parsed Created At Day. Color shows details about Retweet Or Quote Screen Name. The view is filtered on Retweet Or Quote Screen Name, which keeps 20 of 7,540 members.



# The Visualization Comparison: Retweets (Top 5)

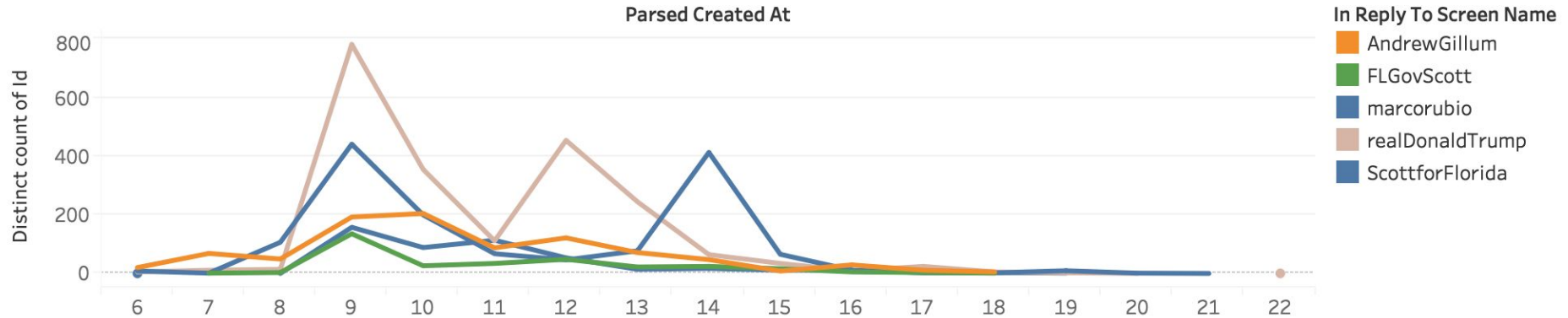
User Visibility: Retweets



The trend of distinct count of Id for Parsed Created At Day. Color shows details about Retweet Or Quote Screen Name. The view is filtered on Retweet Or Quote Screen Name, which keeps AndrewGillum, marcorubio, mattgaetz, RealDrGina and RepMattGaetz.

# The Visualization Comparison: @Mentions

## User Visibility: @Mentions



The trend of distinct count of Id for Parsed Created At Day. Color shows details about In Reply To Screen Name. The view is filtered on Exclusions (DAY(Parsed Created At),In Reply To Screen Name) and In Reply To Screen Name. The Exclusions (DAY(Parsed Created At),In Reply To Screen Name) filter keeps 8,147 members. The In Reply To Screen Name filter keeps AndrewGillum, FLGovScott, marcorubio,realDonaldTrump and ScottforFlorida.



# General Observations

- #FloridaRecount:
  - Hashtag was used both by people supporting the recount (we assumed to be Democrat-leaning) and people against the recount (we assumed to be Republican-leaning)
  - Coincided w/ increase in Marco Rubio Retweets and Trump @Mentions, both conservative during first peak, coincided w/ increase in Gillum Retweets during second peak
- #CountEveryVote:
  - Mostly used by people supporting the recount and/or gubernatorial candidate Andrew Gillum
  - Supported by correlation with Gillum Retweets
- The recount in Georgia muddied some of our data. The hashtags we were studying were sometimes used in reference to this, as opposed to the Florida recount that we aimed to focus on.



# Conclusions

- Supported our hypothesis that certain hashtags have some political alignment and coincided with popularity in Retweets and @Mentions of certain popular political Twitter users
- Provides evidence that there exists a degree of correlation between political hashtag popularity and political popularity in Retweets and @Mentions

# Granular Analysis



**Marco Rubio** ✓  
@marcorubio

Follow

Very proud of the work of my staff & offices after #HurricaneMichael. The most rewarding part of this job is when we are able to help people in need.

