CMPE58A TEAM PROJECT

TRUMPING TOPIC

ABSTRACT

- Donald Trump, the 45th President of United States is a man of emotions. His use of social media, particularly Twitter, has allowed us to see into the mind of the man holding the most powerful position in the world. This project delves into texts of his tweets, and through sentiment analysis and Natural Language Processing techniques we try to shed some light into the true meanings behind his words. Through analysis we come up with several models explaining enemy groupings, daily/weekly distributions of allies/enemies, connections between his mentions.

SCRIPTS

- trumpInitialiser.py
  - Preparation of the output file(s): trump_cleaned_tweets, trump_words, and trump_mentions
  - Input file(s): trump_tweets (raw Trump tweet data)
  - Example: trump_cleaned_tweets.csv
  - id,timestamp,day,week,tweet,sentiment
  - 1125774545988857856,05-07-2019 14:49:02,2200,314,Democrats in Congress must vote to close the terrible loopholes at the Southern Border If not harsh measures will have to be taken,-0.3
  - Trump_words
  - Word,frequency
  - democrats,556
  - Trump_mentions
  - Word,frequency
  - @ArmyWP,5

SCRIPTS

- trump_adjectives_parser.py
  - Preparation of the output file(s): trump_adjectives
  - Input file(s): trump_words
  - Natural Language Toolkit is used to download Brown Corpus, first created in 1961 at Brown University.
  - We are then fetching Brown's tagged words without specifying a category, such as news.
  - Example:trump_adjectives.csv
  - Word,polarity
  - terrible,JJ

SCRIPTS

- trump_actors_parser.py
  - Preparation of the output file(s): trump_actors_rated
  - Input file(s): trump_mentions, trump_cleaned_tweets
  - trump_actors_rated includes the name of the actor, how frequently the actor has been mentioned, how many times he/she's been mentioned in positive/negative contexts, and the net ratings.
  - Example: trump_actors_rated.csv
  - actor,frequency,negative,positive,rated
  - @OANN,24,-4,14,10

SCRIPTS

- trump_enemies_parser.py
    - Preparation of the output file(s): trump_enemies
    - Input file(s): trump_actors_rated
    - This parser simply fetches the rows from trump_actors_rated and depending on the net rating we've calculated within trump_actors_parser.py, appends a desired data structure to a list of allies.
    - Example: trump_enemies.csv
    - actor,frequency,negative,positive,rated
    - @nytimes,123,-64,46,-18

SCRIPTS

- trump_allies_parser.py
    - Preparation of the output file(s): trump_aliies
    - Input file(s): trump_actors_rated
    - This parser simply fetches the rows from trump_actors_rated and depending on the net rating we've calculated within trump_actors_parser.py, appends a desired data structure to a list of allies.
    - Example: trump_allies.csv
    - actor,frequency,negative,positive,rated
    - @OANN,24,-4,14,10

SCRIPTS

- positive_negative_tweet_separator_per_day.py
    - Preparation of the output file(s): trump_positive_tweets_daily and trump_negative_tweets_daily
    - Input file(s): trump_cleaned_tweets
    - Aim of this script is to separate the positive and negative tweets inside trump_cleaned_tweets
    - Example: trump_positive_tweets_daily
    - positive_tweet_count_per_day
    - 1,24

