



# Conspiracy Theory & “Fake News” - Related Networks on Twitter

by Katharina Börsig  
December, 2020

Link to image, accessed: 15.12.2020:  
<https://blog.odellproject.org/global-twitter-heartbeat-high-resolution-figures/>

# Why does it matter?



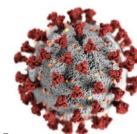
- Fast International Spread



- Tendency for Violence



- Misinformation during Global Crises



Links to images, all accessed: 15.12.2020:

[https://upload.wikimedia.org/wikipedia/commons/4/47/Contrail\\_fourengines.jpg](https://upload.wikimedia.org/wikipedia/commons/4/47/Contrail_fourengines.jpg)

<https://history.nasa.gov/ap11ann/kiosphotos/5875.jpg>

<https://images.theconversation.com/files/218823/original/file-20180514-100722-1yxq7ip.jpg?xlib=rb-1.1.0&n=45&auto=format&w=926&fit=clip>

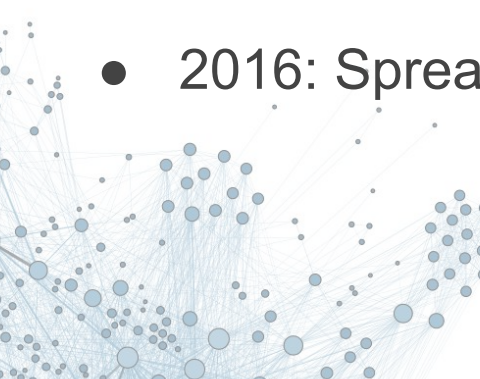
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[https://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmccms/s3fs-public/styles/people\\_governance/public/advanced\\_page/featured\\_media/Coronavirus\\_Covid-19.png?ehllQl9XZD\\_vpl1CAcihHKyI\\_QVSiZhg&itok=HRi529nY](https://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmccms/s3fs-public/styles/people_governance/public/advanced_page/featured_media/Coronavirus_Covid-19.png?ehllQl9XZD_vpl1CAcihHKyI_QVSiZhg&itok=HRi529nY)

<https://upload.wikimedia.org/wikipedia/commons/7/77/QAnon.svg>

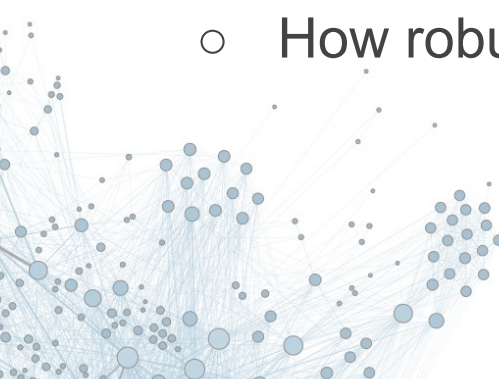
# History of Conspiracy and Fake News



- Superstition
  - Propaganda (20th Century)
    - Edward Louis Bernays
    - Manipulation for Political Gain
- Conspiracy Theories
- Crisis Situations
  - Political Purpose (e.g. incite Anti-Semitism)
- 2016: Spread of “Fake-News” for Profit (Veles, Macedonia)
- 


# Research on Conspiracy Social Networks

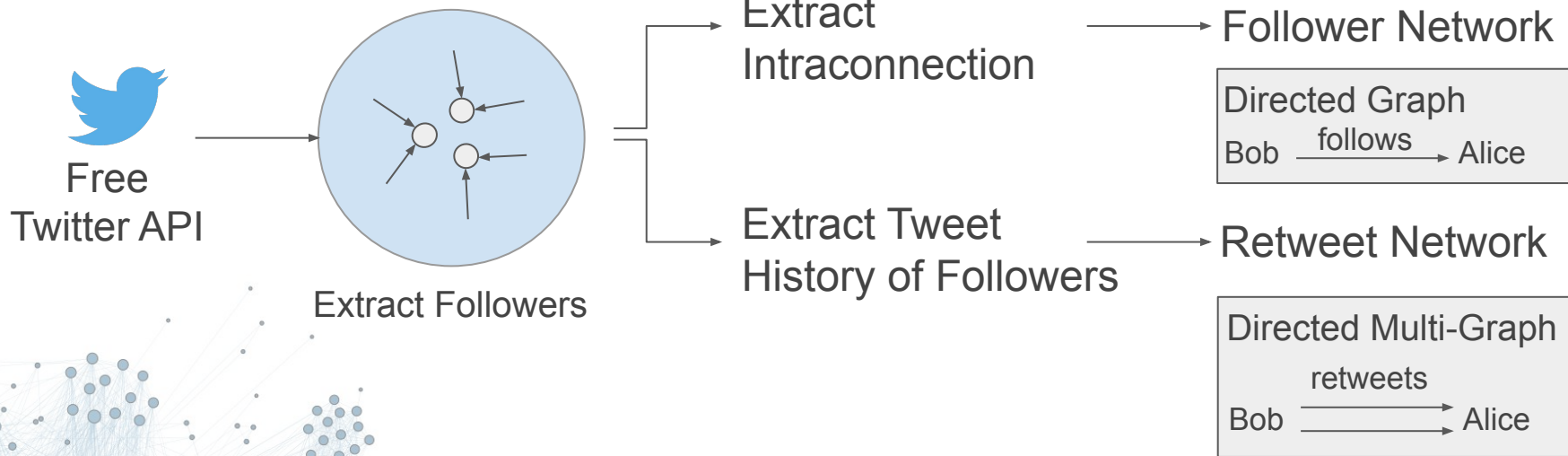


- Conspiracy Networks: 5G, QAnon
  - Hashtag Evolution: #FilmYourHospital
  - What is interesting:
    - Who are the actors?
    - What are their roles?
    - How robust is the network?
- 

