

Conspiracy theories discussion in social media

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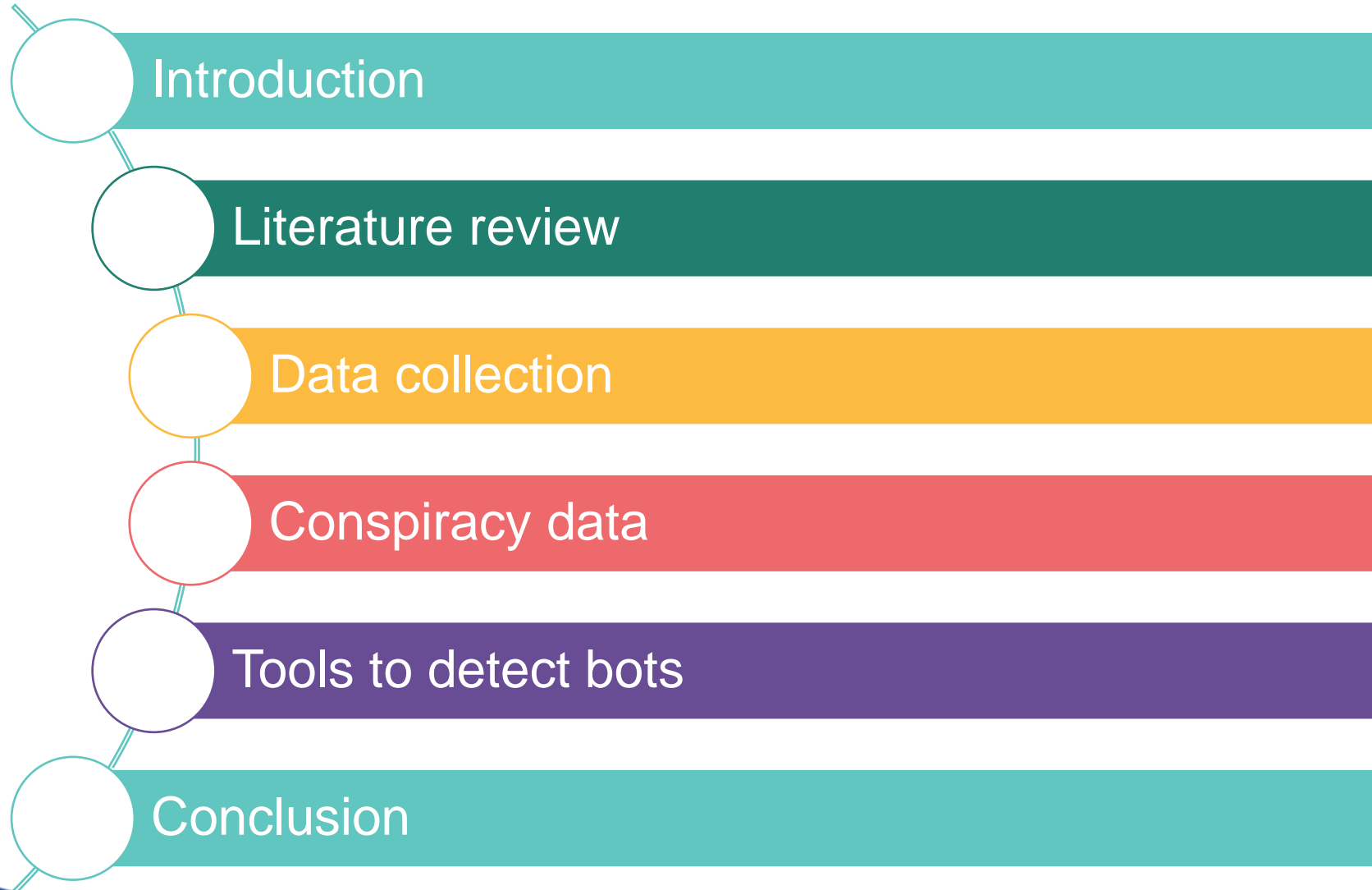
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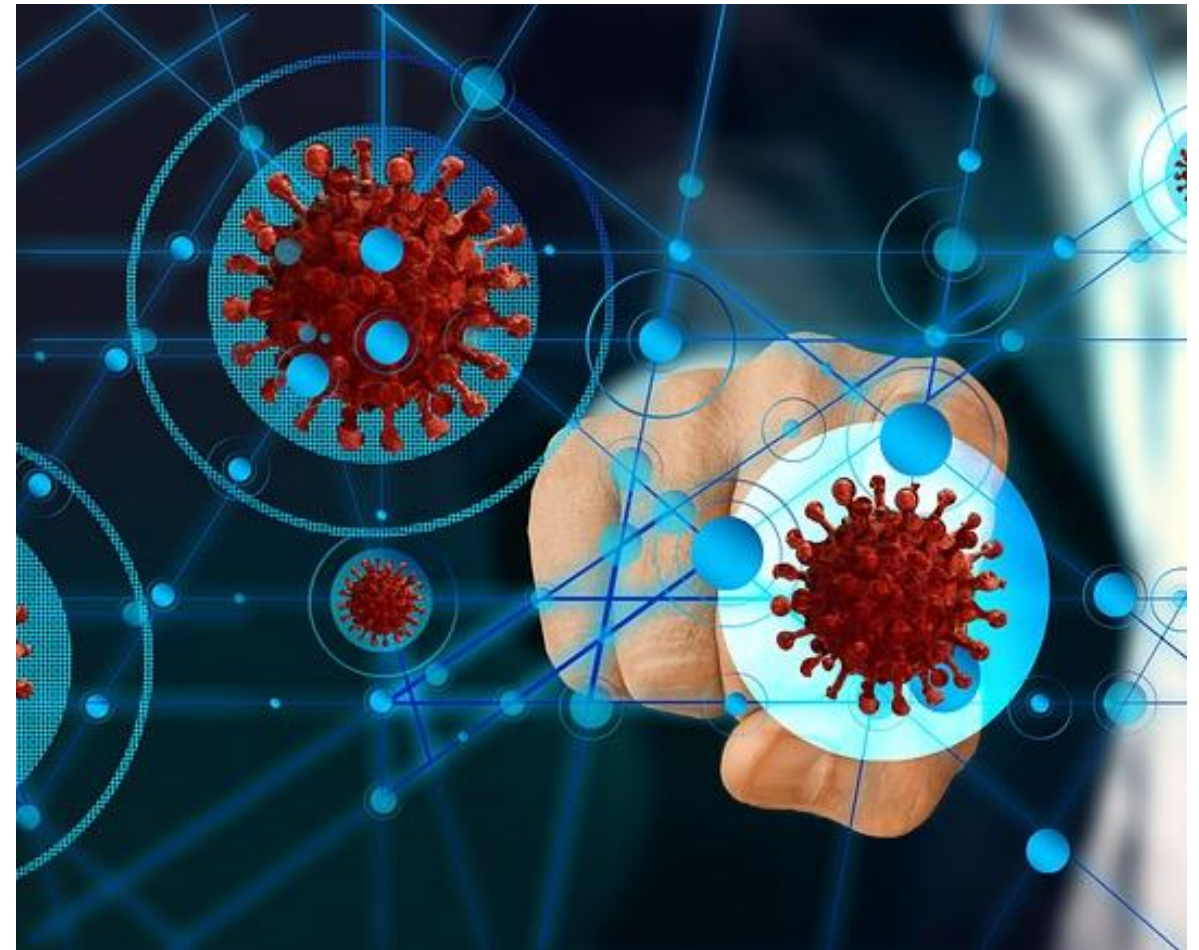
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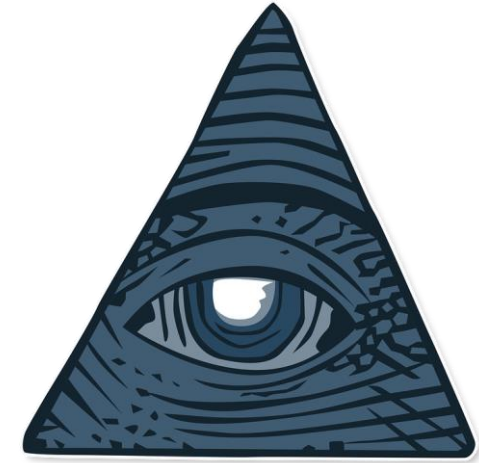
- Unexpected events with catastrophic consequences require to act in conditions of high uncertainty.
- In the first phase, objective information and data are missing, and people resort to conspiracy narratives, among others, in an attempt to explain hard to explain unexpected events.
- Social media are becoming the main source of information dissemination.
- The voluminous array of uncontrolled and instantly spreading information leads to the development of infodemics parallel to the unexpected event.
- The infodemics have a direct impact on risk perceptions and risk mitigation actions.



