THE TRUTH ABOUT CLIMATE DENIAL

A network analysis

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Agenda

Research interests
Research questions
Methods and data
Findings
Future research

Research interests

→ Conspiracy theories: **Climate denialism**

→ Australian Bushfires 2019-2020

→ Network analysis on social media data: **Twitter**

Research questions

1. Who is influencing the climate denial debate?
2. What other conspiracy theories do denialists promote?
3. Does conspiracy theory "smoothie" exist? (Klein, 2021)

Methods and data

CLIMATE CHANGE DENIAL **IS ARSON**
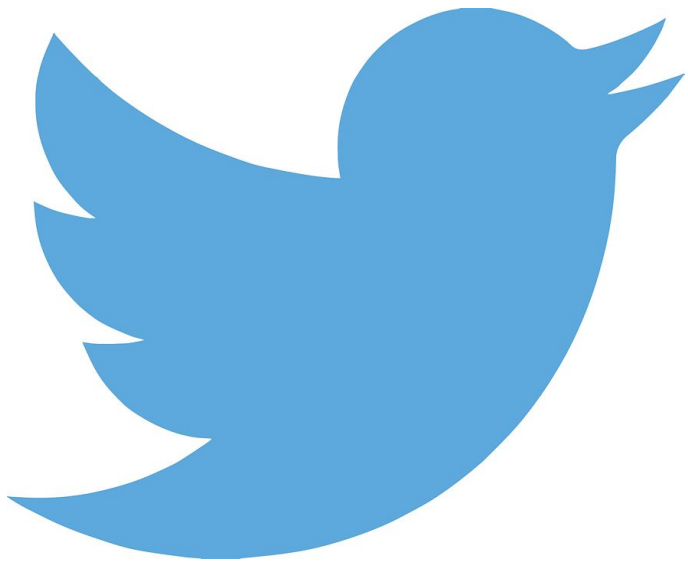
Data acquisition
- Twitter API tools, Tweet Downloader
- Tweets with the hashtag #climatehoax
- Time frame: January 2020
- Raw data: 9315 tweets

Data analysis
- Python
- Networkx, pandas

Data acquisition

|	id	text	author_id	in_reply_to_user_id	author	
0	1223027619748286464	RT @ThiagoMaia2503: The ice of the Svalbard se...	781531692	NaN	{"protected":false,"id":"781531692","url":"","...	[{"type":"retweeted","id":
1	1223021903658377216	@mgrant76308 Go back to school is freezing out...	139322897	61851477.0	{"protected":false,"id":"139322897","url":"","...	[{"type":"replied_to","id
2	1223017455188090881	Remember what is happening behind the curtain:...	1216561117960511491	NaN	{"protected":false,"id":"1216561117960511491",...	
3	1223014846976757760	"Global Warming"\n\n 😳\n\n#ClimateChange \n#Clim...	573935794	NaN	{"protected":false,"id":"573935794","url":"htt...	[{"type":"quoted","id":"1
4	1223012516084830208	RT @MannixZegge: Het merk Greta.... Nuff said....	2447038212	NaN	{"protected":false,"id":"2447038212","url":"","...	[{"type":"retweeted","id":
5	1223011624249892864	Het merk Greta.... Nuff said... #ClimateHoax h...	1213922882847293441	NaN	{"protected":false,"id":"1213922882847293441",...	[{"type":"quoted","id":"1