SCRIPTS

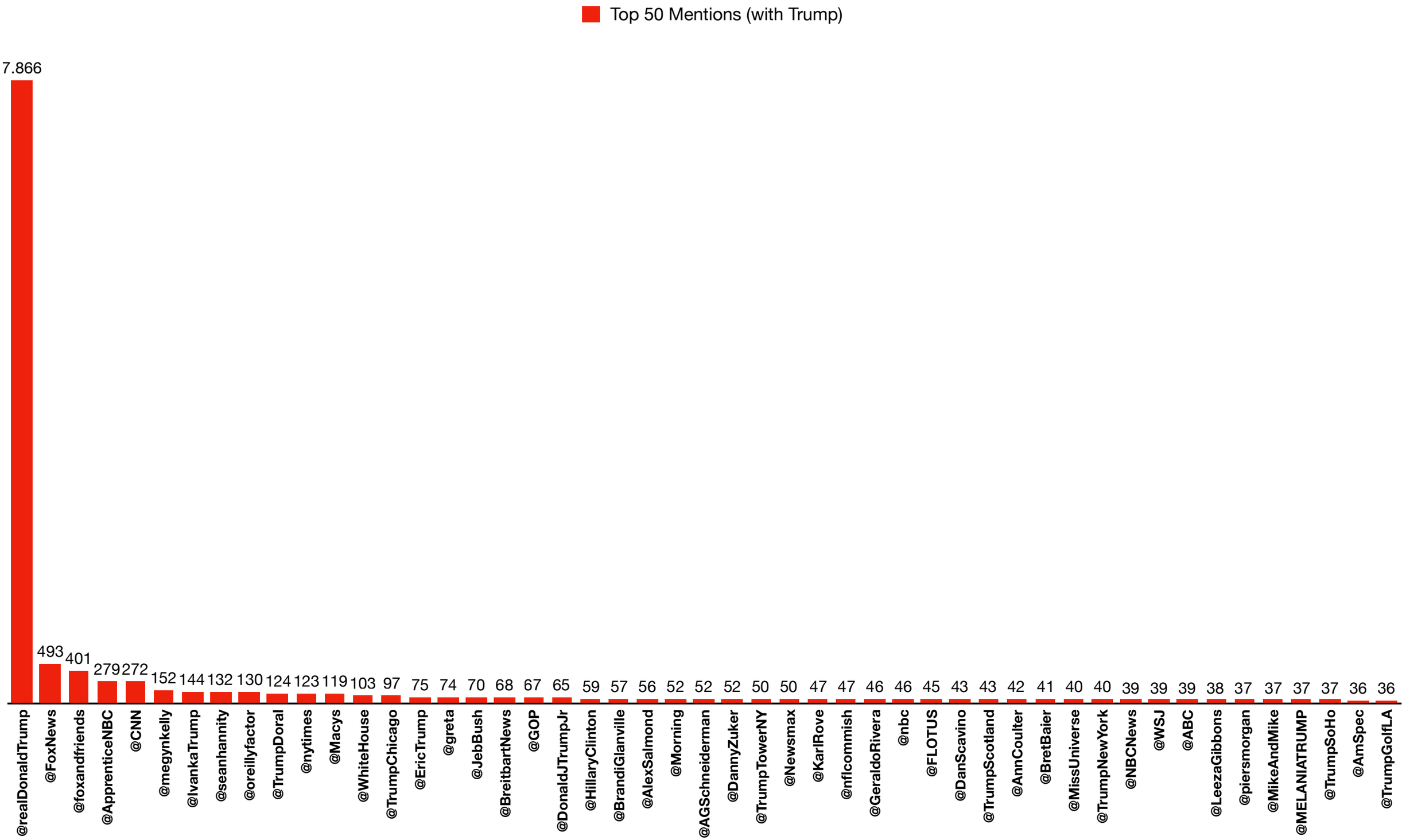
- trump_actor_breadth_analysis.py
    - Preparation of the output file(s): trump_actors_weekly
    - Input file(s): trump_actors_rated, trump_cleaned_tweets
    - Aim of this script is to group actors mentioned in a same week with their frequency
    - Example: trump_actors_weekly.csv
    - week,actors,cumulative
    - 1,"[{'name': '@CNN', 'frequency': 1}, {'name': '@foxandfriends', 'frequency': 1}, {'name': '@realDonaldTrump', 'frequency': 38}, {'name': '@mike', 'frequency': 1}, {'name': '@NBC', 'frequency': 1}, {'name': '@greta', 'frequency': 1}, {'name': '@realdonaldtrump', 'frequency': 1}, {'name': '@J', 'frequency': 6}, {'name': '@The', 'frequency': 1}, {'name': '@mcuban', 'frequency': 3}, {'name': '@Chris', 'frequency': 3}, {'name': '@billmaher', 'frequency': 1}, {'name': '@gretawire', 'frequency': 1}, {'name': '@ApprenticeNBC', 'frequency': 3}, {'name': '@Lord', 'frequency': 4}]",66

SCRIPTS

- trump_allies_enemies_weekly_parser.py
    - Preparation of the output files(s): trump_allies_weekly.csv and trump_enemies_weekly.csv
    - Input file(s): trump_enemies, trump_allies, trump_actors_weekly
    - Aim of this script is to separate the allies and enemies inside trump_actors_weekly
    - Example: trump_enemies_weekly.csv
    - week,actors,cumulative
    - 1,"[{'name': '@billmaher', 'frequency': 1}]",1

SCRIPTS

- trump_enemy_adjacency_parser.py
    - Aim of this file is to create a symmetric matrix representing which enemies have been mentioned with which other enemies in the same week.
    - Input file(s): trump_actors_weekly, trump_enemies
    - The values between two enemies are updated based on the occurrence of this phenomenon.
    - Example: trump_enemy_adjacency_matrix.txt
    - @nytimes,0,4,0,8,4,9,2,2,1,3,0,6,1,0,0,2,0,1,0,1,0,0,0,0


