

Propaganda grew, and so did Twitter



Luigi Gubello

HackInBo 2021



:~\$ whoami

Currently Security Engineer at Smallpdf.
Previously Security Manager at Arduino. In recent years, I have tried to understand how disinformation spreads on Twitter. I contribute to the Open Source Security Foundation's "Security Metrics" project, to define security metrics for open-source projects.

- Linux  user
- Twitter  addicted
- Cats  and bowties  lover

 @evaristegalois

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What is this talk about?



Networks classified from Twitter as state-linked information operations:

- 👉 Internet Research Agency information operations (October 2018)
- 👉 Chinese (PRC) state-backed information operations (August 2019)
- 👉 Chinese (PRC) state-linked information operations (June 2020)



Methodology used to analyse the datasets and limits of data shared by Twitter:

- 👉 Script used and data analysed
- 👉 Missing data and limits
- 👉 Metadata



Methodology



My Twitter World



luigigubello/My-Twitter-World

tweets_analysis.py, to read data from Twitter datasets. A big thank-you to Niccolò Battolla ( @naikio) for his contribution to

```
luigi@luigi-pc:~$ python3 tweets_analysis.py --help

          .//oss+:
/d:      ,`HMMMMMMNydm/
hMMd+`   `NMNMMMMMMNd-
/MMMMMd/-` /MMNMNMNMNM-
.+MMMMMMMNmmMMNMNMNMNM-
SMNMNMNMNMNMNMNMNMNMNs
stMMNMNMNMNMNMNMNMNMNM.
-snMMNMNMNMNMNMNMNMNM/
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:ynNMNMNMNMNMNMNMh.
`:omNMNMNMNMNMNM-
./yNMNMNMNMNMNMny/
`-+ssssso/-`


Made with ❤ - https://www.github.com/luigigubello (and https://www.github.com/naikio)

Wait...

Usage: tweets_analysis.py [OPTIONS]

Options:
  --path TEXT      Path of the Twitter Dataset. Can be a single CSV file
                   or a directory containing multiple CSVs [required]
  -w               Include WordCloud in the analysis.
  --user TEXT      Optional argument. Run the analysis only for the
                   selected user
  --tlang TEXT     Optional argument. Language of tweets to analyze
  --ulang TEXT     Optional argument. Language of accounts to analyze
  --chunksize INTEGER Optional argument. Default is 1000000. Decrease if you
                   run into memory issues
  -v               Optional argument. Verbose mode that print more
                   information
  --csv-out        Optional argument. Write output of analysis to CSV
                   files
```



tweets_analysis.py



Tweets and retweets per month (tweets volume)



Replies, quotes, retweets and hearts per month (engagements volume)



Tweets daily rhythm



Accounts created per month



Tweets grouped by languages or clients

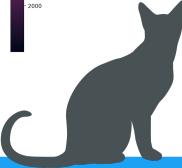
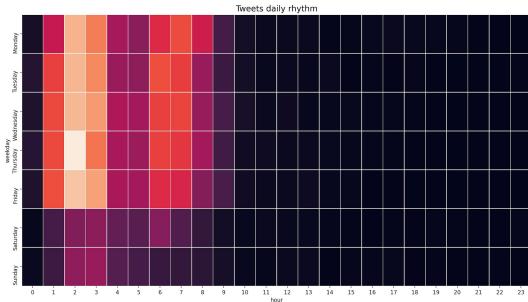
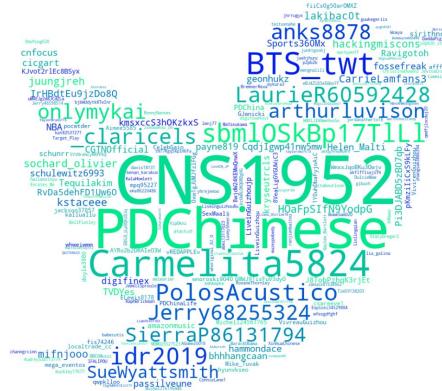


Wordcloud of retweeted users



Wordcloud of hashtags

Wordcloud of retweeted users



Quality vs Quantity

Quality	Quantity
Hashtag and retweeted users wordclouds	Tweets and retweets volume
Users networks	Engagement volume
Analysis of a specific user, hashtag, term, or language	Tweets grouped by languages or clients
Shared links	Accounts created per month
	Tweet daily rhythm



Missing data

- 👉 **IP addresses**, and subnets: Twitter doesn't share from which IPs these bots were tweeting.
- 👉 **@username**, **user ID**, and **name**, if the account has less than 5000 followers: Twitter hashes this data.
- 👉 **followers** and **followings**: we don't have information on followers and followings
- 👉 **favorites**: we don't know which tweets the bots liked
- 👉 **truncated tweets**: tweets are truncated at 140th character



Errors (engineers are human)

- ! Tweets language classification errors
- ! “Minor” errors in the classification of accounts
- ! Data is not well-formatted



Yoel Roth @yoyael

In this case, we initially misidentified 228 accounts as connected to Russia. As our investigations into their activity continued, we uncovered additional information allowing us to more confidently associate them with Venezuela.

1:56 AM · Feb 5, 2019 · Twitter Web App

16 Retweets 43 Quote Tweets 33 Likes

<https://twitter.com/yoyael/status/1092587833020182528>



Yoel Roth @yoyael

Over the weekend, [@josh_emerson](#) brought to our attention some inconsistencies in the information operation datasets we recently released. We appreciate his feedback and want to share an update on what we've learned.

Josh Russell @josh_emerson · Feb 2, 2019

The IRA accounts are on the left, The Venezuela (January 2019, set 2) on the right.
They are the same damn bots.
So which is it? are they Russian or Venezuelan? 🤔

Show this thread

<https://twitter.com/yoyael/status/1092587831468249088>



Metadata

Metadata: “*a set of data that describes and gives information about other data.*” (Oxford Languages)

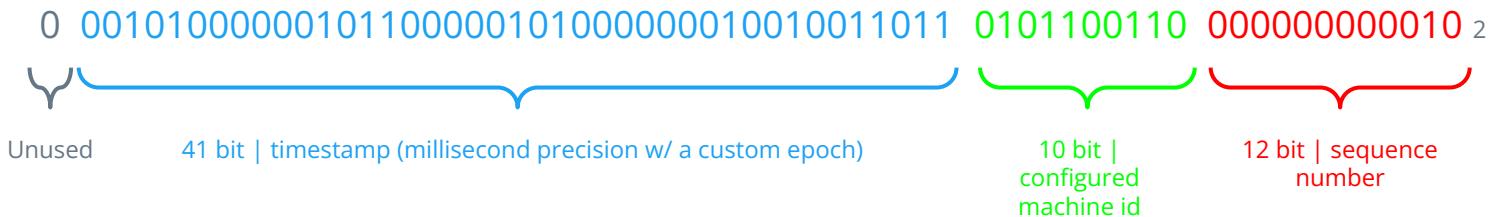
- 👉 **Connections between accounts:** replies, retweets, quotes
- 👉 **Retweeted accounts** and their current availability
- 👉 **Links shared** via tweets or retweets
- 👉 **Snowflake IDs** to know the exact timestamp



Snowflake IDs

Snowflake is a network service for generating roughly sortable unique ID numbers at high scale. This format was created by Twitter and it is used for users and tweets IDs.