Watch Here: [youtu.be/PqIbYmsz6RI](https://youtu.be/PqIbYmsz6RI)

#Sayfie



Senator Rubio and Staff Assist Floridians Following Hurrica...  
[youtube.com](https://youtube.com)

10:23 AM - 8 Nov 2018



**Marco Rubio** ✓  
@marcorubio

Follow

Congratulations to @RonDeSantisFL & @RepJNunez. I am so proud of both of them. They are going to do a great job for #Florida. #Sayfie



8:10 PM - 6 Nov 2018

# Granular Analysis



Rep. Ted Deutch ✓

@RepTedDeutch

Follow



We must [#CountEveryVote](#). Stop lying about a legally mandated recount and show me evidence of any voter fraud. Neither you nor Rubio has any evidence - just dangerous rhetoric.

The person with the most votes wins. This isn't complicated for those on the side of the people.

Donald J. Trump ✓ @realDonaldTrump

As soon as Democrats sent their best Election stealing lawyer, Marc Elias, to Broward County they miraculously started finding Democrat votes. Don't worry, Florida - I am sending much better lawyers to expose the FRAUD!

12:10 PM - 9 Nov 2018



justjenn

@cultureobserve

Follow



I can't believe I'm having debates with grownups on why it's important to make sure all votes are counted. It won't always be "your guy", do you really want to live in a world where Dems say "Sorry MR. Republican your voice no longer counts" [#CountEveryVote](#)

4:52 AM - 9 Nov 2018



# Limitations

- Operating on incomplete dataset, only paints a partial picture
- Geographic confounding factors
- Hard to interpret the significance of Mentions - they can be either positive or negative
- Visual inspection, not quantitative. We could be missing trends



# Next Steps

- Analyze sentiment of @Mentions as those can be positive or negative. Retweets are generally positive
- Separate tweets based on geographical location
  - Nationwide vs. Florida public response
  - Georgia recount vs Florida recount
- Word “pairings” - inspect the most common words/phrases used in tweets with of various hashtags
- Use pre-built classifiers to categorize all tweets as politically “left” or “right”
  - This would most directly address our initial problem of identifying political alignment with the usage of certain tweets
  - Would also allow us to classify different users as “right” or “left”