Top 50 Mentions (with Trump)
7.866
493
401
279
272
152
144
132
130
124
123
119
103
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75
74
70
68
67
65
59
57
56
52
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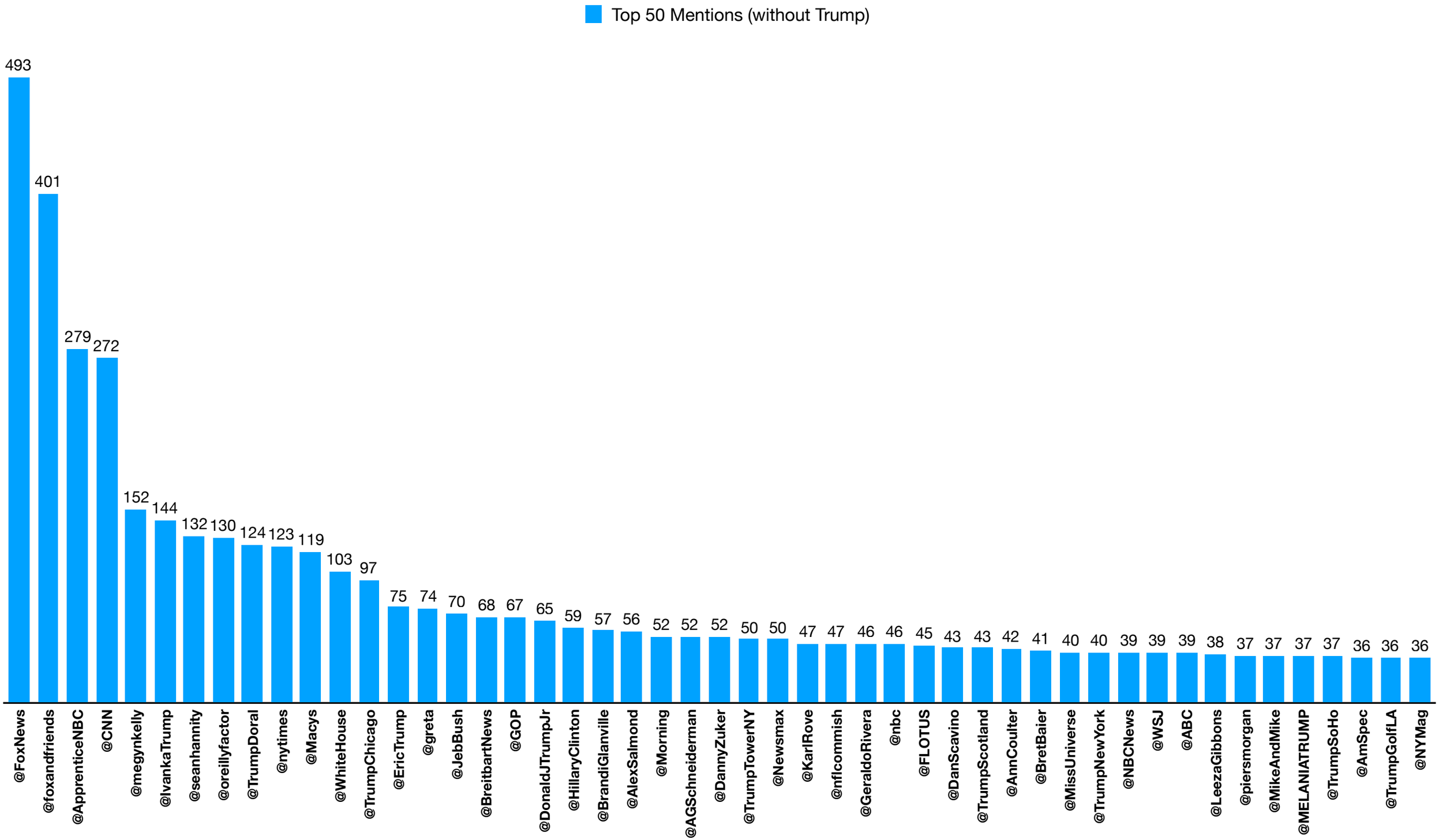
@realDonaldTrump
@FoxNews
@foxandfriends
@ApprenticeNBC
@CNN
@megynkelly
@IvankaTrump
@seanhannity
@oreillyfactor
@TrumpDoral
@nytimes
@Macys
@WhiteHouse
@TrumpChicago
@EricTrump
@greta
@JebBush
@BreitbartNews
@GOP
@DonaldJTrumpJr
@HillaryClinton
@BrandiGlanville
@AlexSalmond
@Morning
@AGSchneiderman
@DannyZuker
@TrumpTowerNY
@Newsmax
@KarlRove
@nflcommish
@GeraldoRivera
@nbc
@FLOTUS
@DanScavino
@TrumpScotland
@AnnCoulter
@BretBaier
@MissUniverse
@TrumpNewYork
@NBCNews
@WSJ
@ABC
@LeezaGibbons
@piersmorgan
@MikeAndMike
@MELANIATRUMP
@TrumpSoHo
@AmSpec
@TrumpGolfLA