1444253608007065602 ₁₀



Extract timestamp from snowflake ID

0 0010100000101100000101000000010010011011 0101100110 000000000010 2

41 bit | timestamp (millisecond precision w/ a custom epoch)

344336893083_{10} + 1288834974657_{10}

custom epoch

1633171867740_{10}

Saturday 2 October 2021 10:51:07.740



```
def get_tweet_timestamp(tid):
    offset = 1288834974657
    tstamp = (tid >> 22) + offset
    utcddttime = datetime.utcfromtimestamp(tstamp/1000)
    print(str(tid) + " : " + str(tstamp) + " => " + str(utcddttime))
```

<https://ws-dl.blogspot.com/2019/08/2019-08-03-tweetedat-finding-tweet.html>





Michele Spagnuolo (miki.it) 
@mikispag

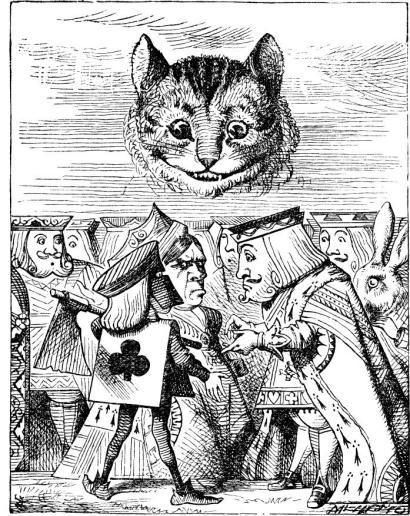
...
Data is a very dangerous form of opinion.
9:31 PM · Jun 27, 2019 · Twitter Web App
6 Retweets 18 Likes

Reply Share Like Retweet

<https://twitter.com/mikispag/status/1144327532042424322>



Internet Research Agency



On 17 October 2018, Twitter released the first two datasets associated with two state-backed information operations:

- 👉 3.841* accounts associated with the IRA ([Russia](#))
- 👉 770 accounts potentially originating in [Iran](#)

Twitter releases these datasets two years later the 2016 US elections. IRA's interferences and Russian coordinated operations were reported also for Facebook, Youtube, Reddit, Tumblr, and other west web communities and social media.

In the first version there are 3.836 accounts [\[source\]](#), in the second version Twitter removed misidentified 228 accounts as connected to Russia



Cross-platform operation

TECH • FACEBOOK

Facebook Has Removed Hundreds of Accounts Linked to a Russian Troll Farm

<https://time.com/5227225/facebook-russia-troll-accounts/>

GOOGLE \ US & WORLD \ TECH \

Russian groups made 1,100 YouTube videos during 2016 US election

By Jacob Kastrenakes | @jake_k | Oct 30, 2017, 7:58pm EDT

<https://www.theverge.com/2017/10/30/16578810/google-russian-propaganda-disclosure>

Reddit has banned 944 accounts linked to the IRA Russian troll farm

Lucas Matney @lucasmtny / 10:30 PM GMT+2 • April 11, 2018

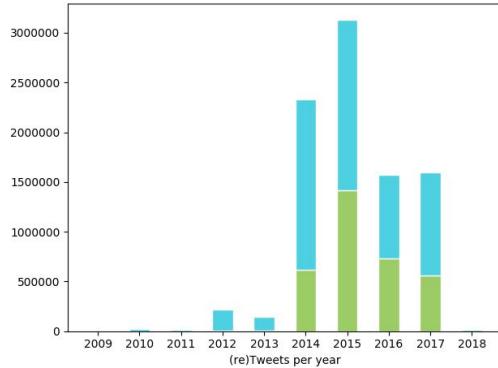
Comm

<https://techcrunch.com/2018/04/11/reddit-bans-944-accounts-linked-to-russian-internet-research-agency/>



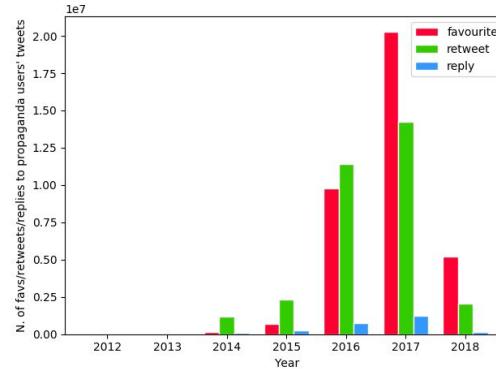
Numbers and charts

(related to the IRA dataset released in October 2018)



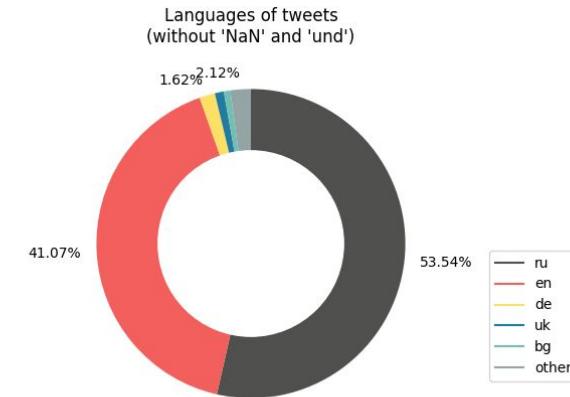
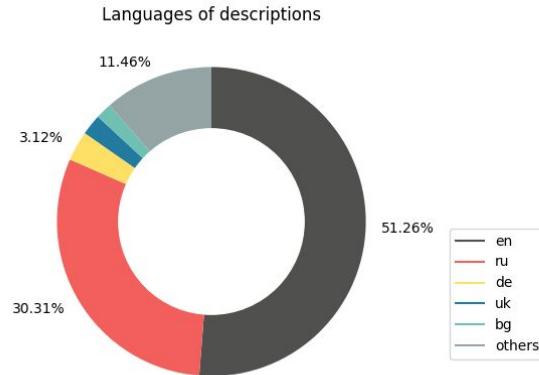
3.836 accounts, 68% created between 2013 and 2014, sent ~ 9 million tweets from 2012 to 2018, ~ 3.1 million tweets (45% retweet) only in 2015.

Tweets and engagement are not aligned. More than 50% of tweets were sent between 2014 and 2015, but engagement has grown in 2016 and 2017: ~ 30 million likes, ~ 25,6 million retweets and ~ 1,96 million replies.



Numbers and charts

(related to the IRA dataset released in October 2018)



The main default languages of the accounts are **English** (62,1%) and **Russian** (27,1%), followed by Spanish (6,1%) and **German** (2,9%).

This data is aligned with the language classification of the accounts' descriptions and the language classification of tweets.