Literature review

Conspiracies and social media

- Pre-COVID-19
 - The topic was present but remained under-researched.
 - E.g., anti-vaccination conspiracies, Qanon, diseases (Zika)
- Post-COVID-19
 - The pandemic gave a great impetus to the study of the topic.
 - Spread of conspiracies (conspiracy tweets among COVID-19-related tweets 0.6% to 18%).
 - Spread of particular conspiracies (5G, FilmYourHospital, plandemic, “Immuni”).
 - Other topics (role of bots, geospatial distribution of conspiracies, sentiment of conspiracy tweets, content moderation of various conspiracies by social media platforms).



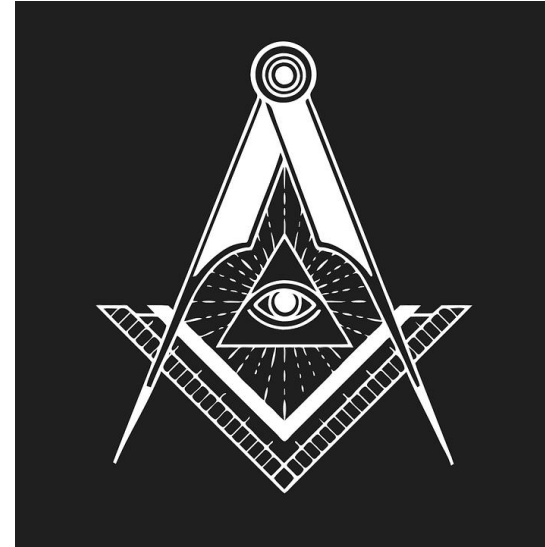
COVID-19 conspiracy theories

- 5G.
- Big Pharma.
- Bill Gates.
- Biological weapon.
- Exaggeration.
- FilmYourHospital.
- GMO.
- Vaccines-related.



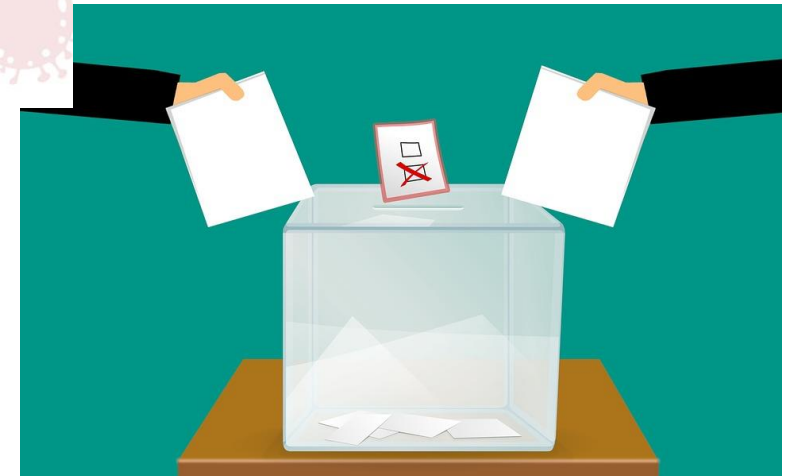
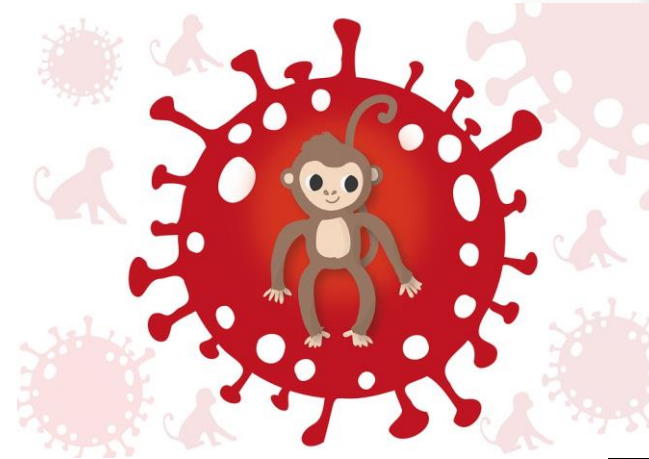
Earthquakes conspiracy theories