Top 50 Mentions (without Trump)
493
401
279
272
152
144
132
130
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123
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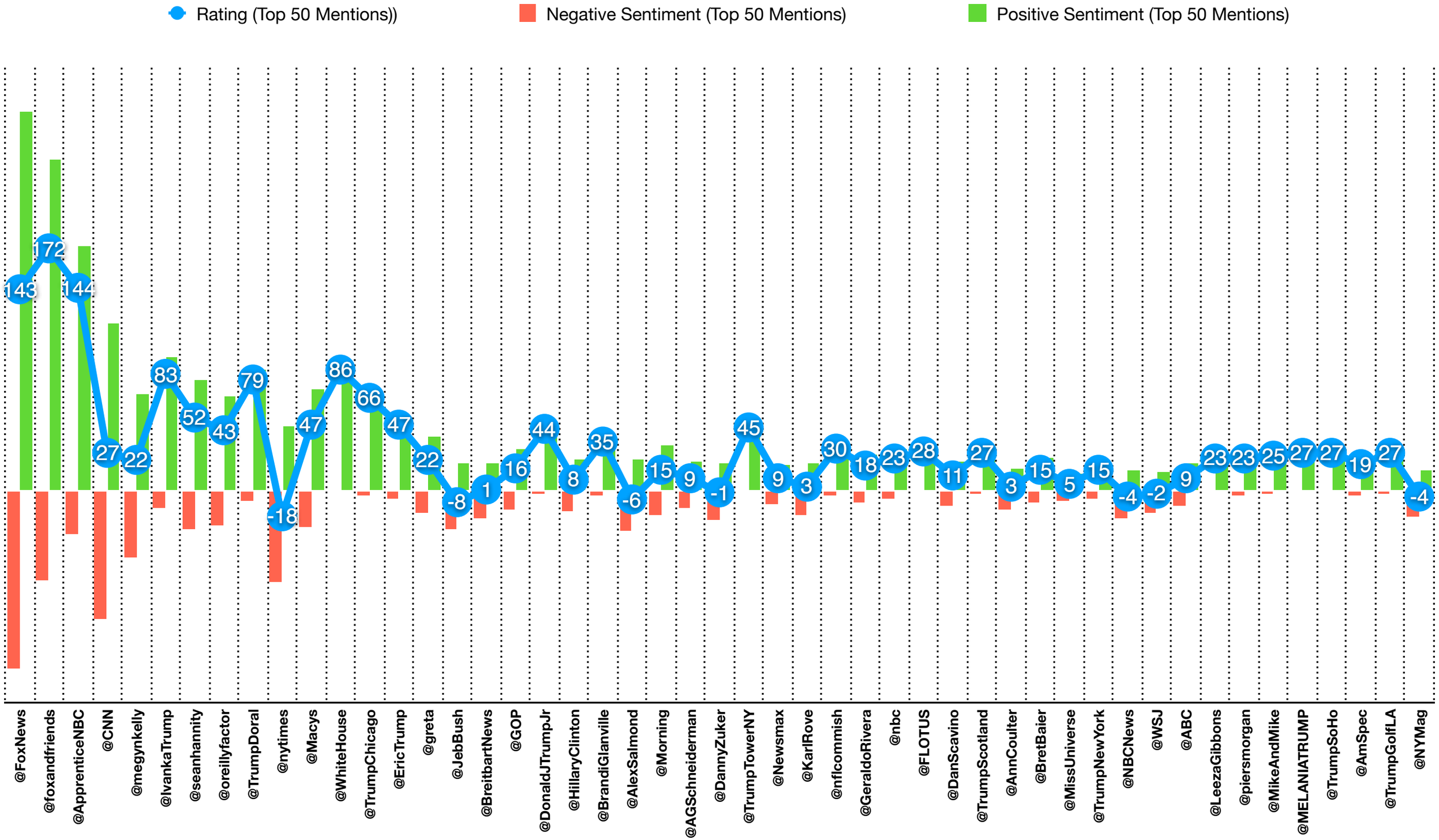
@FoxNews
@foxandfriends
@ApprenticeNBC
@CNN
@megynkelly
@IvankaTrump
@seanhannity
@oreillyfactor
@TrumpDoral
@nytimes
@Macys
@WhiteHouse
@TrumpChicago
@EricTrump
@greta
@JebBush
@BreitbartNews
@GOP
@DonaldJTrumpJr
@HillaryClinton
@BrandiGlanville
@AlexSalmond
@Morning
@AGSchneiderman
@DannyZuker
@TrumpTowerNY
@Newsmax
@KarlRove
@nflcommish
@GeraldoRivera
@nbc
@FLOTUS
@DanScavino
@TrumpScotland
@AnnCoulter
@BretBaier
@MissUniverse
@TrumpNewYork
@NBCNews
@WSJ
@ABC
@LeezaGibbons
@piersmorgan
@MikeAndMike
@MELANIATRUMP
@TrumpSoHo
@AmSpec
@TrumpGolfLA
@NYMag