Numbers and charts

(related to the IRA dataset released in October 2018)

Most used words in the descriptions



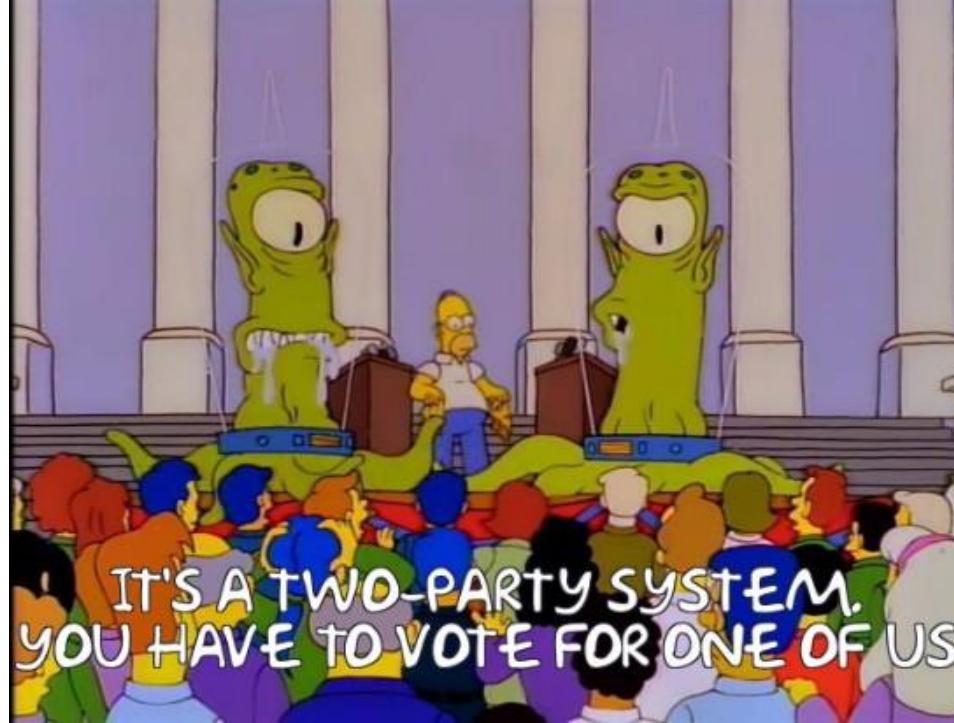
73% of accounts has a description.

The most common word is “follow” (in 203 descriptions, 180 times followed by the pronoun “me”).

The other common words are “love” (128), “conservative” (121), “life” (119), “Trump” (103), “maga” (96) and “news” (78). The word “blacklivesmatter” is in 23 descriptions and the emoji 🇺🇸 is in 16 descriptions.



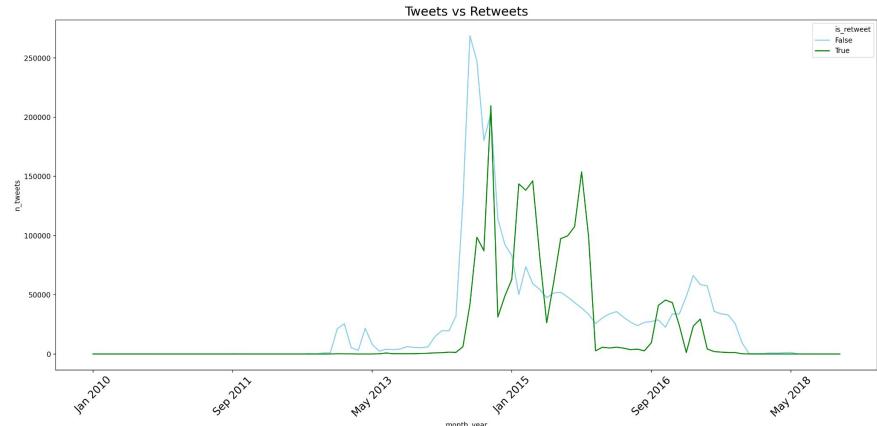
The Simpsons predicted this



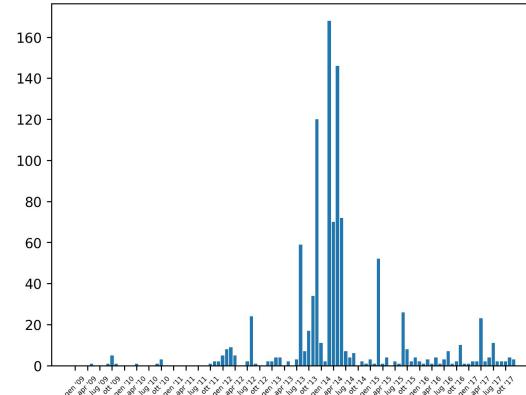
Russian tweets

Russian tweets have had two minor spikes between December 2012 and April 2013, a big spike between **June 2014** and **November 2014**, decreasing until a second spike in March 2017.

Russian accounts were created mostly between late 2013 and 2014.



Number of created Russian accounts by month



Internal propaganda

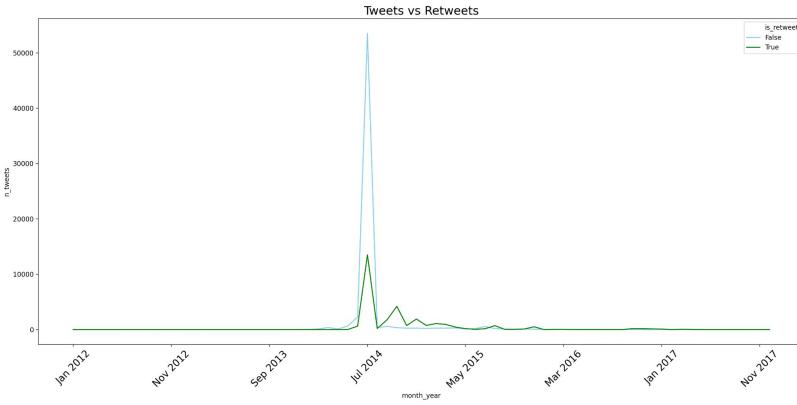
53% of tweets (without considering 'NaN' and 'und') are written in Russian, this is because IRA information operations started by spreading state propaganda into the Russian borders.

4 out of the 10 most popular hashtags are related to Ukraine and the МН17 plane crash.

Wordcloud of hashtags

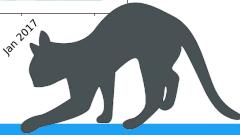
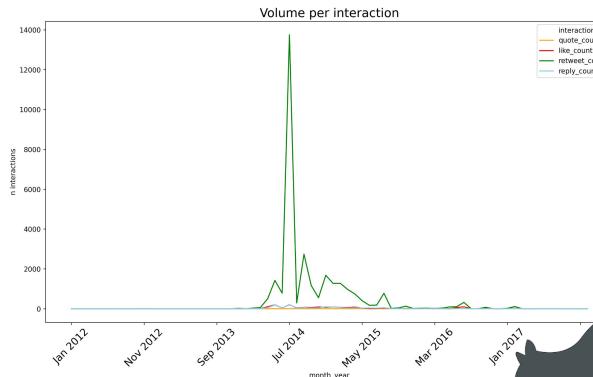


MH17 plane crash



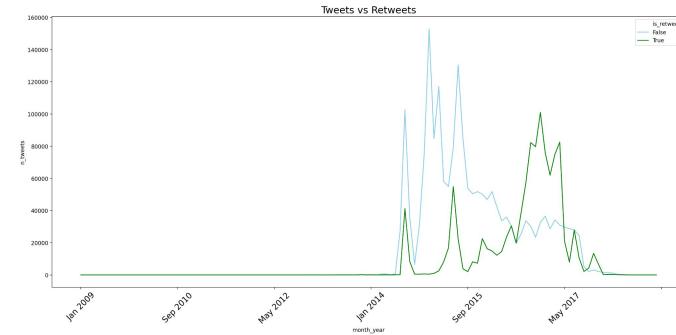
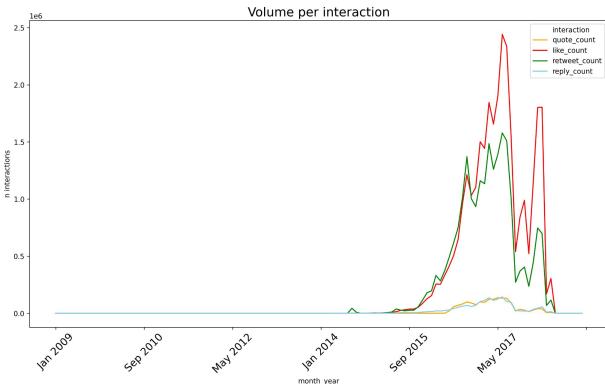
On 17th July 2014, the civilian airplane MH17 crashes. After years of collecting evidence, in 2016, a Dutch-led international team says that the civilian airplane was hit by a Russian missile launcher.