**Aim of Conspiracy Network Research:**  
General Conspiracy Theory & “Fake News” Behaviour

# Germany's Fake News Network

- 3 Primary Accounts:  
Fake News about Covid-19 

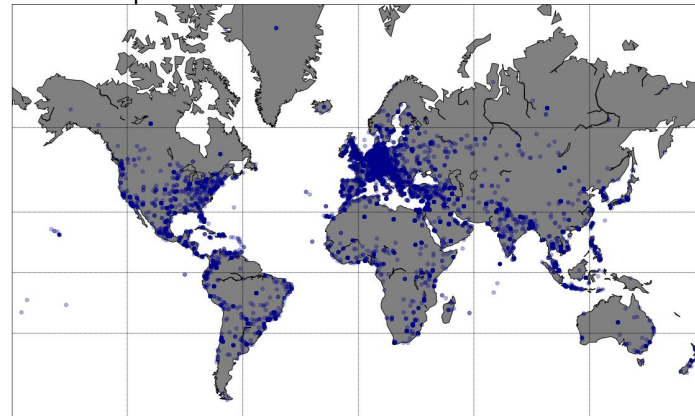




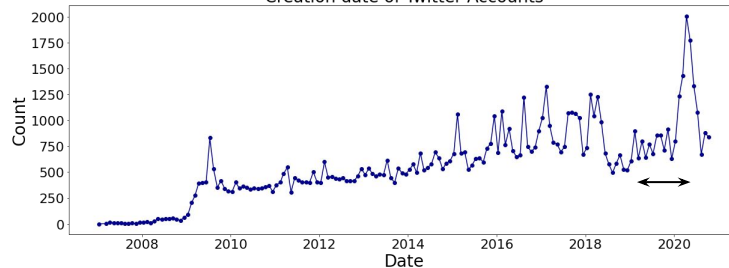
# Who are the Followers?

- 81K Twitter Accounts
- 66% from Germany
- Internationally distributed
- Peak Newcomers: Covid-19 era

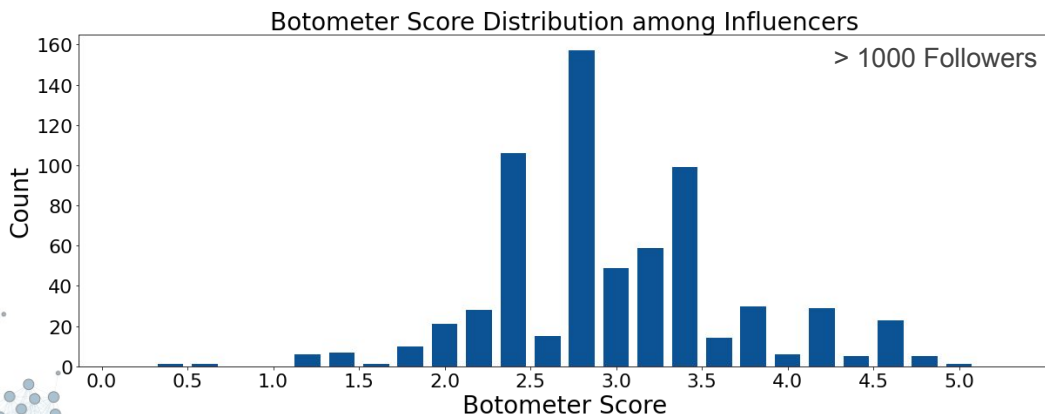
Spatial Distribution of Twitter Accounts