TOP 50 MENTIONS

- ~%30 Media Allies (@ FoxNews)
- ~%18 Affiliated Business (@TrumpGolfLA)
- ~%11 Family (@MELANIATRUMP)
- ~%9 Media Rival (@WSJ)
- ~%6.5 Political Rivals (@JebBush, @HillaryClinton)
- ~%6.5 Political Allies (@KarlRove)
- ~%6.5 Former Ally, Current Rival (@AnnCoulter)


Rating (Top 50 Mentions))
Negative Sentiment (Top 50 Mentions)
Positive Sentiment (Top 50 Mentions)
143
172
144
27
22
83
52
43
79
-18
47
86
66
47
22
-8
1
16
44
8
35
-6
15
9
-1
45
9
3
30
18
23
28
11
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-4
-2
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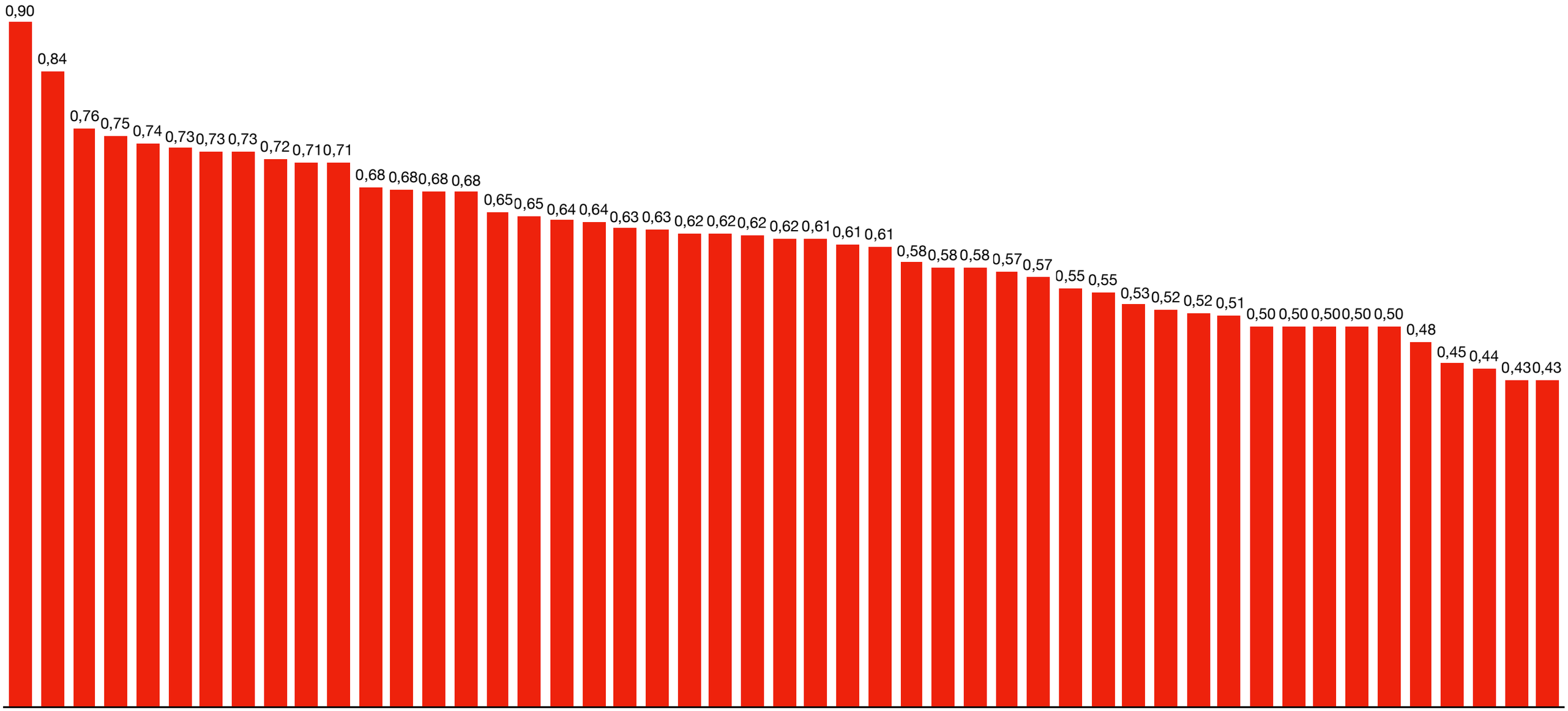
-4
@FoxNews
@foxandfriends
@ApprenticeNBC
@CNN
@megynkelly
@IvankaTrump
@seanhannity
@oreillyfactor
@TrumpDoral
@nytimes
@Macys
@WhiteHouse
@TrumpChicago
@EricTrump
@greta
@JebBush
@BreitbartNews
@GOP
@DonaldJTrumpJr
@HillaryClinton
@BrandiGlanville
@AlexSalmond
@Morning
@AGSchneiderman
@DannyZuker
@TrumpTowerNY
@Newsmax
@KarlRove
@nflcommish
@GeraldoRivera
@nbc
@FLOTUS
@DanScavino
@TrumpScotland
@AnnCoulter
@BretBaier
@MissUniverse
@TrumpNewYork
@NBCNews
@WSJ
@ABC
@LeezaGibbons
@piersmorgan
@MikeAndMike
@MELANIATRUMP
@TrumpSoHo
@AmSpec
@TrumpGolfLA
@NYMag