- 👉 #украина ([Ukraine](#), 17.956 times)
- 👉 #провокациякиева ([Provocation of Kiev](#), 16.522)
- 👉 #киевсбилбонг ([Kiev shot down the Boeing](#), 16.378)
- 👉 #киевскажиправду ([Kiev tells the truth](#), 16.270)



English tweets

The IRA started to spread disinformation two years before the elections, by producing a huge amount of tweets between July 2014 and May 2016. They changed their strategy during the elections year: between June 2016 and April 2017 they increased the number of retweets.



The tweets engagement started to grow dizzyly during 2015, but the maximum spike is only in 2017, between May and July, after the new president has been elected.

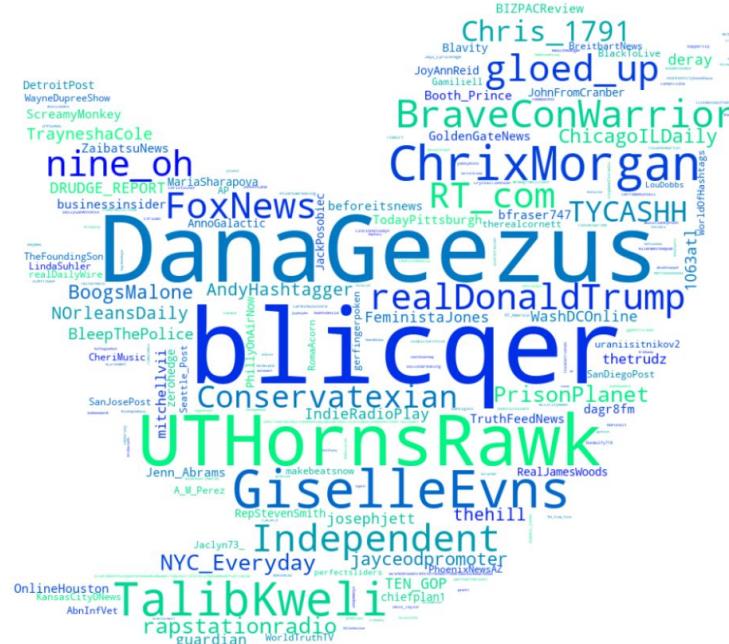


Hack local news...

In 2014, many fake local news accounts were created. They were active for years, collecting more than 5,000 followers per account, and highly retweeted by other IRA bots.

In the Top 100 most retweeted users by bots, 14 accounts are of this kind. 11 out of 14 accounts changed their @username at least one time over time.

Wordcloud of retweeted users



...and mass media

The Washington Post, Miami Herald, InfoWars and other U.S. sites spread Russian propaganda from Twitter

Tweets from 2,752 fake Twitter accounts created by Russian government trolls found their way into U.S. news stories.

By [Tony Romm](#) and [Rani Molla](#) | Nov 3, 2017, 11:24am EDT

Russian trolls' tweets cited in more than 100 UK news articles

Posts from accounts identified in June add to those previously spotted in British media

When the list of accounts was released, different mainstream media found IRA's tweets cited in their pages and news.
Trusted media can make you a trusted source.



social engineering: "the artificial controlling or changing of the groups within society, usually according to particular political beliefs" (Cambridge Dictionary)

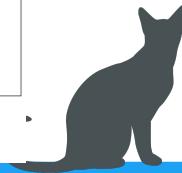
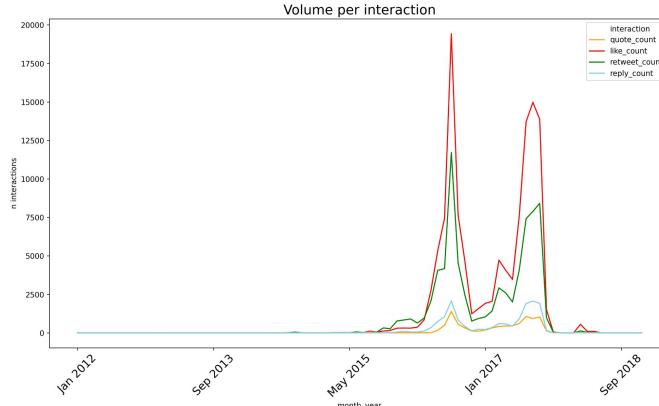
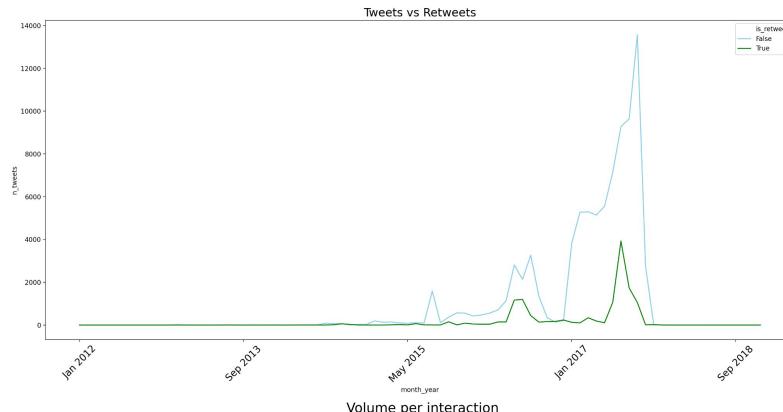
**Social media manipulation is literally
social engineering**



German tweets

Germany has been another IRA target, apparently. There is a spike in German tweets during 2017, with a maximum in September.

Federal elections were held in Germany in the same month.





The main trends are related to internal politics, foreign politics, refugees, terrorism, Trump and Brexit.

German tweets related to Brexit - #BritainInOut, #Brexit, #GoodbyeUK, #BrexitOrNot - seem to have been created to polarize people on the topic.





People's Republic of China



Premises

- 👉 Two datasets related to Chinese (PRC) state-linked information operations were shared, in [August/September 2019](#) and in [May/June 2020](#);
- 👉 Contextualizing rightly PRC-backed propaganda is not easy. Twitter shared data with the [Australian Strategic Policy Institute \(ASPI\)](#) and [Stanford Internet Observatory \(SIO\)](#) to better investigate the operations.