Creation date of Twitter Accounts



# Are the Top Followers real People?



# Clusters among the most popular Tweeters

## Russian Affiliated Media

## Official AFD

- Official Local Groups
- Members of Parliament

## German Patriots

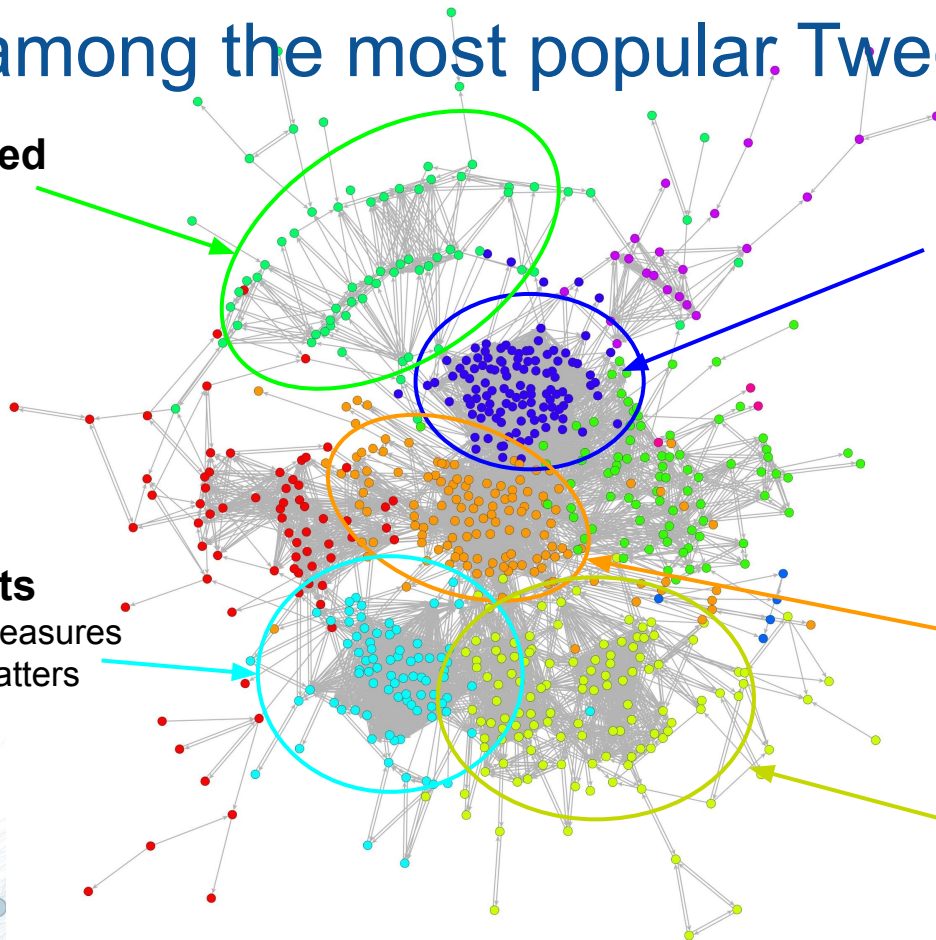
- Anti-Covid Measures
- #WhiteLifeMatters