- Networkx, pandas

Network analysis

- Node: author of tweets
  - Source: Author of the tweet
  - Destination: Author of the tweet that is being replied to
- Edge: author of the tweet -> replying to other user
- Network: Users replying to another users
- Metric: Out-degree centrality in directed graph
  - = The number of edges that the node directs to others / The number of nodes in graph - 1
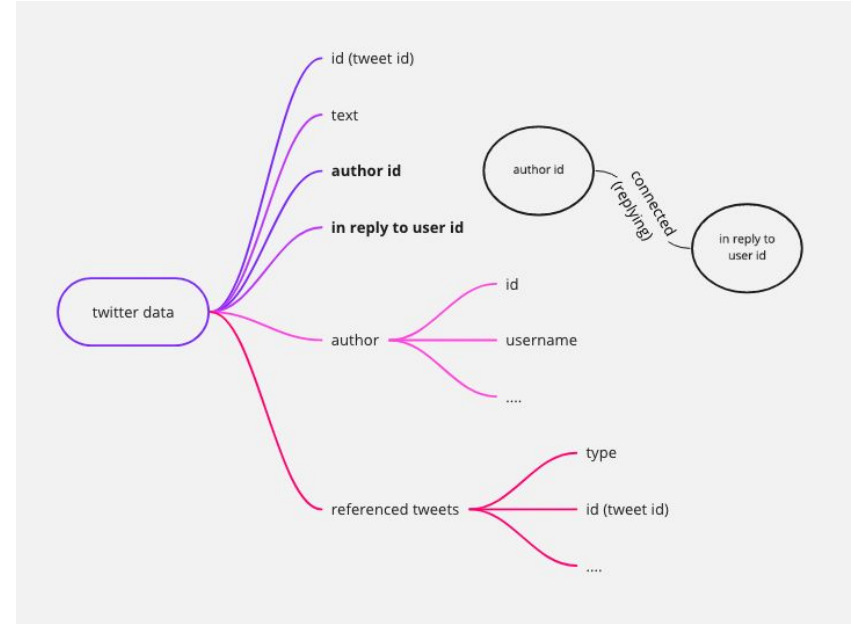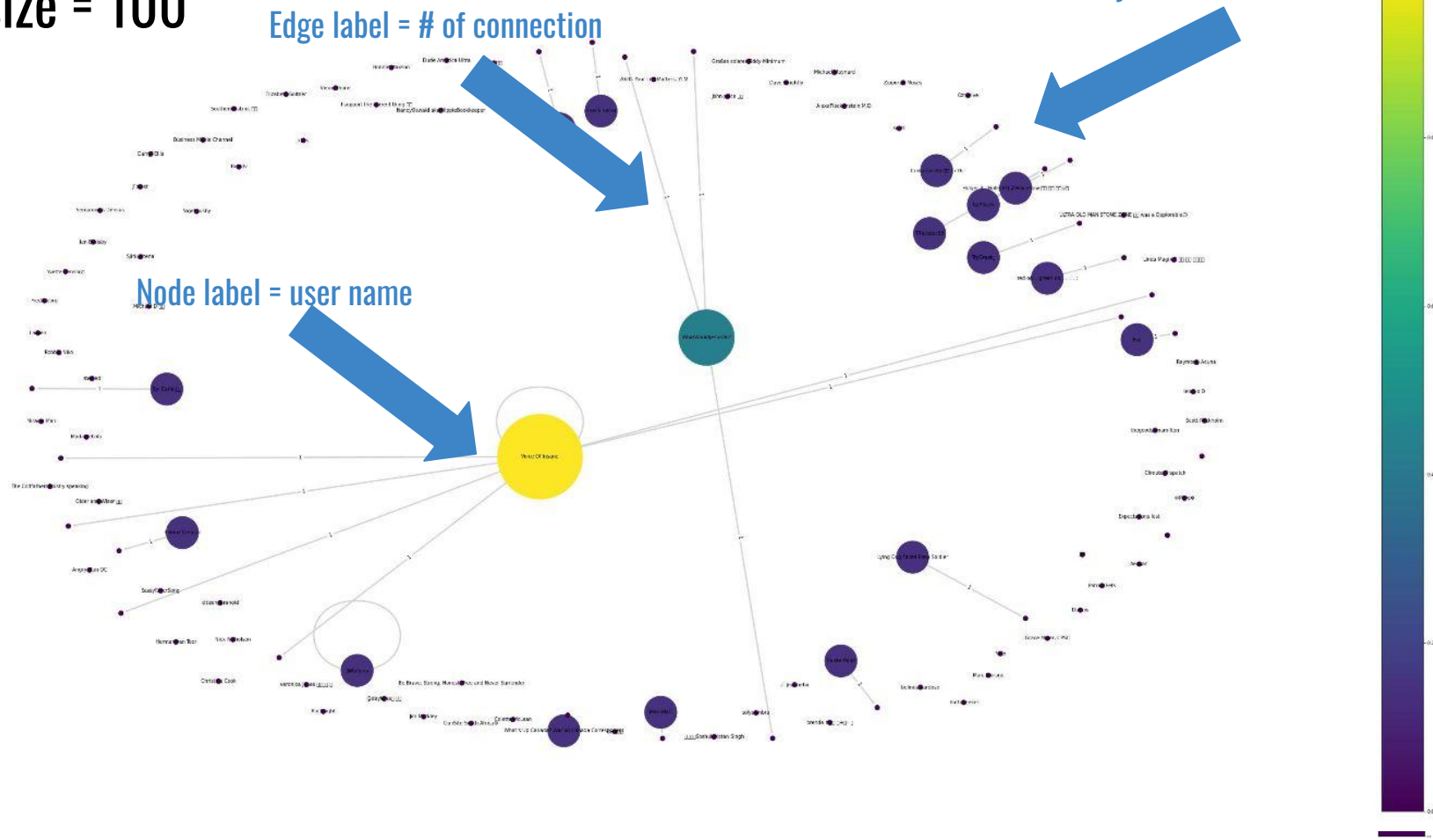
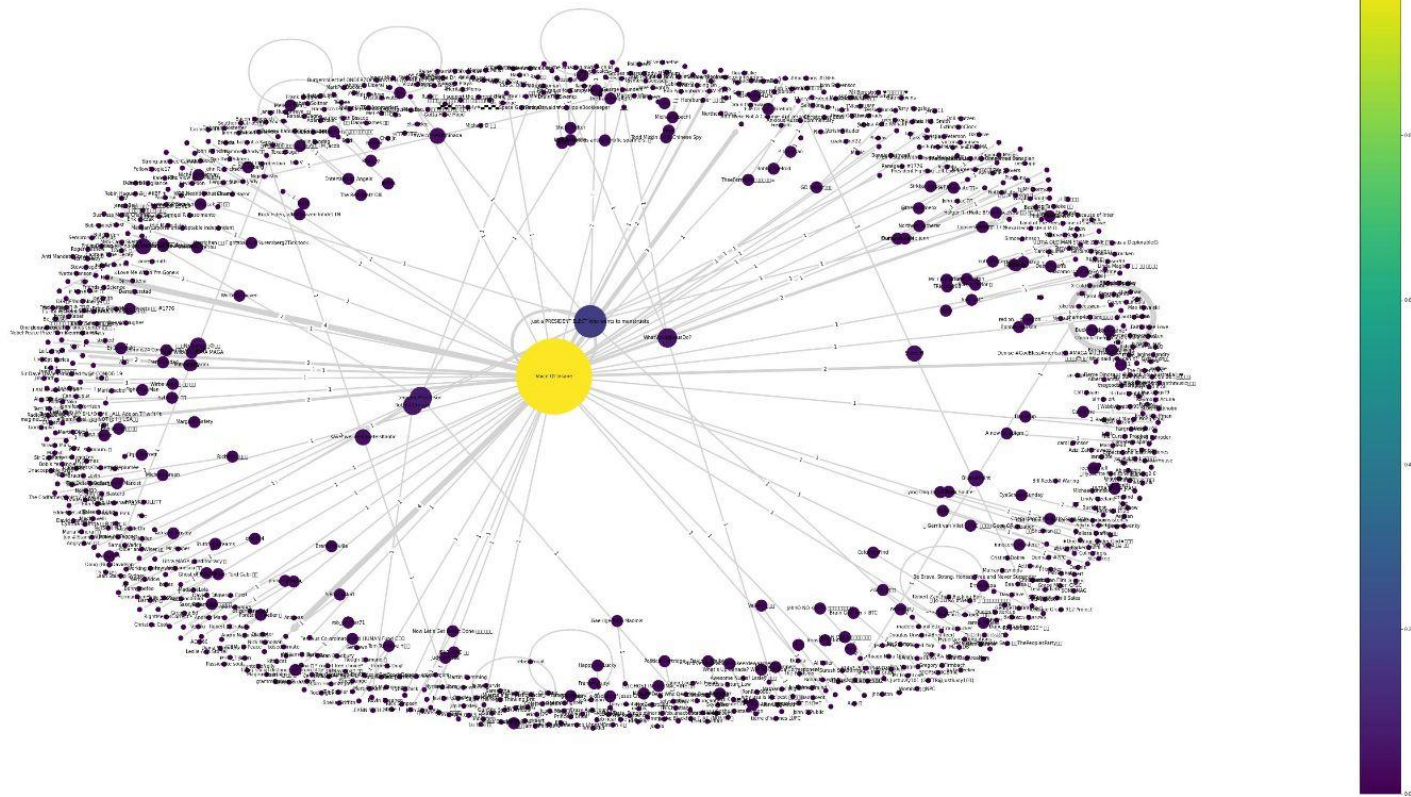# Sample size = 100