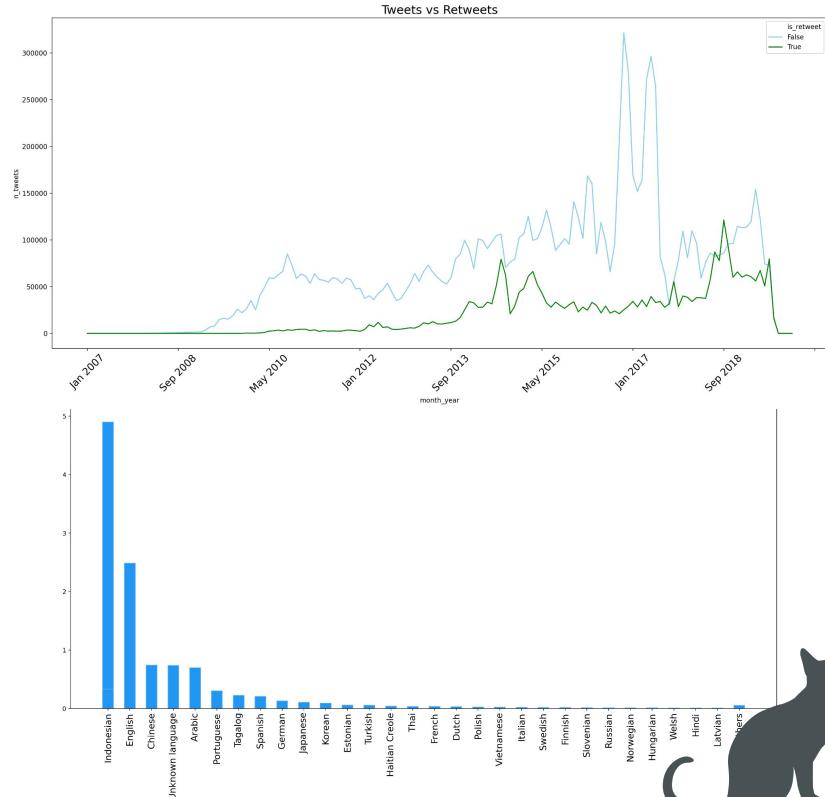


Numbers and charts

(August/September 2019)

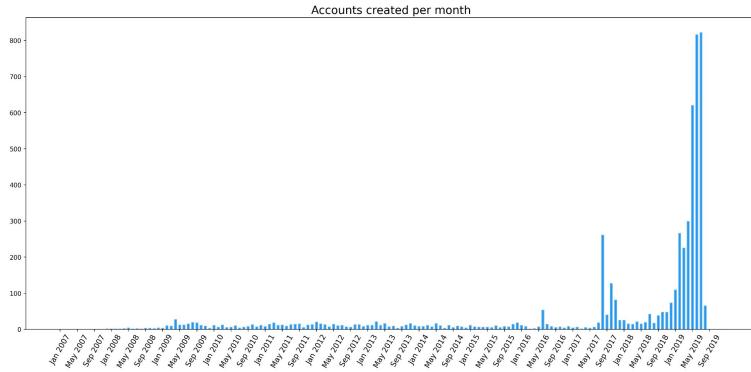
The most intensive activity took place between 2016 and 2017, but it is not related to the coordinated information operations from the PRC.

In over 13 million tweets, ~ 4.1 million tweets are written in Indonesian, ~ 2.4 million are written in English, and only ~ 800.000 tweets are written in Chinese.



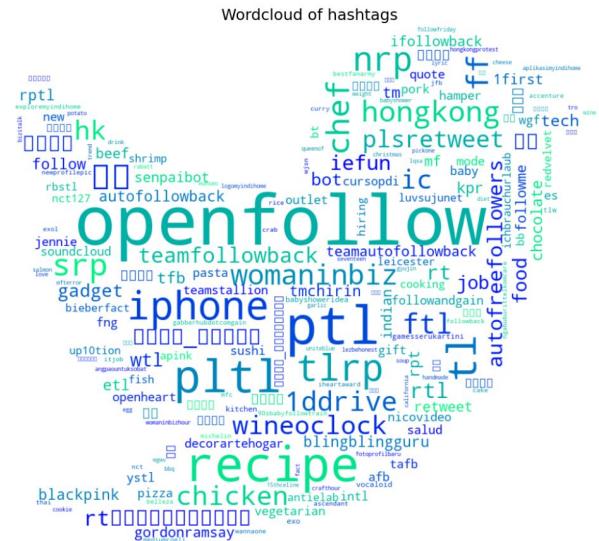
Numbers and charts

(August/September 2019)



👉 (this graph shows that a "small" group of accounts, created between 2009 and 2017, has generated most of the tweets)

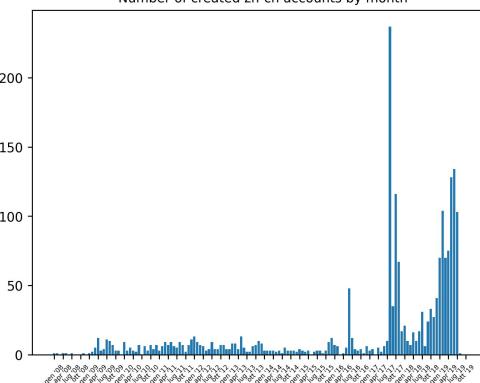
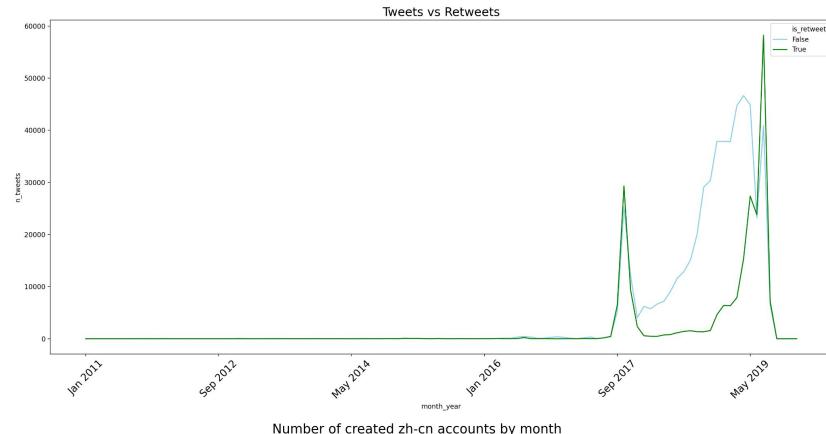
Many accounts are just spam bots that tweeted "classic" **follow4follow** hashtags to increase the number of followers. The main trends spread by Chinese bots are related to the **Hong Kong protests** (2019).



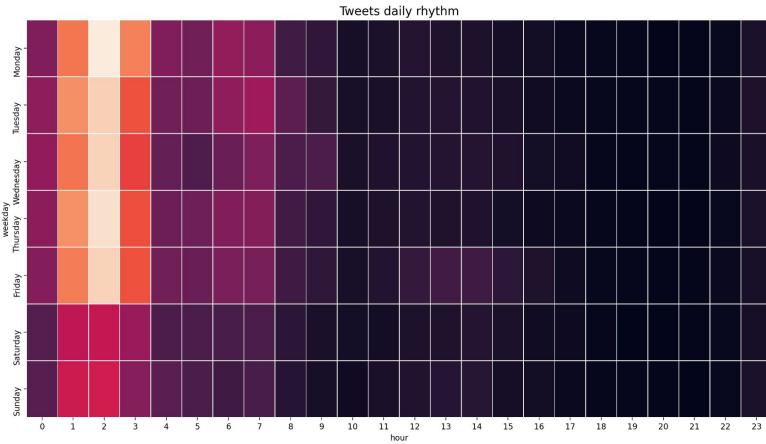
Hong Kong protests

Less than 1 million tweets written in Chinese, and the volume grew quickly between October 2018 and July 2019.