## AFD Supporter

- Anti-Covid Measures

## Conspiracy Theorists

- ChemTrails, 5G
- Covid Fake News
- #TrumpWon

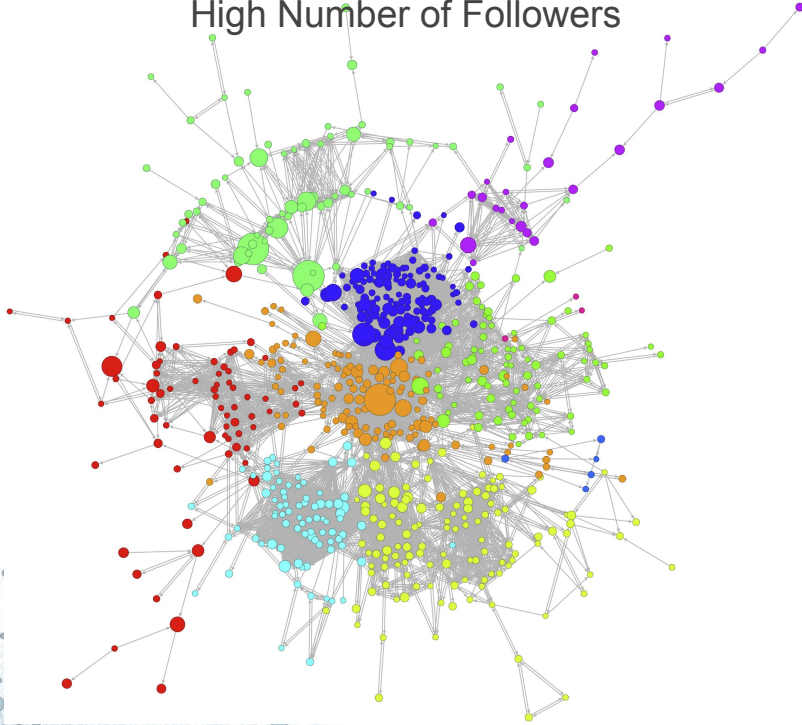




# Influencers vs Audience

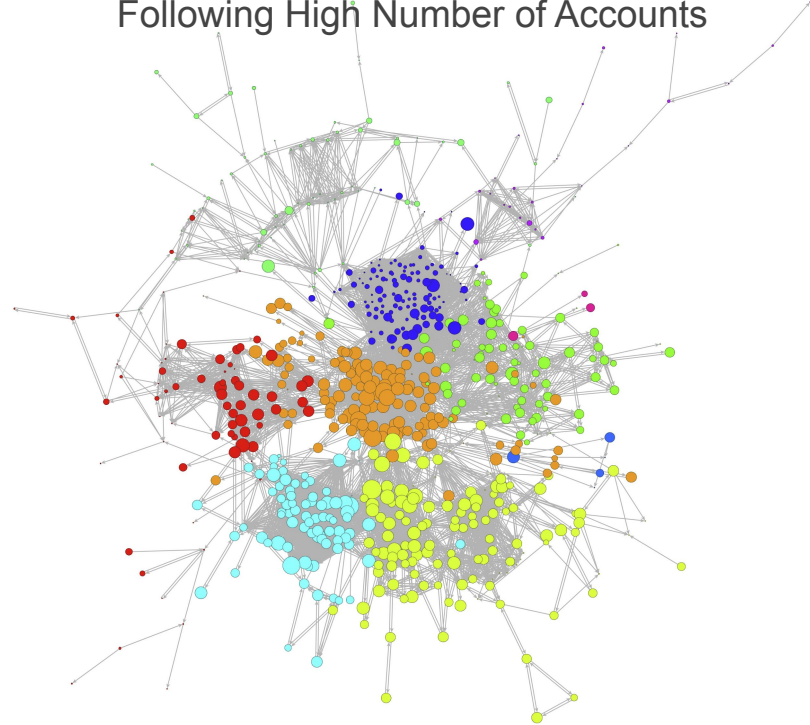
## Influencer

High Number of Followers



## Audience

Following High Number of Accounts



# How interactive are the Followers?

Interaction: Retweet or @Annotate

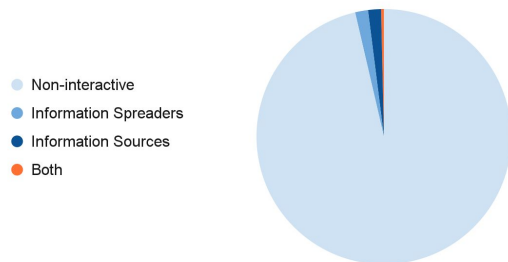
**Sources:** Most retweeted/annotated accounts

(98% Percentile Indegree)

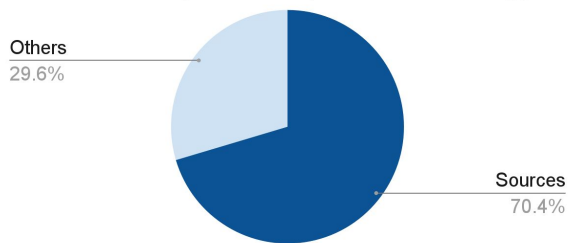
**Spreaders:** Accounts retweeting/annotating the most

(98% Percentile Outdegree)

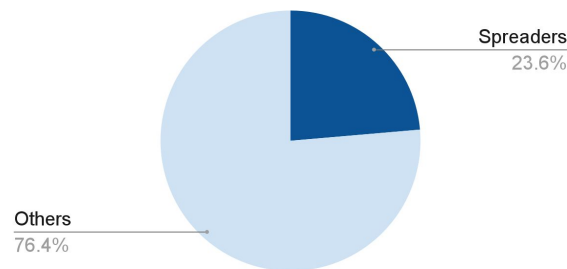
Interactiveness between Followers



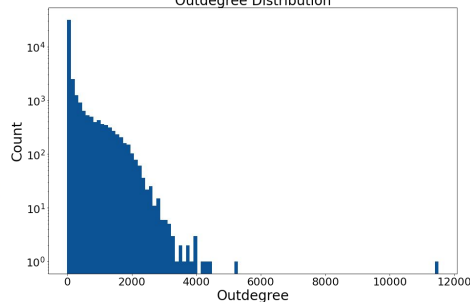
Information Spreaders (most annotating)



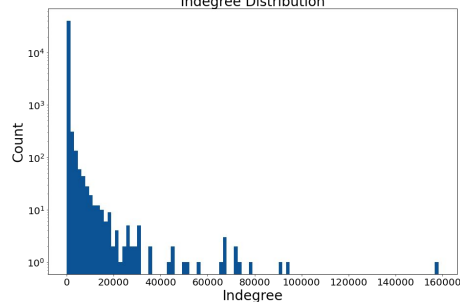
Information Sources (most annotated)