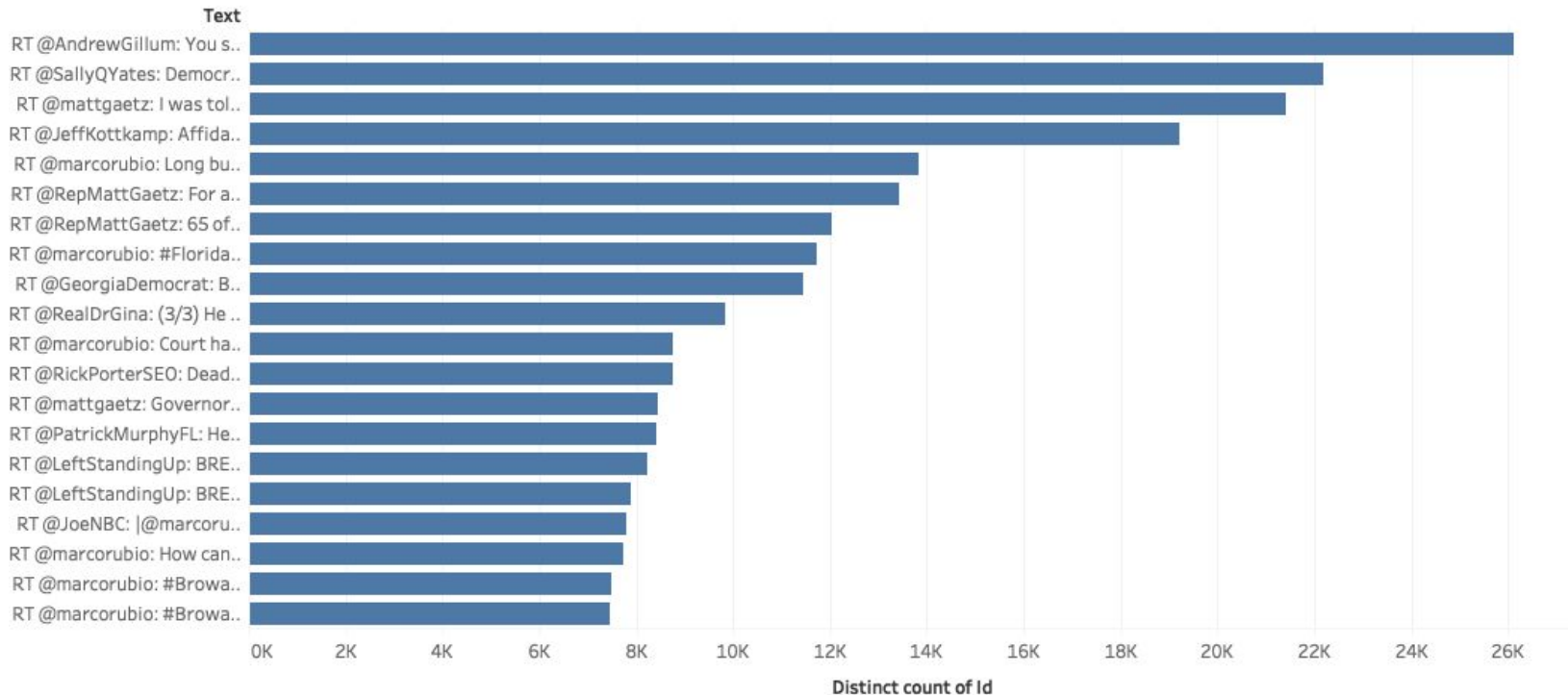


# Correlation of most-common hashtags with most-tweeted content

Group 5: Tim Kowalczyk; Jonathan Michala; Nia Moore; Ashleigh Smith

# Most Frequently Used Tweets

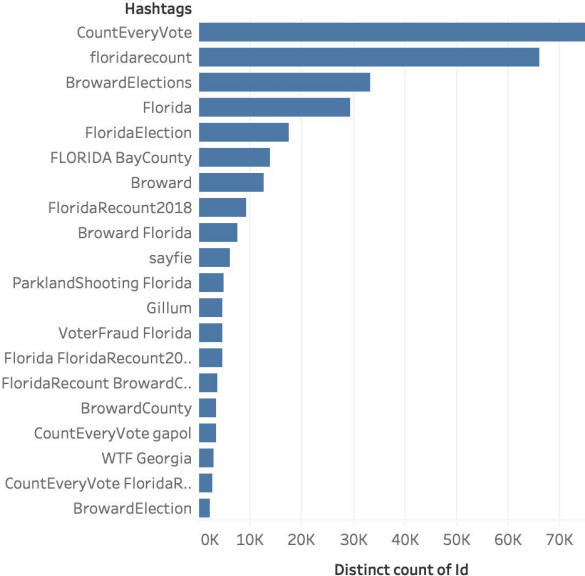
## Most Frequent Tweets



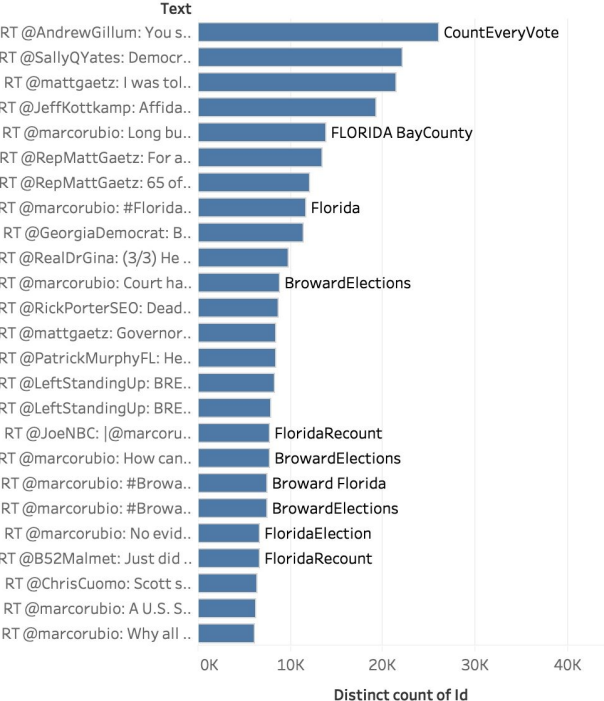
Distinct count of Id for each Text. The view is filtered on Text, which keeps 20 of 89,533 members.