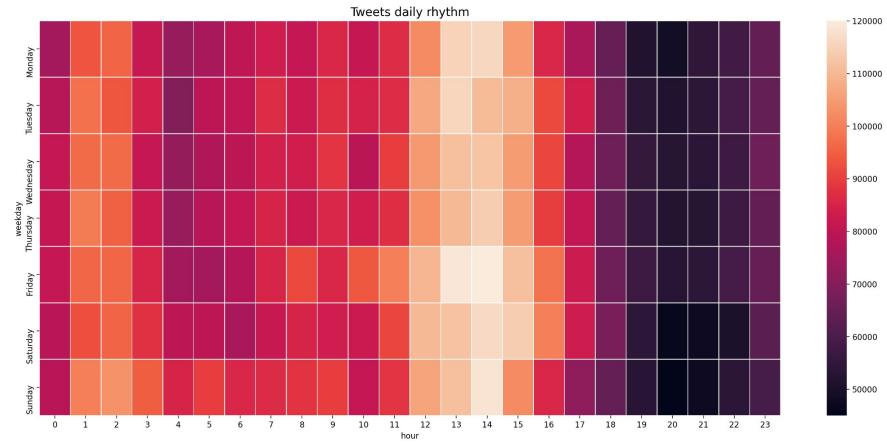
The most frequent hashtags are all related to Hong Kong ([#游行](#), [#HongKong](#), and [#HK](#)), because the goal was to spread an alternative narrative about the 2019 Hong Kong protests.



Tweets daily rhythm



Chinese tweets daily rhythm



All tweets daily rhythm



Re-enabled accounts

Hash reversing

$\forall \text{user } s.t. \ followers < 5000, \text{ if } @\text{hashed_userid} \text{ is in tweet_text}$
 $\Rightarrow f^{-1}(@\text{hashed_userid}) \text{ is in user_mentions}$

$\forall \text{user } s.t. \ followers < 5000, \text{ if } @\text{hashed_userid} \text{ is in tweet_text}$
 $\text{and } \text{len}(\text{user_mentions}) = 1 \Rightarrow f^{-1}(@\text{hashed_userid}) = \text{user_mentions}$

GET /2/users/:id

Theoretically, all accounts shared by Twitter should be suspended, but at least three accounts have been re-activated over time ([Spanish e-gamers](#)).



Propaganda grew, and so did Twitter



[American McGee's Alice](#)



Second dataset

Propaganda grew, and so did Twitter.

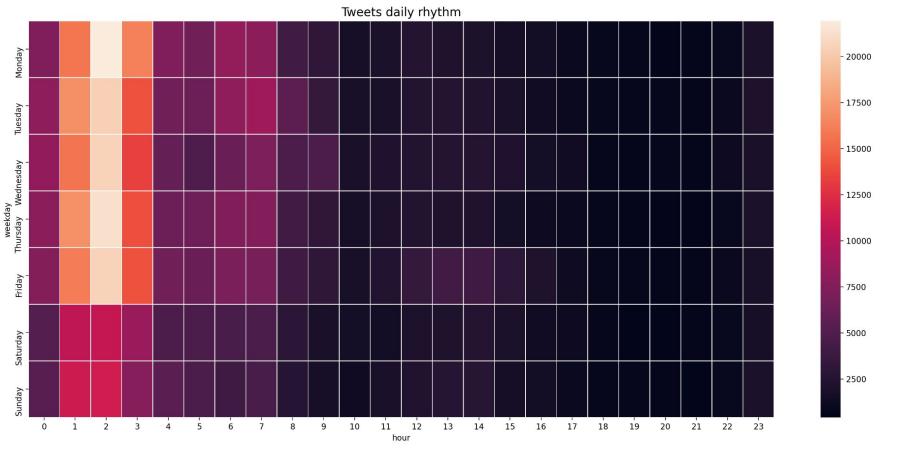
- 👉 “Our proactive removal of this network from Twitter is a **direct result** of the technical efforts we instituted after thoroughly studying and investigating past coordinated information operations from the PRC.”
- 👉 “[...] Of the approximately **150,000 amplifier accounts**, the majority had little to no follower counts either and were **strategically designed to artificially inflate impression metrics** and engage with the core accounts.”



Similarities and differences

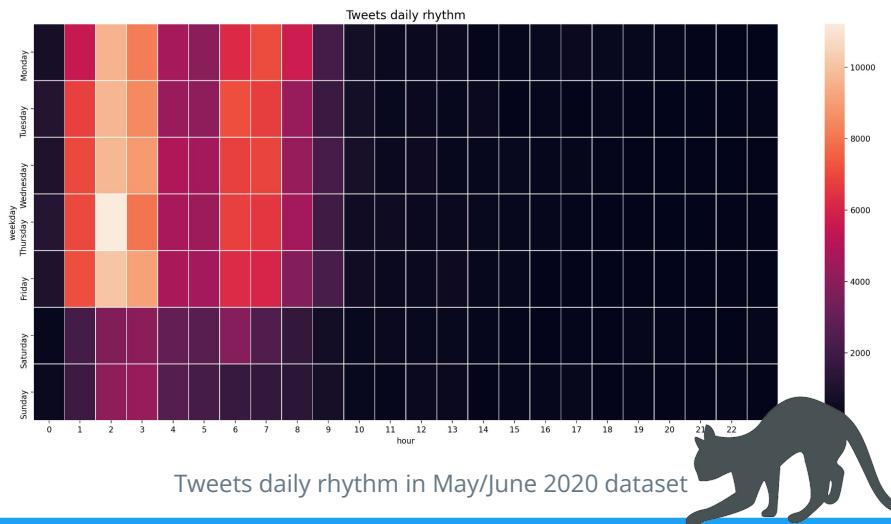
Chinese tweets in the first dataset and tweets in the second dataset follow the same pattern: tweets daily rhythm covers Beijing timezone (working hours), and the accounts are **not active during the weekend**.

Before



Chinese tweets daily rhythm in Aug./Sep. 2019 dataset

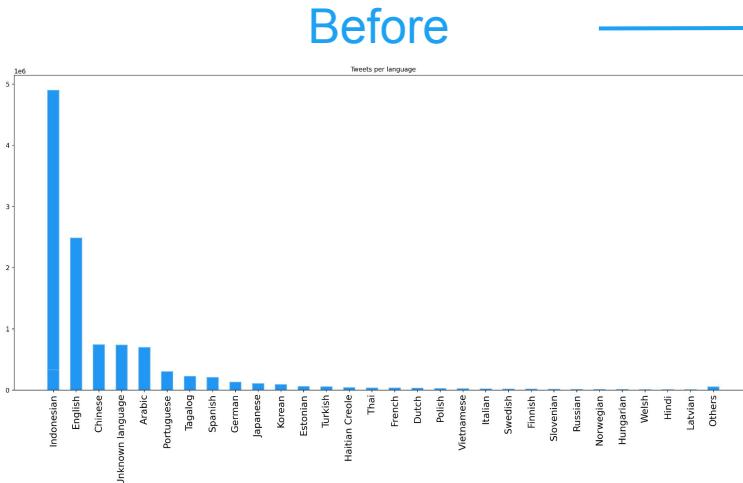
After



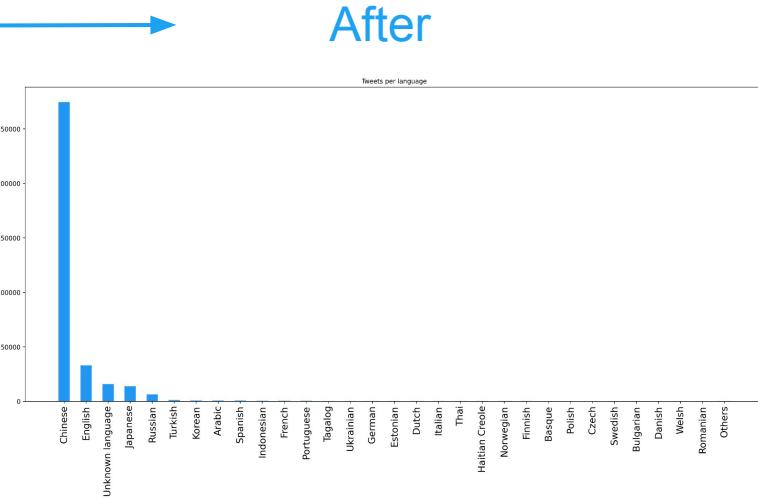
Tweets daily rhythm in May/June 2020 dataset