Outdegree Distribution



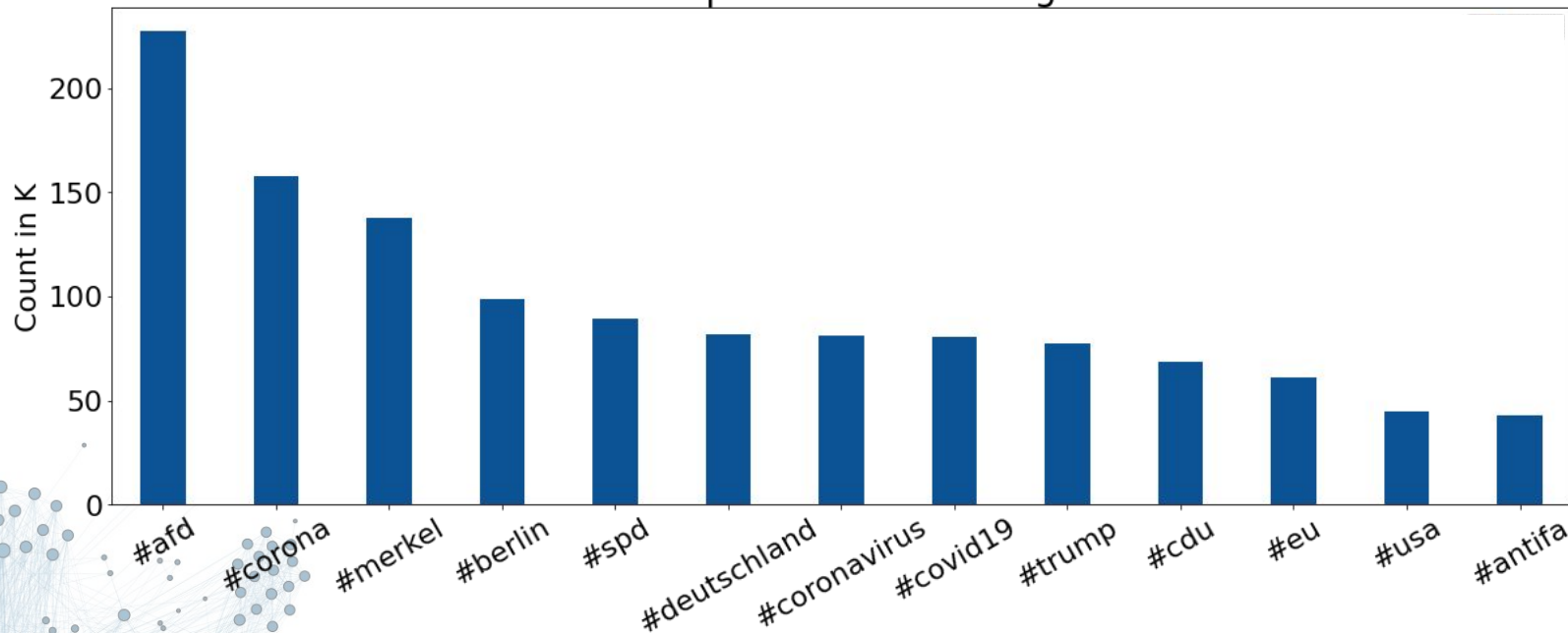
Indegree Distribution



# What concerns People?

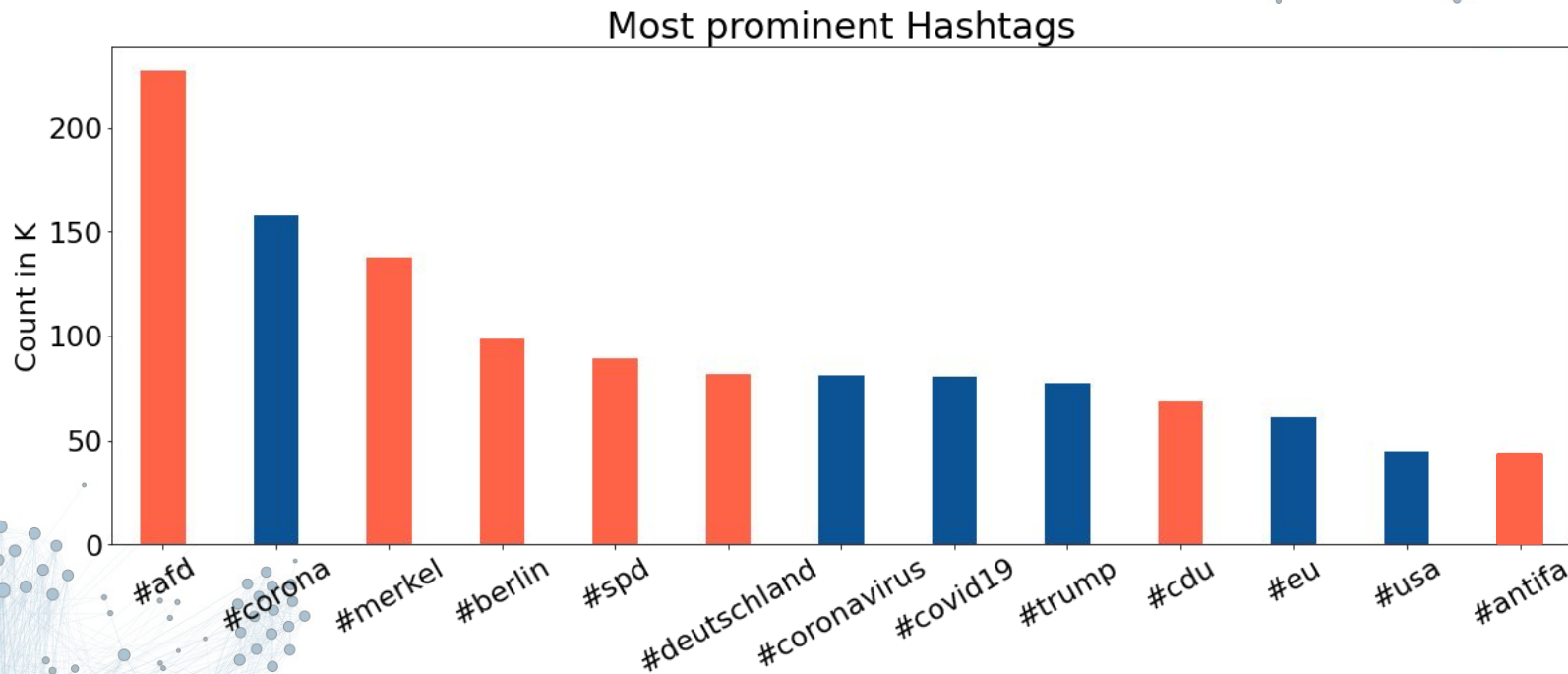
- German Politics, Politics, Covid-19

Most prominent Hashtags