# Most Frequently Used Tweets and their Hashtags

Hashtag Frequency



Frequency of Tweets



# What Questions Remain

- If it's not the hashtags that are driving the popularity of the tweet, what is it?
  - Is it when it was tweeted, or the content--given that the most followed members in the data set are not necessarily those with the most popular tweet (popular meaning most retweeted)
- Are hashtags pushing a trend, or do people latch on after seeing popular people tweet certain content
  - A tracking of hashtags over time could help answer this question
- Also, hashtags start a trend, but may not follow it through. How useful are they then for tracking when a trend can potentially soar in popularity, but then leave the hashtag behind?
  - Maybe tracking themes in tweet content--searching for key-words rather than hashtags
  - Question as to how to refine the search because of how easy it would be for extraneous information to make its way into your data set



# Hashtag Popularity

Yuanhao Guan, Samantha Jackson, BJ James, and Maegan Stanley



# Main Questions

Does a hashtag gain popularity as a result of verified users using the hashtag?

Does the usage of a hashtag spike as the highest follower count of verified users increase?

# Objective

To discover what fuels hashtag usage

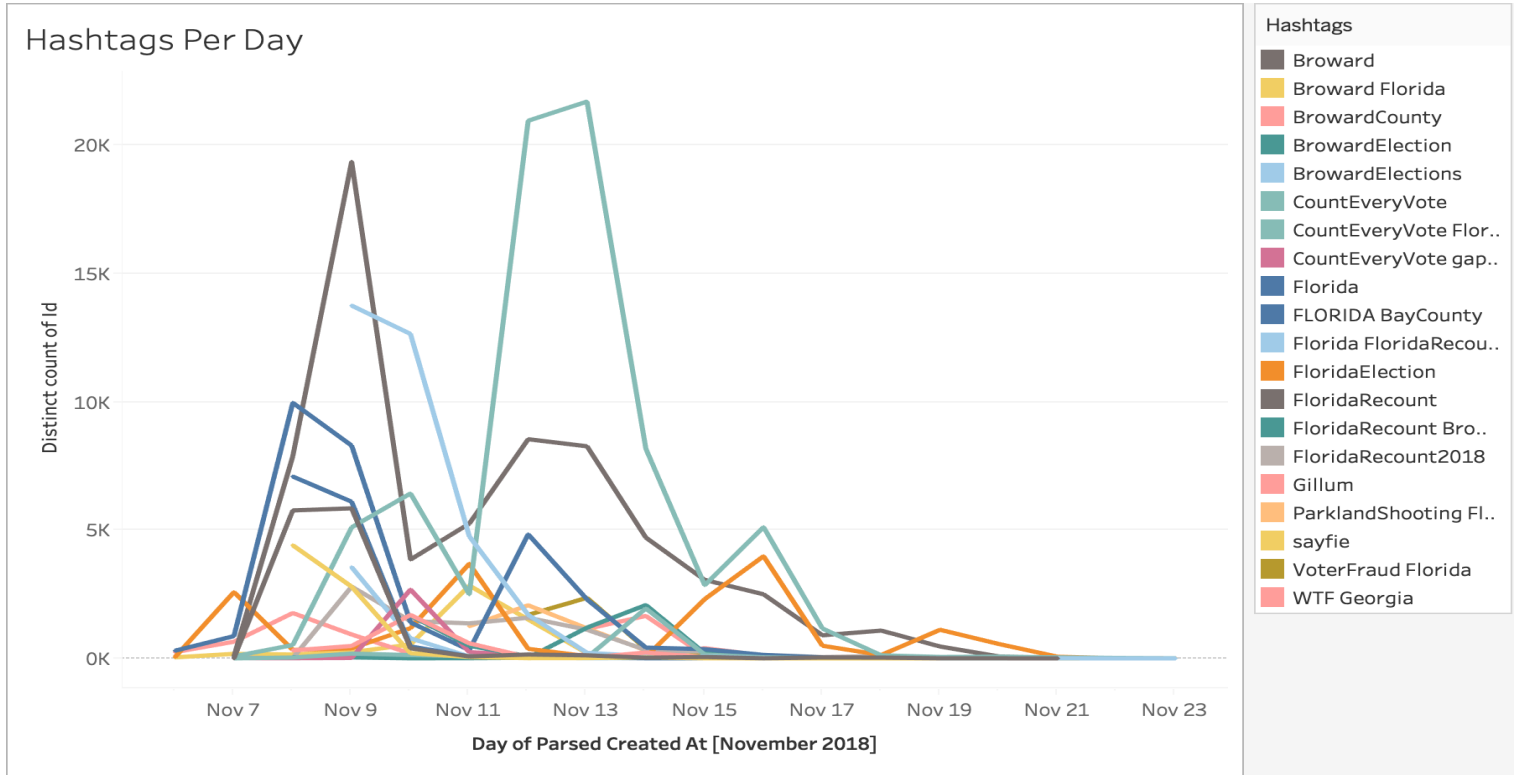
Does original content affect hashtag visibility?