Similarities and differences

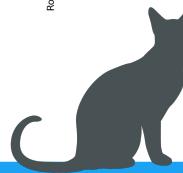
An important difference is the languages present in the dataset: most tweets are in Chinese, because it better focalizes on PRC-linked accounts.



Tweets languages in Aug./Sep. 2019 dataset



Tweets languages in May/June 2020 dataset



Similarities and differences

Like in the previous dataset, the main trends are related to **Honk Kong protests** and **Guo Wengui**, an exiled Chinese billionaire and political dissident. And to lesser extent, Covid 19.

Before

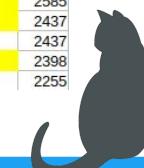
hashtags	times
香港	40711
hongkong	29866
hk	25257
游行	16513
逃犯条例	15923
郭文贵	8968
整点报时	5917
逃犯条例	5421
暴徒	5395
antielab	3240
逆行	3169
美景中国	2775
民阵	2592
反送中	2219
hongkongprotest	2114
暴力	1832
反修例	1681
守護香港	1524
文化中国	1478
大骗子	1364

Hashtags in Chinese tweets in Aug./Sep. 2019 dataset

After

hashtags	times
香港	48629
郭文贵	40029
班农	8327
暴徒	8033
守護香港	7739
肺炎	6048
病毒	4836
守护香港	4452
香港警察	4235
游行	4193
covid19	3935
黑警	3926
疫情	3343
贝lesgue	3155
废青	2967
香港暴徒	2601
hongkong	2585
香港逆行	2437
止暴制亂	2437
香港游行	2398
暴徒废青	2255

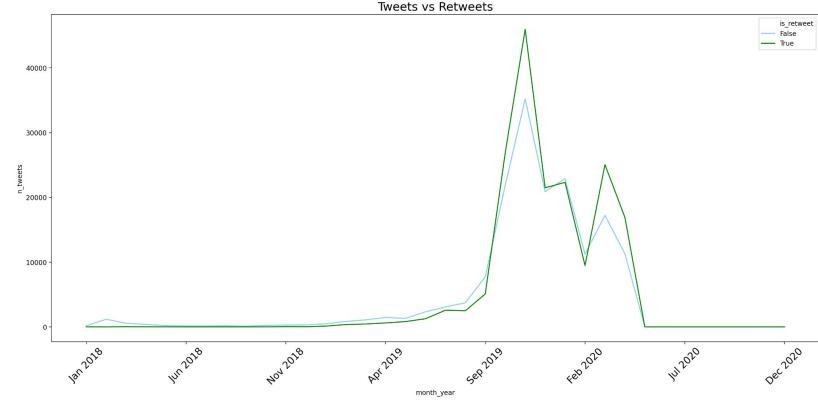
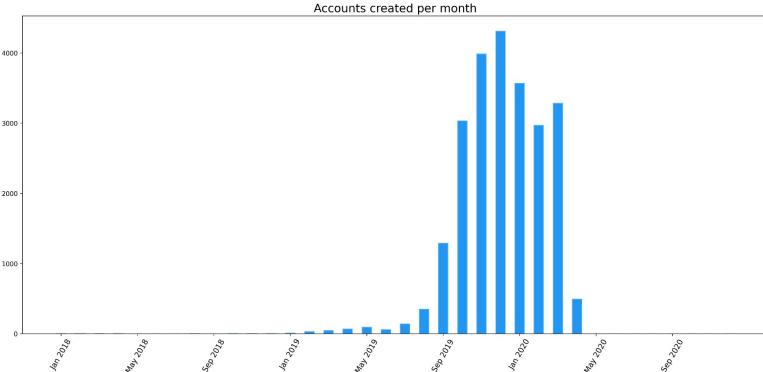
Hashtags in May/June 2020 dataset



Numbers and charts

(May/June 2020)

In the dataset, there are ~166.000 tweets and ~182.000 retweets, which are “aligned”, and two spikes: October 2019 (before COVID-19) and March 2020.



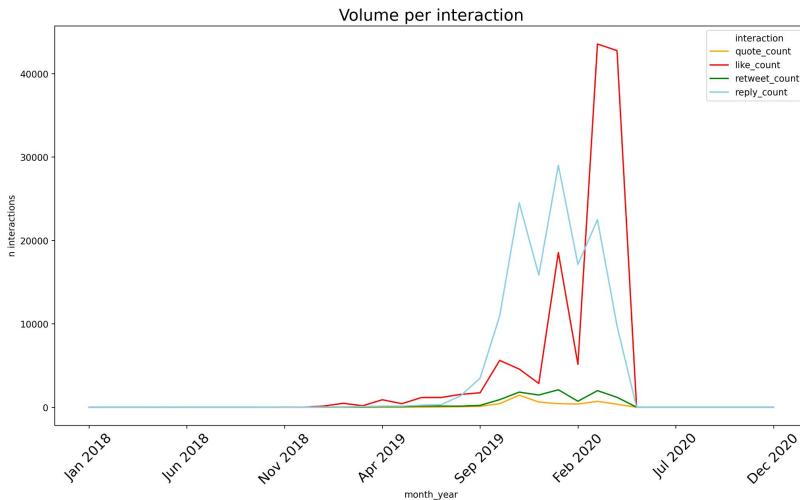
The core accounts were created between September 2019 and April 2020, month in which Twitter removed them.



Numbers and charts

(May/June 2020)

Most of tweets are related to **Hong Kong protests** (香港, 暴徒, 守護香港) and the political dissident **Guo Wengui** (郭文贵, 班农). COVID-19 related tweets are present, but in a lesser degree.



In March 2020 amplifier accounts came into play, by strongly **amplifying the tweets of core accounts**. In April 2020, Twitter suspended the accounts.