- Military
- Teleological
- Alien
- HAARP (High Frequency Active Auroral Research Program)
- CERN (European Council for Nuclear Research)
- Tunnel
- Extraction
- Masonic



Monkeypox conspiracy theories

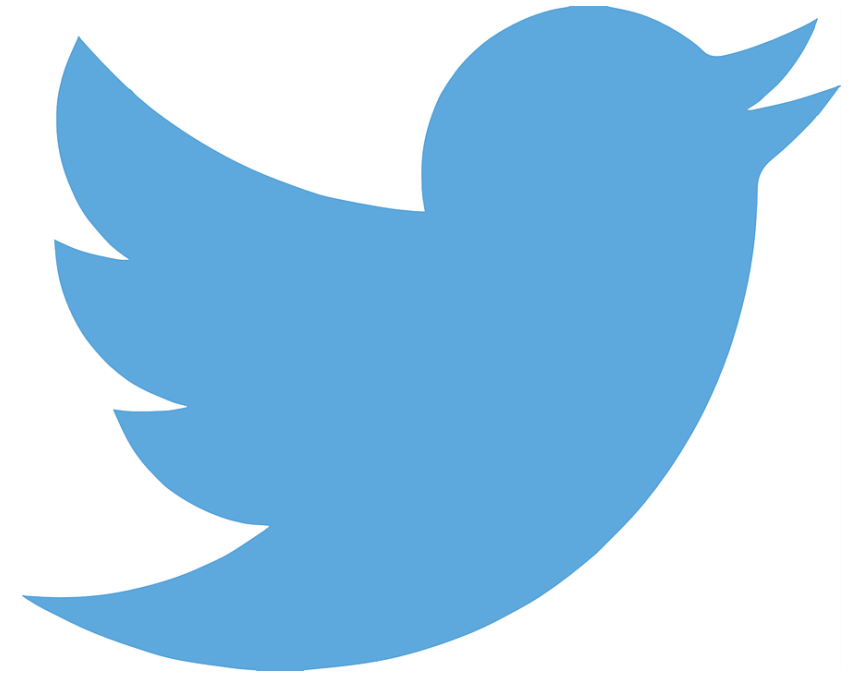
- Bill Gates.
- Side-effect of the COVID-19 vaccine.
- Deep state.
- Bioweapon.
- World Economic Forum.
- US elections.
- Truck accident with lab monkeys.



Data collection

Data collection (COVID-19 example)

- Twitter API's v2 full search for Academic Research.
- The search criteria included all tweets that contain one or more COVID-19 related keywords, and conspiracy-specific keywords.
- Only tweets that are in some way related to the topic were collected. Retweets were excluded from the search.
- Tweets written in English.
- The criteria: all tweets within the scope of the conspiracy theories:
 - supporting,
 - opposing,
 - neutral.
- All tweets published between January 1, 2020, (shortly after the outbreak was first reported in the media), and November 30, 2021.