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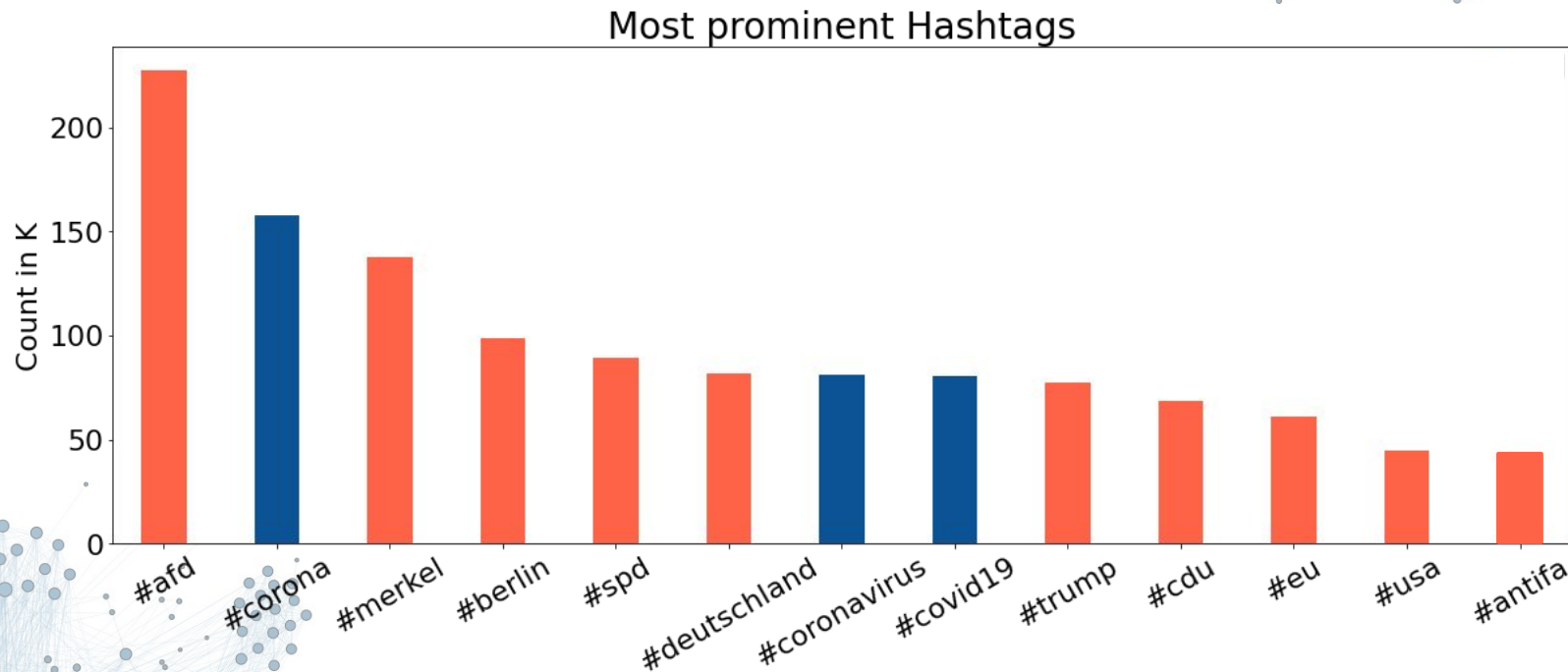
- German Politics





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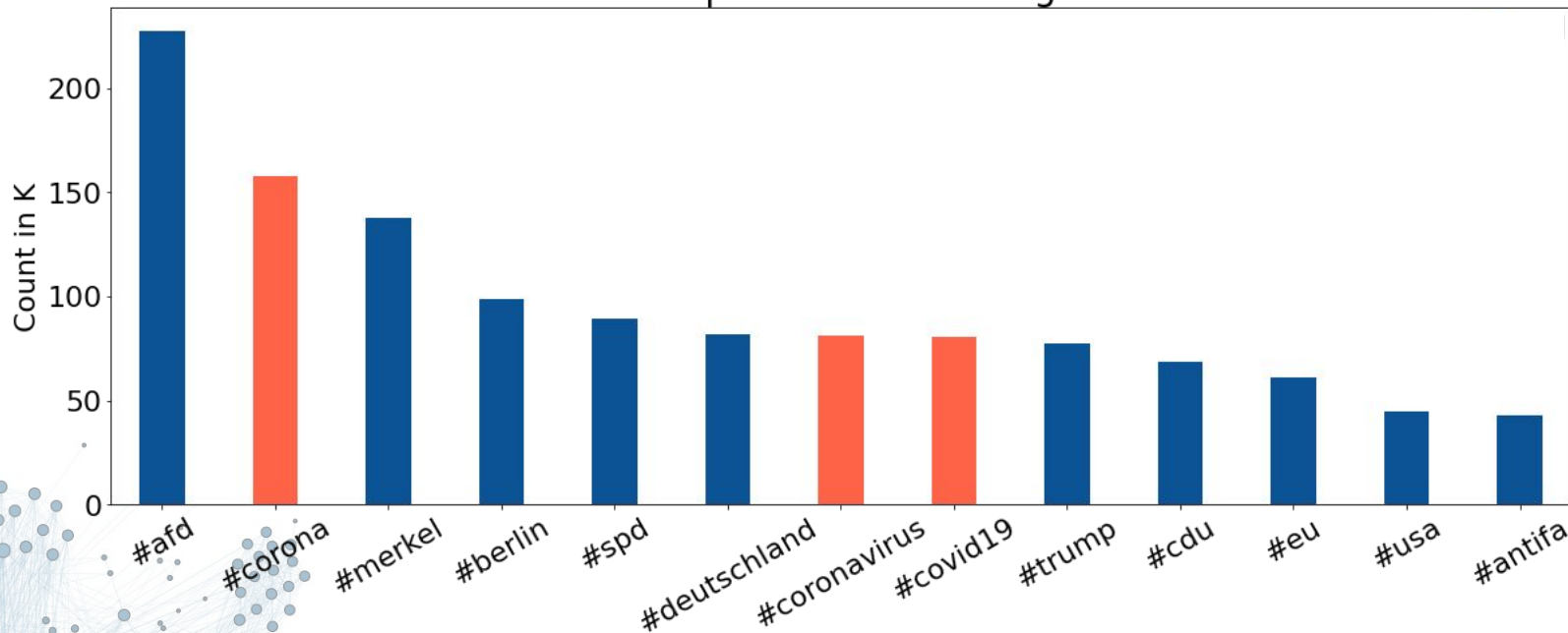
- German Politics, Politics