SENTIMENT ANALYSIS IN TOP 50 MENTIONS

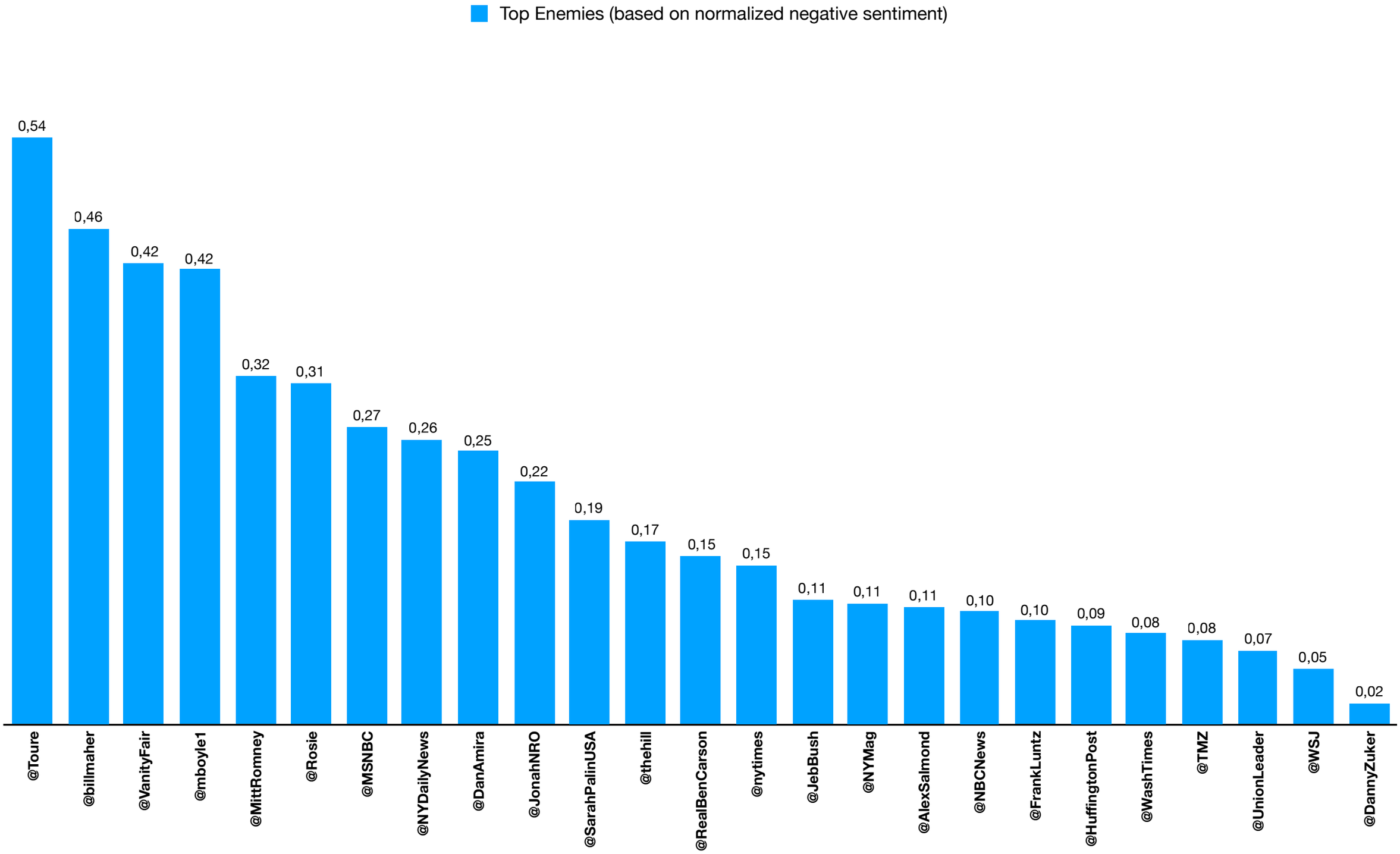
- positive bias in mentions are targeting
  - overwhelming majority to media allies
  - family and affiliated businesses
- negative bias in mentions are targeting
  - ~%30 political rivals (@JebBush,@AlexSalmond)
  - ~%70 media rivals (@nytimes,@NBCNews,@NYMag,@WSJ)
- former allies, current rivals are neutral (@BreitbartNews,@AnnCoulter)