Keywords

Conspiracy theory	Keywords
5G	5G
Big pharma	(Big pharma) or (Gates and pharma)
Bill Gates conspiracy	Bill Gates
Biological weapon	Weapon
Exaggeration	(Does not/ doesn't exist) or (exaggerated)
FilmYourHospital	(Film your hospital) or (empty hospital)
GMO	(GMO) or (genetically modified)
Vaccines	(Vaccine and infertile) or (vaccine and do not/ don't work) or (vaccine and autism)

Tweet examples

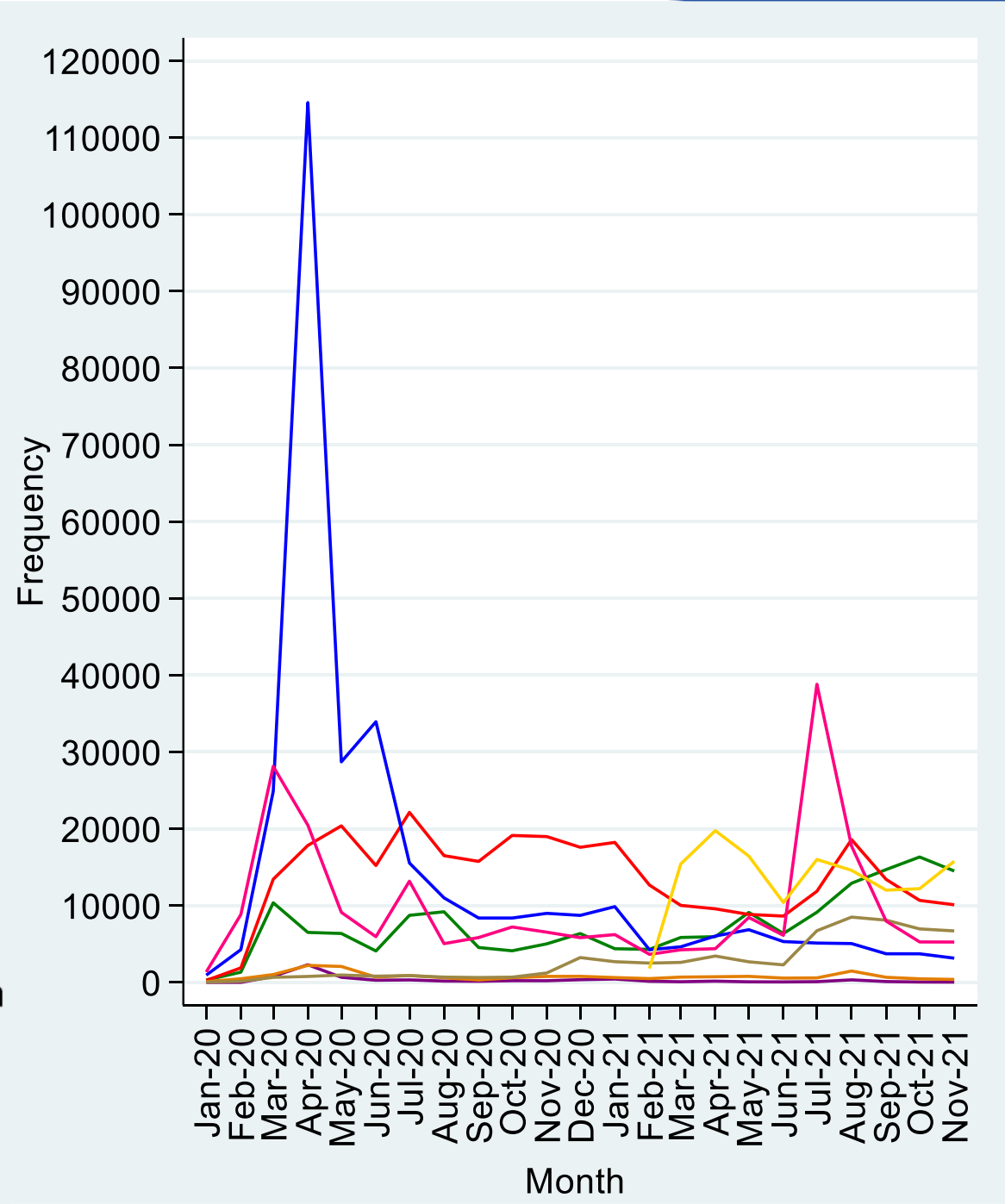
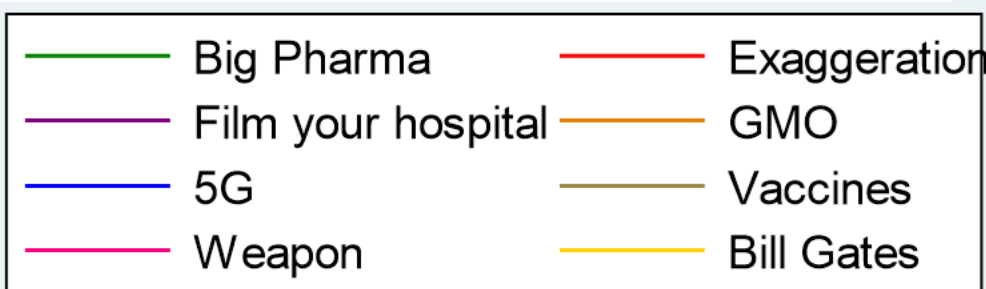
Tweet	Classification
“5G is killing people. Covid was a cover. Now the jab is a cover.”	Supporter
“5G linked scientifically covid death”	Supporter
“#lie: 5G mobile networks DO NOT spread COVID-19. #coronavirus”	Opponent
“I can’t believe there’s people out there that actually think 5G causes covid”	Opponent
"Got second covid vaccine shot 5g booting right"	Neutral