Do verified users increase hashtag usage?

Find the most visible user who used a specific hashtag each day and record their follower count. We did this in order to see if an increase in user visibility of a hashtag feeds into an overall increase in the usage of a given hashtag

Spikes in hashtag usage coincided with more visible users using the hashtag

# Hashtags Per Day





# Hashtags Per Day

How do celebrities and verified users affect the use of hashtags?

When a hashtag spikes in usage, is it because a famous person recently used it?

Does a hashtag originate from a small activist organization with a low follower count, and then get popularized when it is used or retweeted by a verified account?

# Question and Hypothesis

Do verified users with more followers increase the visibility of a hashtag?

Our hypothesis was that spikes in hashtag usage would correspond with verified users with increasing followers using the hashtag (i.e. day 1 the most followed user may have 1,000 followers; day two - 80,000; day three - 200,000; etc.)

# Creating Visualization

To analyze our data, we need (ideally):

An experiment group who are exposed to celebrities' tweets and a control group who can't see these celebrities' tweets.

As a workaround, we created a graph showing the hashtags used by the person with the most followers at any specific hour. (at first we want to define celebrities as verified users, but the sample size is too small )

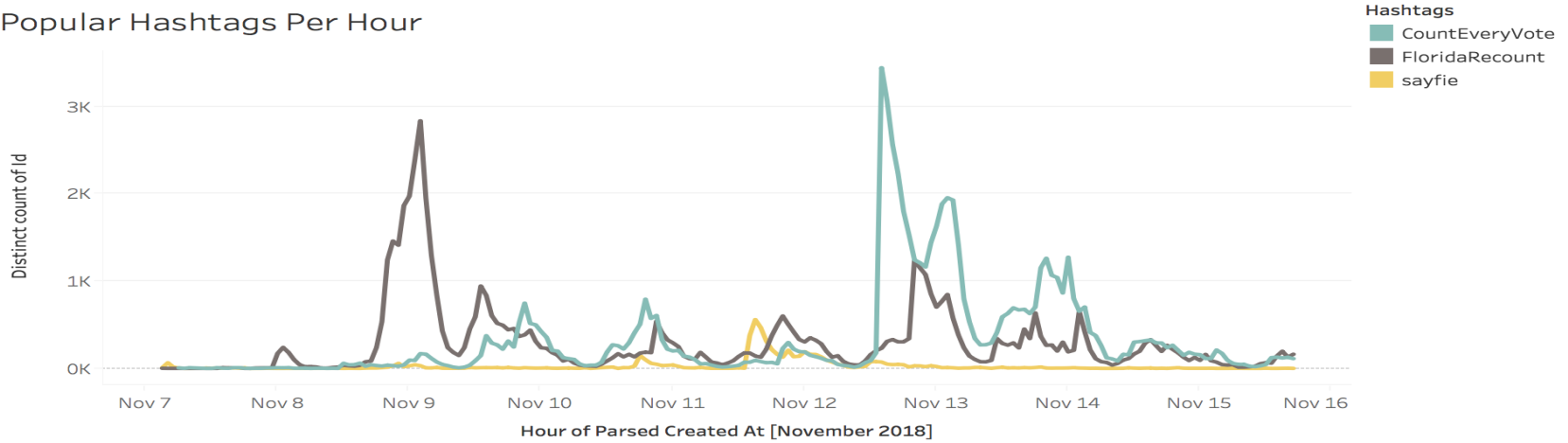
To narrow down the scope to this election, we choose the top three hashtags we care about:  
“CountEveryVote” “Sayfie” “FloridaRecount”