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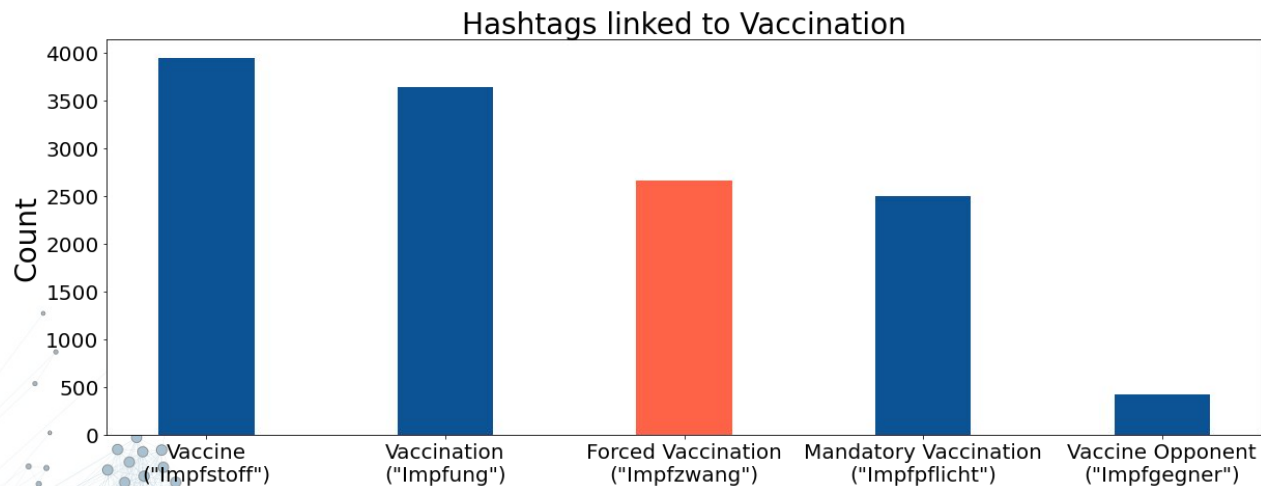
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Most prominent Hashtags



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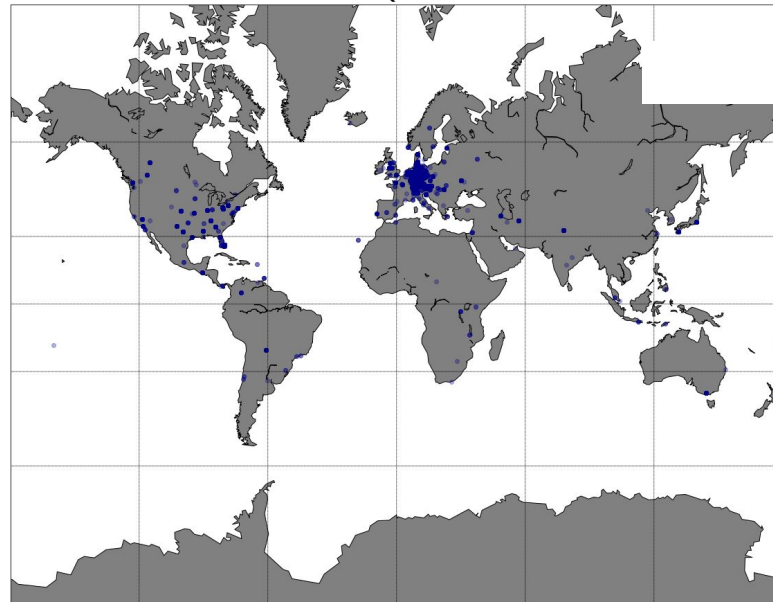
- German Politics, Politics, Covid-19
- Vaccination