Conspiracy data

Total number of tweets per conspiracy (COVID-19 example)

Conspiracy	Number of tweets
5G	326,035
Exaggeration	314,205
Weapon	226,882
Big Pharma	173,452
Bill Gates	138,061
Vaccines	65,472
GMO	18,090
FilmYourHospital	7,054
Total	1,269,251

Frequency of tweets on conspiracy theories (monthly)



OLS regression results for new weekly COVID-19 cases as an explanatory variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	log_5G	log_BigPharma	log_BillGates	log_Weapon	log_Exaggeration	log_FilmYourHospital	log_GMO	log_Vaccines
log_cases_7	-0.0880**	0.271***	0.769***	-0.100***	0.327***	-0.837***	-0.00791	0.631***
	(-2.60)	(13.15)	(9.19)	(-5.27)	(11.58)	(-9.21)	(-0.49)	(23.56)
_cons	6.676***	1.925***	-4.052***	6.702***	1.906***	12.41***	3.079***	-3.912***
	(15.20)	(7.33)	(-3.68)	(27.92)	(5.26)	(10.53)	(15.02)	(-11.58)
N	671	671	273	671	671	598	671	671
R ²	0.021	0.294	0.225	0.045	0.405	0.221	0.000	0.524
adj. R ²	0.020	0.293	0.222	0.044	0.404	0.220	-0.001	0.523

Discussion

Peak at the beginning of the pandemic.

- 5G and FilmYourHospital.
- Both conspiracies related to the dread risk bias, namely that the COVID-19 pandemic was new, and its reasons were unclear.

Increase throughout the pandemic.

- Vaccines and the Big Pharma.
- Consistent with the threat and distrust heuristic, which refers to industrial power and related concerns about the role of big industry, as well as argument of pure progress.

Persistent theories.