Drawbacks of our method:

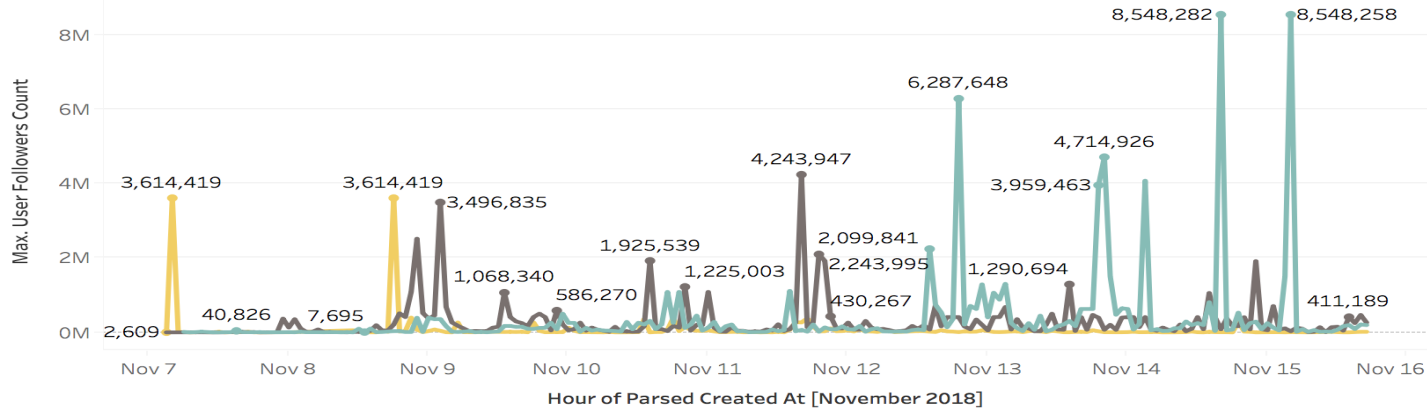
Easy to see correlation, but impossible to deduce causation.

Sensitive to the outliers.

## Popular Hashtags Per Hour



## Popular HashTags with Most Followers



# Conclusion

Our hypotheses did not always match the data and as such could not be confirmed due to other factors clearly acting on Twitter behavior.

Future research questions to uncover such factors: Does a hashtag's influence on the general public change with the 'type' of celebrity? Or what if only original tweets were considered without retweets ?