# What concerns People?

- German Politics, Politics, Covid-19
- Vaccination
- QAnon: #qanon #wwg1wga (Top 50)

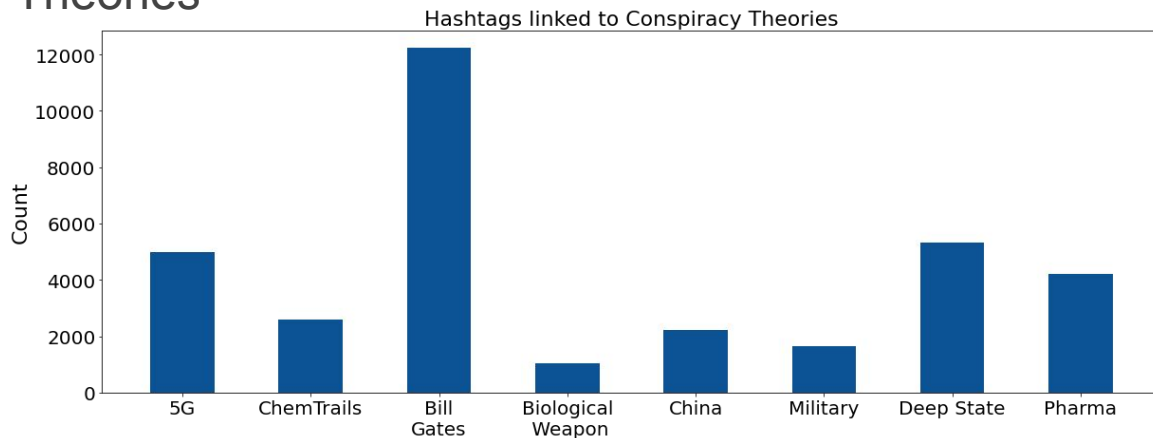
Distribution QAnon Authors





# What concerns People?

- German Politics, Politics, Covid-19
- Vaccination
- QAnon: #qanon #wwg1wga (Top 50)
- Covid-19 Conspiracy Theories



# Conclusions

- Fake News & Conspiracy Network → Political Network



- International Influence, especially United States & Russia
- Significant Imbalance:

Information sources << Information spreaders

# Discussion

- Need for Moderation on Twitter ?
- Prevent Manipulation for Political Gain ?
- Outlook: Extend Analysis ?
  - Text Analysis: Conspiracy Theories, Sentiment
  - Analyse Evolution of Tweet Network
  - Comparison to other Countries

**Thanks  
for your Attention!**

# References I

## Code:

- Github: [https://github.com/katboe/german\\_conspiracy\\_network\\_analysis](https://github.com/katboe/german_conspiracy_network_analysis)

## General Information:

- *Inside the Macedonian Fake-News Complex*, <https://www.wired.com/2017/02/veles-macedonia-fake-news/>, accessed (15.12.20)
- Bernays, E. L. (2005). *Propaganda*. Brooklyn, N.Y.: Ig Publishing.

## Prior Work:

- Elise Thomas. *Coronavirus denial spreading on social media*. Australian Strategic Policy Institute, Apr 2020.
- Marie Richter, Chine Labbe, Virginia Padovese, and McDonald Kendrick. *Tracking twitters european covid-19 misinformation super-spreaders*. NewsGuard, 2020.
- Anatoliy Gruzd and Philip Mai. *Going viral: How a single tweet spawned a covid-19 conspiracy theory on twitter*. Big Data & Society, 7(2):2053951720938405, 2020.
- Wasim Ahmed, Josep Vidal-Alaball, Joseph Downing, and Francesc López Seguí. *Covid-19 and the 5g conspiracy theory: Social network analysis of twitter data*. J Med Internet Res, 22(5):e19458, May 2020.



# References II

## Tools used:

- *Tweepy*: Twitter for Python! URL: <https://github.com/tweepy/tweepy>. Accessed: 15.12.2020
- *Botometer* Python API: URL: <https://github.com/IUNetSci/botometer-python>. Accessed: 15.12.2020
- U. Brandes & D. Wagner (2004). *Analysis and visualization of social networks*. In Graph Drawing Software, pp. 321-340. Springer, 2004. [DOI 10.1007/978-3-642-18638-7\\_15](https://doi.org/10.1007/978-3-642-18638-7_15)

## Social Network Analysis Techniques used:

- Arlind Nocaj, Mark Ortmann, and Ulrik Brandes: *Untangling the Hairballs of Multi-Centered, Small-World Online Social Media Networks*, Journal of Graph Algorithms and Applications, 19(2):595-618, 2015.
- Brandes, Ulrik & Delling, Daniel & Gaertler, Marco & Gorke, R. & Hoefer, Martin & Nikoloski, Zoran & Wagner, Dorothea. (2008). *On Modularity Clustering*. Knowledge and Data Engineering, IEEE Transactions on. 20. 172 - 188. 10.1109/TKDE.2007.190689.
- Gansner, Emden & Koren, Yehuda & North, Stephen. (2004). Graph Drawing by Stress Majorization. Lect Notes Comput Sc. 3383. 10.1007/978-3-540-31843-9\_25.