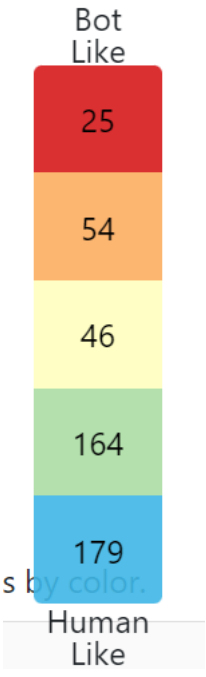
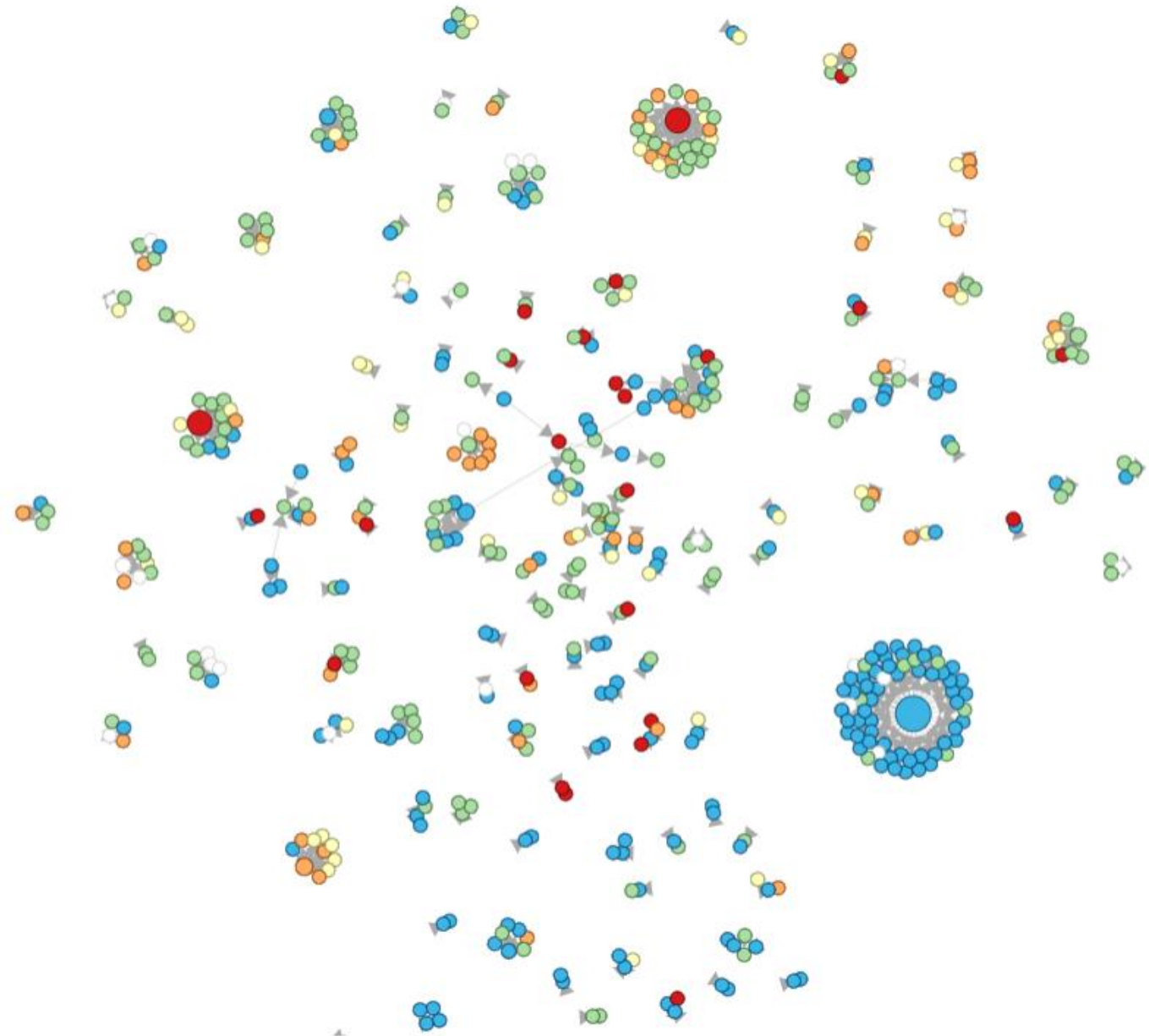
- Bill Gates and exaggeration.
- This may be due to the introduction of digital certificates and the use of Bill Gates by conspiracy theorists as the embodiment of digital slavery.
- This discourse is again related to the threat and distrust heuristic as well as the use of the pure progress argument.
- The discussion of the exaggeration conspiracy may indicate people's distrust of statistics.

Multiple peaks.



- GMO and biological weapon.
- The first peak was at the beginning of the pandemic, the second peak was at the beginning of the active and massive introduction of vaccines.
- These theories faded as quickly as they emerged after they peaked.
- After reaching the peaks, the theories only played a negligible role.