Top 50 Allies (based on normalized positive sentiment over >20 mentions)



TRUMP ALLIES

- overwhelming majority is:
  - affiliated business and family
  - media allies
- curious not to see political figures
- Trump designates and executes his agenda through media


Top Enemies (based on normalized negative sentiment)
0,54
0,46
0,42
0,42
0,32
0,31
0,27
0,26
0,25
0,22
0,19
0,17
0,15
0,15
0,11
0,11
0,11
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0,10
0,09
0,08
0,08
0,07
0,05
0,02
@Toure
@billmaher
@VanityFair
@mboyle1
@MittRomney
@Rosie
@MSNBC
@NYDailyNews
@DanAmira
@JonahNRO
@SarahPalinUSA
@thehill
@RealBenCarson
@nytimes
@JebBush
@NYMag
@AlexSalmond
@NBCNews
@FrankLuntz
@HuffingtonPost
@WashTimes
@TMZ
@UnionLeader
@WSJ
@DannyZuker

Donald J. Trump
@realDonaldTrump

Follow

@Toure If you weren't such a dumb racist moron with bad ratings you would know I never filed for bankruptcy,now worth over $10 billion dummy

4:44 AM - 10 Sep 2013

458 Retweets **424** Likes

123 458 424

Donald J. Trump
@realDonaldTrump

Follow

@Toure Dumb as a rock Toure doesn't have a clue about money or anything else-merely a simpleton racist.Really bad ratings,really stupid guy

4:53 AM - 10 Sep 2013

41 Retweets **44** Likes

17 41 44

Donald J. Trump
@realDonaldTrump

Follow

I hear this moron @billmaher said nasty things about me (hair etc—boring) on the terminated @jayleno show. Stupid guy/bad ratings!

12:11 AM - 5 Sep 2013

174 Retweets **227** Likes

116 174 227

Donald J. Trump
@realDonaldTrump

Follow

Does anyone remember this @BillMaher clip when he got fired from ABC- in fact, fired like a dog! youtu.be/97KllcZidKQ