# How does a tweet become popular?


Jenna Thompson, Matthew Tribby, Anna Waters





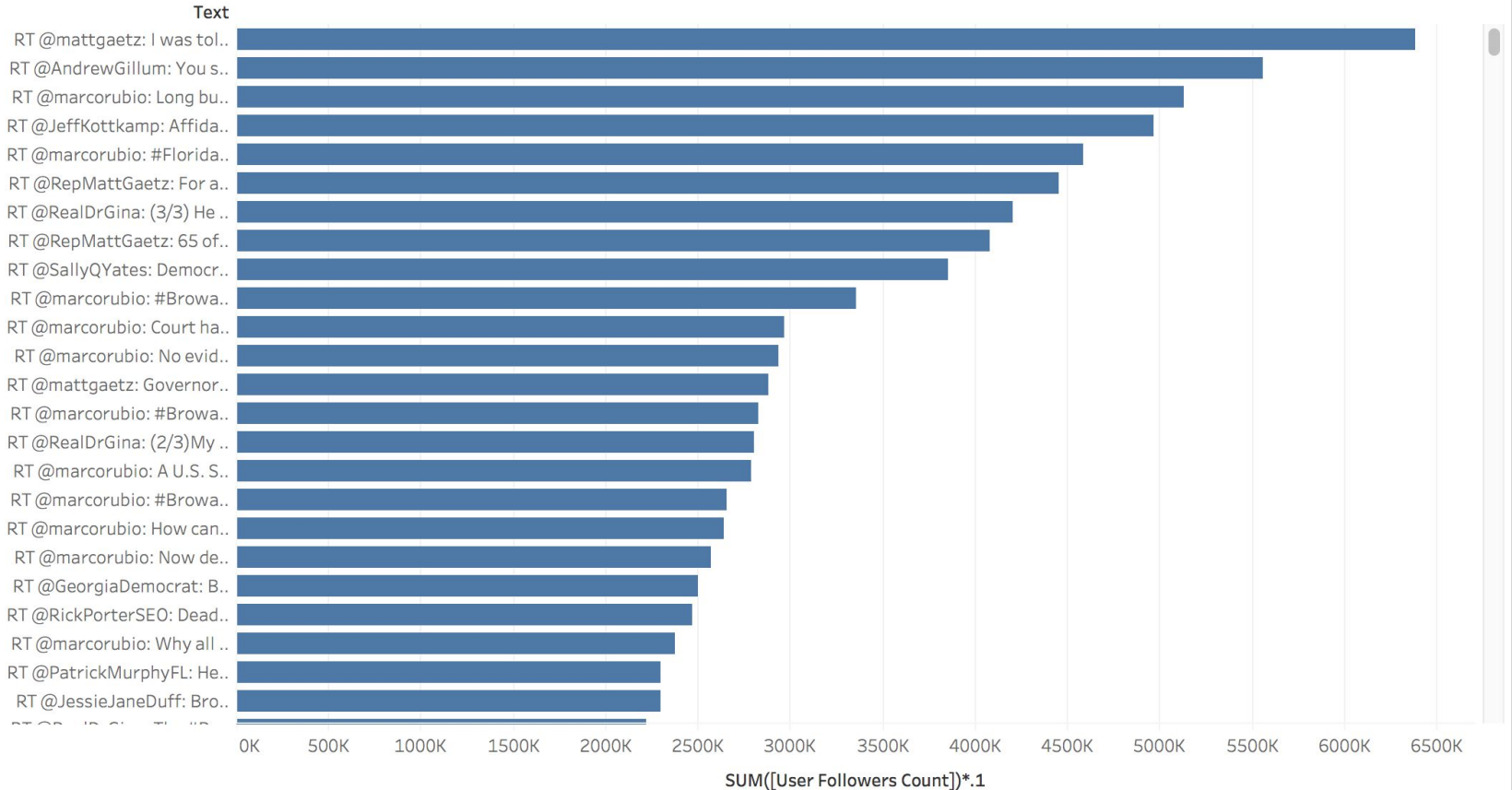
# **Objective:**

To understand the timeline of the most popular tweets (top 20) and to be able to visualize and explore the users who were part of that process.



# Starting Visualization: Tweet Reach

## Tweet Reach







# Questions for the Project

Questions it raised:

- How does a specific tweet become popular?
- How quickly does it become popular?
- Who is responsible for the number of retweets?