Tools to detect bots


Hoaxy “5G” and “Covid”





Botometer


✓ 
4.7 / 5 
✕

Bot type scores		Bot score based on	
Echo-chamber	0.1	All features:	4.6
Fake follower	1.4	Language-independent:	4.7
Financial	0.1	10% of accounts with a bot score above 4.7 are labeled as humans.	
Self declared	4.7	Majority tweet language:	es
Spammer	1.0		
Other	4.2		


 Profile


 Tweet


 Details


 Feedback

Bot Sentinel

BotSentinel.com

0%

Rating: **Normal**

This report was created for [REDACTED]
 Report created: 6-6-2022 21:23:15



- Normal: 0% - 24%
- Satisfactory: 25% - 49%
- Disruptive: 50% - 74%
- Problematic: 75% - 100%

Our analysis has concluded [REDACTED] exhibits normal tweet activity.

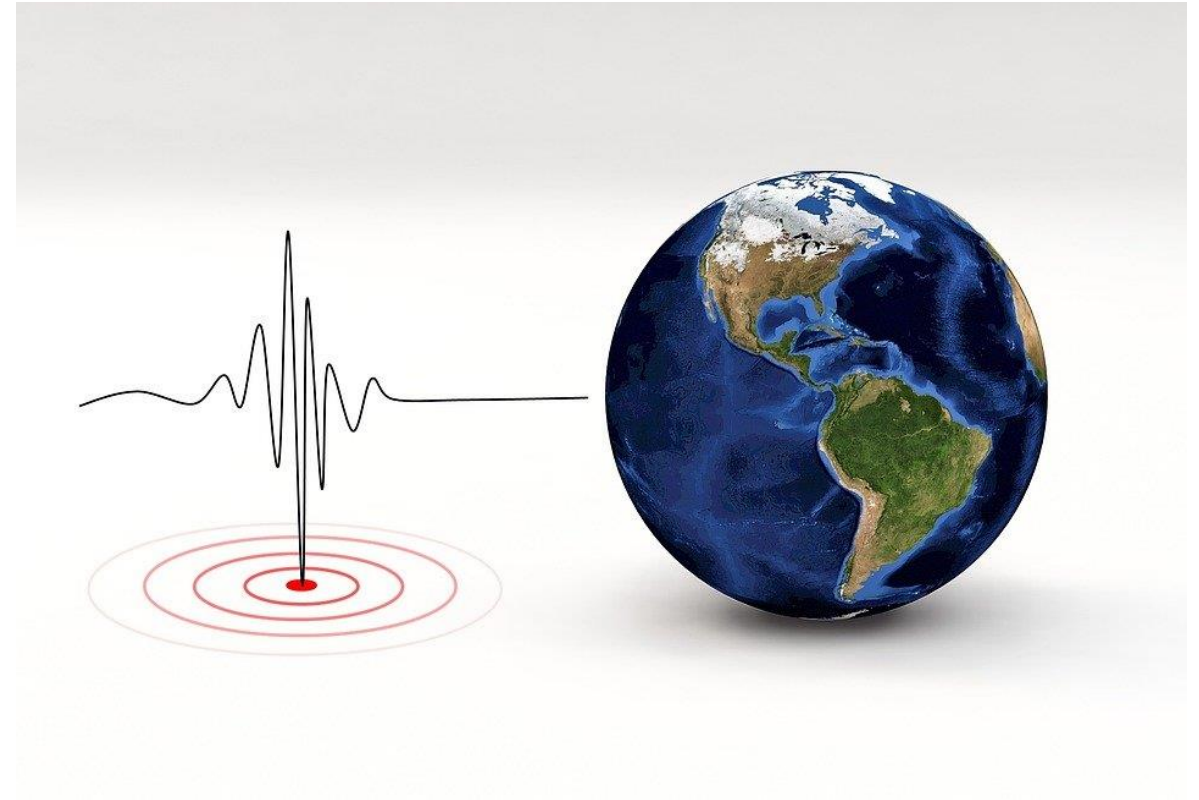
Conclusion

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Many people react to new, unexpected, and incomprehensible risks by resorting to conspiracy narratives.

We have demonstrated on the example of COVID-19 how social media can be used to analyze discussions of conspiracy theories.

These results may be useful for decision makers who can use the data to draw conclusions about the effectiveness of combating different conspiracy theories, to identify theories that remain persistent, and to develop measures aimed specifically at combating the remaining conspiracies.



Thank you!



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