Italian tweets

- 👉 **81:** tweets classified as Italian (but many are misclassified)
- 👉 **25:** Italian tweets of actual interest, all retweeted by the same hashed account, which are not in the dataset

These 25 tweets were retweeted in three distinct moments by an account created on 23 February 2020:

- 👉 10 retweets on **25 March 2020, from 04:59 to 05:06**
- 👉 10 retweets on **27 March 2020, from 06:29 to 06:30**
- 👉 5 retweets on **27 March 2020, 13:30**



tweet_text
RT @KellyWa26863690: Che bella ragazza, che bella storia. #covid_19italia #coronaitaly https://t.co/Ej8MGtaIqq
RT @KelseyBaumgart3: Respect and Love! Facciamo l'unione ITALIA+CINA, il coronavirus e' il nostro nemico. Respect and Love! #Lombardia #It...
RT @DmHM5vfpAbRGMlv: L'origine del virus non importa piu' , il coronavirus e' un problema globale. Ma qualcuno di noi consiste e' causato d...
RT @KellyWr04794277: Non importa quanto siano bravi gli altri, si puo sempre trovare pregiudizio e odio intorno a noi. Ma rispetto a questa...
RT @KatiePe80783620: Tutto il mondo deve unirsi nella lotta contro il coronavirus. A parte le nazionalità, le razze, i colori della pelle e...
RT @KendraB59536373: Che bella ragazza, molti di noi insultano i cinesi, ma adesso ci stanno aiutando. #forzalombardia #Italy https://t.co/...
RT @Kimberl09943966: Respect and Love! Facciamo l'unione ITALIA+CINA, il coronavirus e' il nostro nemico. Respect and Love! #Lombardia #It...
RT @KatieCa31961577: Puodarsi che il virus proviene dalla Cina, ma i cinesi sono l'unico che ci aiutano. Ci hanno regalato 9 esperti del co...
RT @KelleyL45524558: Le persone da altre parti del mondo indossano le maschere e fanno selfie a casa, questa ragazza cinese sembra una sper...
RT @Kimberl19654185: Tutto il mondo deve unirsi nella lotta contro il coronavirus. A parte le nazionalità, le razze, i colori della pelle e...
RT @TraceyS85455998: E' il momento di smettere a dare la colpa. Il nostro nemico e' covid-19, non e' un paese o una persona. Coraggio e gran...
RT @watson_rachelle: In questo momento Europa ci sta ammazza! Il 4 marzo la Germania addirittura ha bloccato 850mila nostre mascherine
RT @LaurenB92841346: Sta cosa notizia ha portato la speranza ad ogni italiano. Che vergogna ad essere un europeo!#COVID2019italia #coronaitaly ht...
RT @DoraRod29462446: Avevamo 2 mesi per prepararci per bene invece parte di deridere cinesi non abbiamo fatto nulla. Ora tocca ai cinesi ad...
RT @CarrieHeiserman: Wow, non mi aspettavo che la Cina ha mandato i medici per darci una mano! Non me ne frega se fosse la loro propaganda...
RT @AlbaLop45857205: Quando ho visto in televisione che il gruppo dei medici cinesi sono arrivati Italia , stavo quasi per piangere. Ragazzi...
RT @Stephan75026851: Dobbiamo sostenerne l'autoisolamento! Questi cinesi stanno proteggendo tutta l'Italia! #COVID2019italia #Italy https://...
RT @KimHern38860309: Hanno fatto un ottimo lavoro, sia per se stessi che per l'Italia, almeno hanno impedito la diffusione del virus e non...
RT @LaurenA23919279: ra non sono i cinesi a infettare il coronavirus! Ma noi stessi! La prima persone che ha portato il virus a Prato è sta...
RT @HeidiWi31992504: La gente accorre in Italia, i medici cinesi portando i materiali utili accorrono in Italia, che meraviglia!#covid_19it...
RT @Michell71502467: Sono felice di sapere che questi cinesi hanno intrapreso simili azioni, non solo proteggendo se stessi, ma anche gli i...
RT @JackieK84603249: Quando l'UE e i politici non riescono a salvare le vite, le persone possono solo salvare se stesse.#Lombardia #Italylo...
RT @BarbWii11386782: In questo momento, in molti paesi europei, alcune persone che risultano positive per Covid-19 devono tornare a casa da...
RT @Caitlin09852574: Se tutti possono essere come loro, il mondo sarà migliore!#coronaitaly #Lombardia https://t.co/SinKYSEL5M
RT @HeatherSchuel10: Mi sento triste per queste persone. Stanno facendo del loro meglio per proteggere se stessi e gli altri, ma il mondo l...



COVID-19, Italy, Lombardia

- 👉 25 accounts wrote pro-Chinese government original content in March 2020, related to COVID-19 and Lombardia.
- 👉 Tweets are written in Italian, but they contain obvious grammatical mistakes.
- 👉 All accounts created on 16, 17 or 23 March 2020. Tweets sent on 23 March 2020, from 07:24 to 07:58, and on 26 March 2020, from 9:26 to 10:12.
- 👉 All the accounts are now suspended, but they are not in the core group.



Was Italy an I.O. target?

In the dataset, there is not enough data to answer, but the previous accounts and tweets look like a **coordinated inauthentic behavior**. But we can use the little information that we have to look for similar accounts and tweets in the future (or in the past).

- 👉 High ratio likes:retweets
- 👉 Low followers
- 👉 Spam likes and retweets in the account history
- 👉 Grammatical errors in the original content



bqgfhomdiiw
@bqgfhomdiiw

Solo in tempo di crisi si vede bene chi e' il nostro amico invece chi e' il truffatore con la Maschera.
[#italylockdown repubblica.it/solidarieta/vo...](https://italylockdown.repubblica.it/solidarieta/vo...)
[#covid_19italia](https://covid_19italia)

[Translate Tweet](#)



repubblica.it
Coronavirus, a Fiumicino un aereo con aiuti della Croce Rossa cinese: ventilatori...
Francesco Rocca, presidente della CRI: "Mettiamo a disposizione del Governo italiano i dispositivi. Non risolviamo tutto, ma è una risposta concreta..."

9:53 AM · Mar 24, 2020 · Twitter Web App

434 Likes

<https://twitter.com/bqgfhomdiiw/status/1242374011624935424>

Davie
@pwh5me

responsabilità sociale. [#forzalombardia](#) [#coronaitaly](#)

[Translate Tweet](#)



ilfattoquotidiano.it
Coronavirus, la comunità cinese di Prato senza contagi. Grazie al controllo reciproco...
Alcune persone sono già alla seconda o alla terza quarantena. Nella comunità di Prato, tra le più popolose del Paese, le misure di autocontrollo sono state ...

11:13 AM · Mar 26, 2020 · Twitter for iPhone

4 Retweets 158 Likes

<https://twitter.com/pwh5me/status/1243118980002271234>

sqqerszfbnd
@sqqerszfbnd

Spero che non ti incolpi più, la cosa più importante ora è aiutarci a vicenda contro Covid-19 e dobbiamo pregare per tutte le vittime! [#ItalyCoronavirus](#)
ilfattoquotidiano.it/2020/03/11/cor... [#quarentena](#) 😊

[Translate Tweet](#)

10:06 AM · Mar 24, 2020 · Twitter Web App

252 Likes

<https://twitter.com/sqqerszfbnd/status/1242377111651799040>



Conclusions



Can we measure the impact?

Which metrics should we use to measure the impact of an information operation?

There is no answer but it is reasonable to assume:

- 👉 Engagement (followers, likes, retweets, ...) measures quantity, not the quality of the information operation, and it could be boosted by other bots.
- 👉 Trusted sources (verified accounts, mainstream media, ...) that spread bots' content can have a high impact also outside of the social network.



Target

Journalists, mainstream media, politics, and popular accounts can be a direct or indirect target of information operations. Not sharing untrusted sources can mitigate the impact of an information operation.

- 👉 Don't trust every account or content on Twitter, even if it is viral.
- 👉 Retweets and likes boost the engagement, especially if made by popular or verified accounts.
- 👉 Don't embed unverified tweets on mainstream media web pages.
Don't make them trustable.



End
(thank you 🦄)