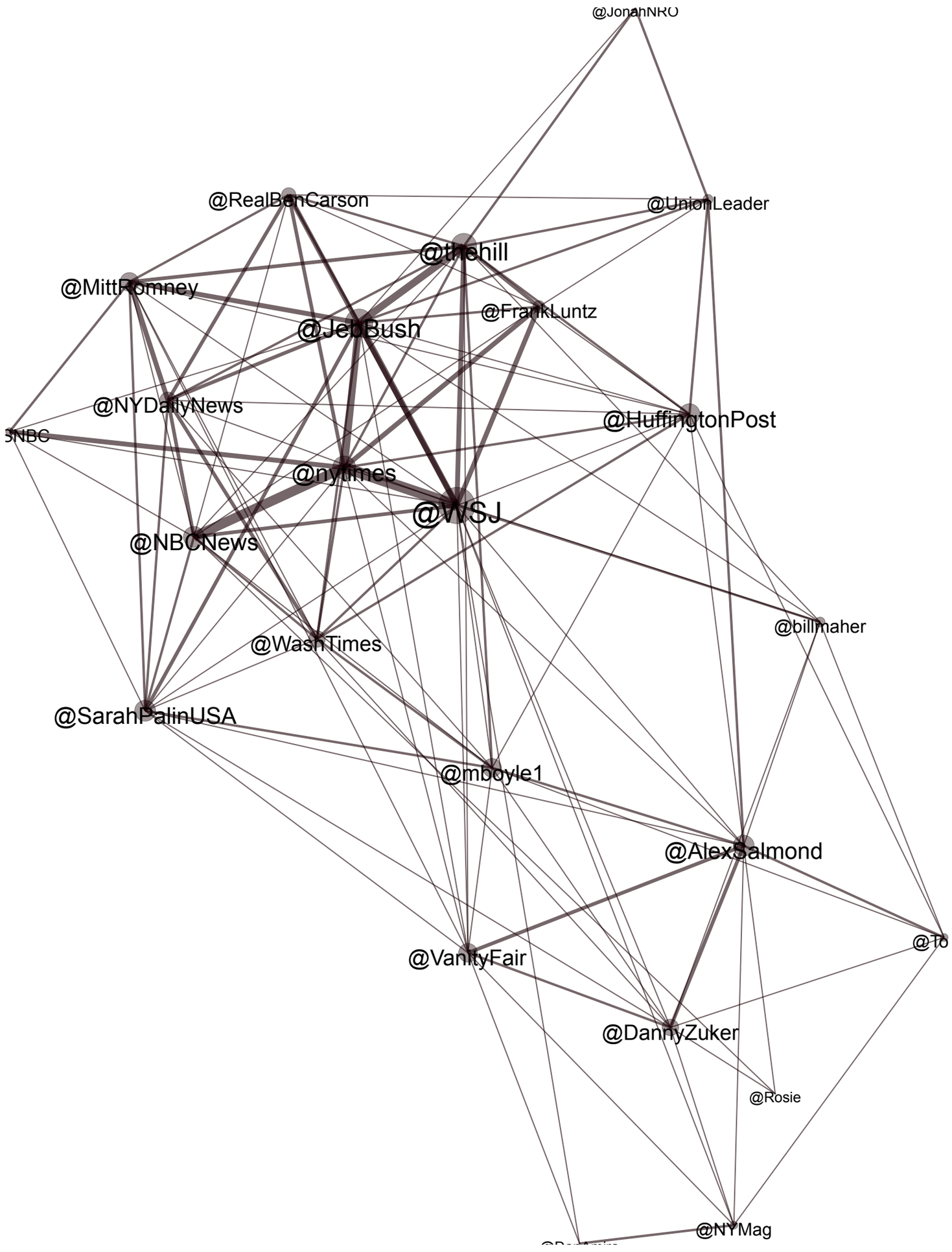
5:31 PM - 16 Jan 2013

172 Retweets **209** Likes

169 172 209

TRUMP ENEMIES

- balanced among
  - political rivals
  - media rivals
- Trump is more direct with rivals
- the number of enemies is significantly lower compared to allies


@JonahNRO
@RealBenCarson
@UnionLeader
@thehill
@MittRomney
@FrankLuntz
@JebBush
@NYDailyNews
@HuffingtonPost
NBC
@nytimes
@WSJ
@NBCNews
@billmaher
@WashTimes
@SarahPalinUSA
@mboyle1
@AlexSalmond
@VanityFair
@DannyZuker
@Rosie
@NYMag

TRUMP ALLIES

- Previous slide is a visual representation of Donald Trump's enemies' intersection with other enemies in the same week.
- The nodes represent his enemies which we found through analysis, and are scaled based on their degrees.
- Edges represent how many times the two enemies have been mentioned together in the same week, and are scaled based on their weights.
- This analysis was done to find out which 'enemies' he focuses on in a single week, and whether we could derive certain conclusions from it.
- For instance @JebBush and @MittRomney have been mentioned together in the same week 4 times throughout our analysis. They're both rival politicians to Donald Trump in the Republican Party.
- Another takeaway from the graph is the relation between @nytimes, @WSJ, and @NBCNews. These 3 are considered news outlets, and taking into account Donald Trump's tendency to attack news outlets in a concentrated manner, they have strong connectedness between them as visible in the previous slide.

THANKS