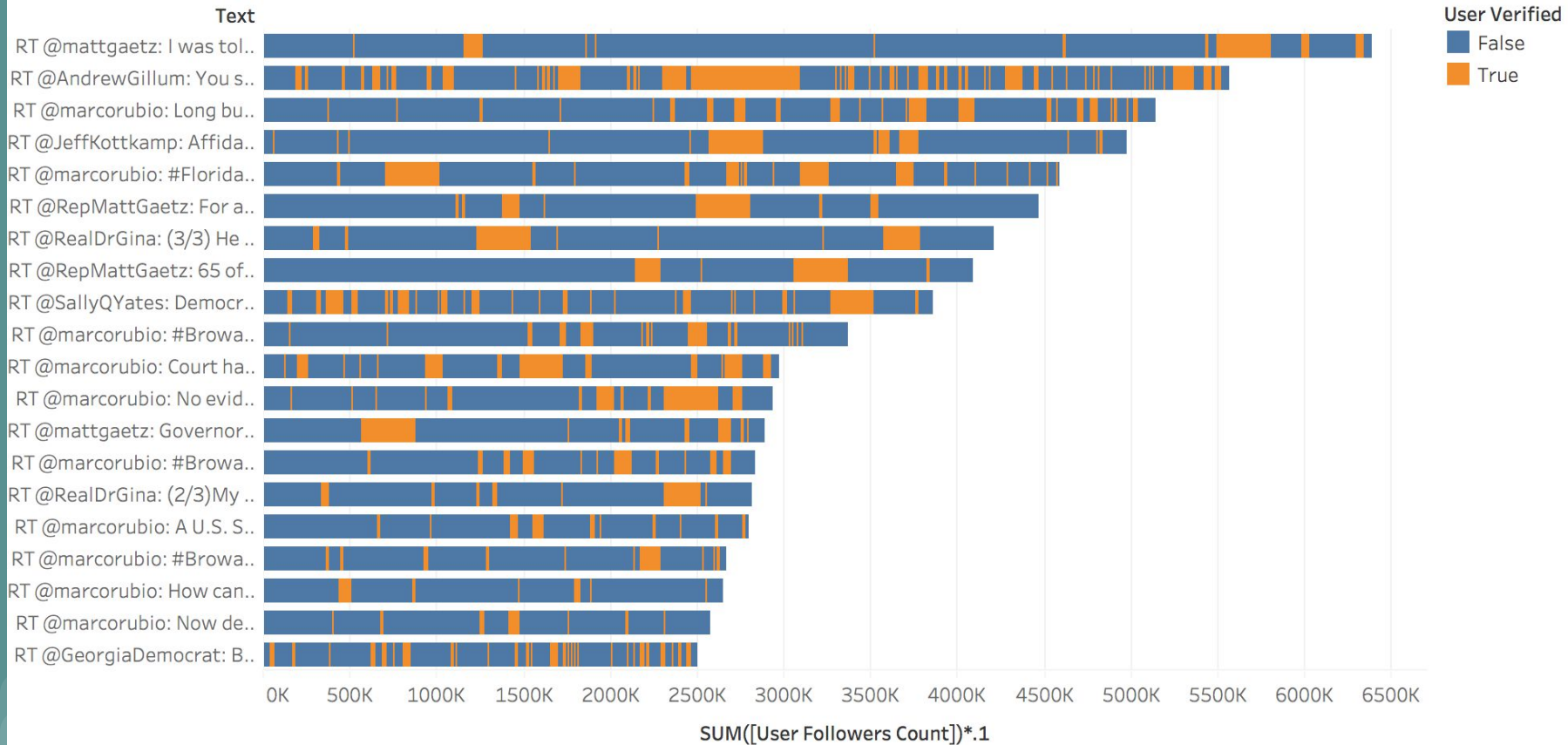
Our question we focused on:

- Do you have to be retweeted by a well known account to have your tweet have high visibility?

Our hypothesis:

- No but we expect that some of the tweets that have high visibility will have been retweeted by well known accounts.

# Tweet Reach: Top 20 Retweeted Tweets Over Time



SUM([User Followers Count])\*0.1 for each Text. Color shows details about User Verified. Details are shown for Parsed Created At Second and User Screen Name. The view is filtered on Text, which keeps 20 of 89,533 members.



# Analysis of our Work

- All top 20 tweets came from either verified users or a key player in the election
- Hard to tell if verified users caused popularity or retweeted because tweet was already popular

Further Question to Explore:

- What would this visualization look like for top 20 tweets of **non-verified** users?