Sample size = 100

Node size & color ~= outdegree centrality
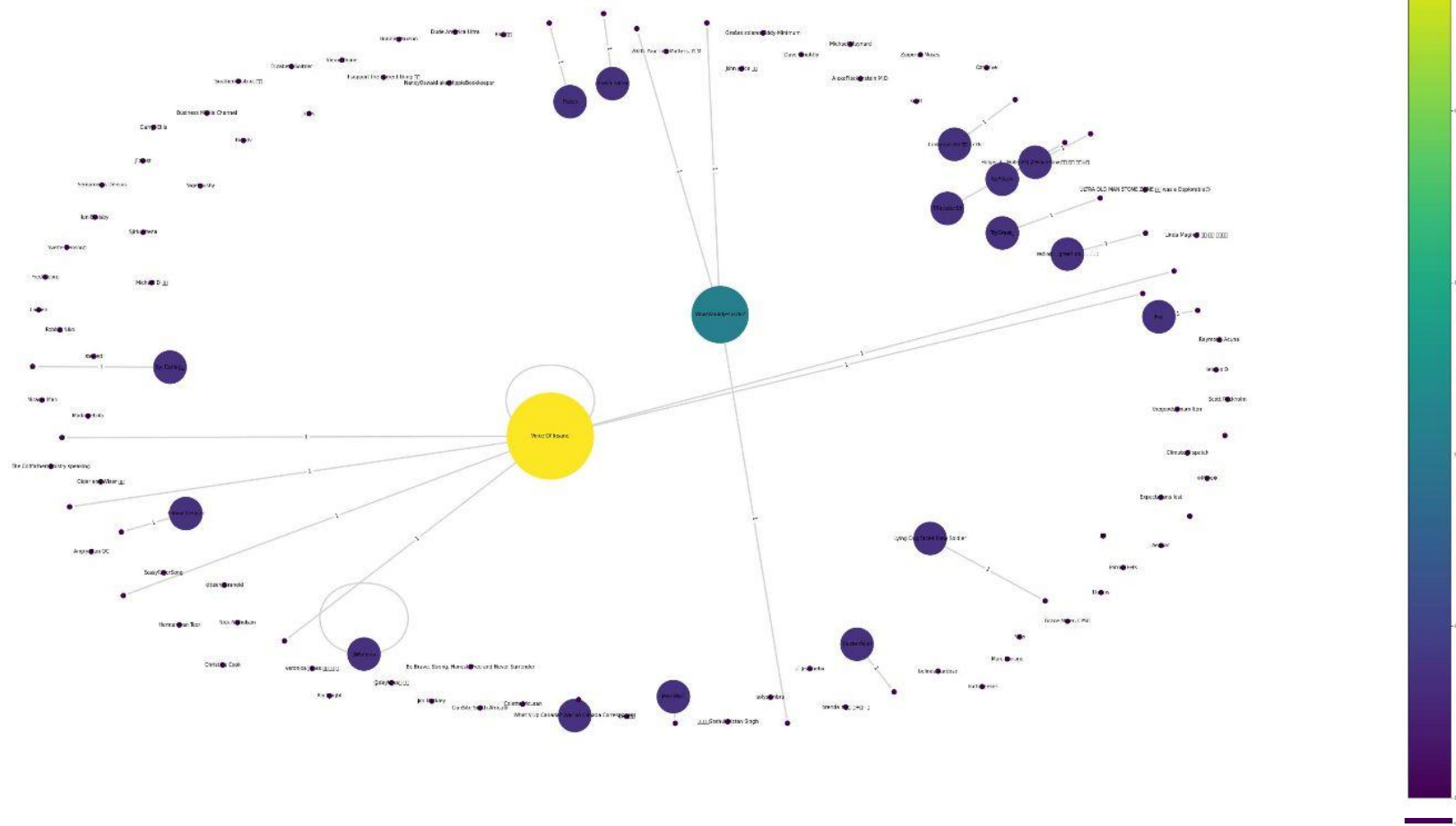
Edge label = # of connection

Node label = user name

Sample size = 1000

Whole data (N=9315)
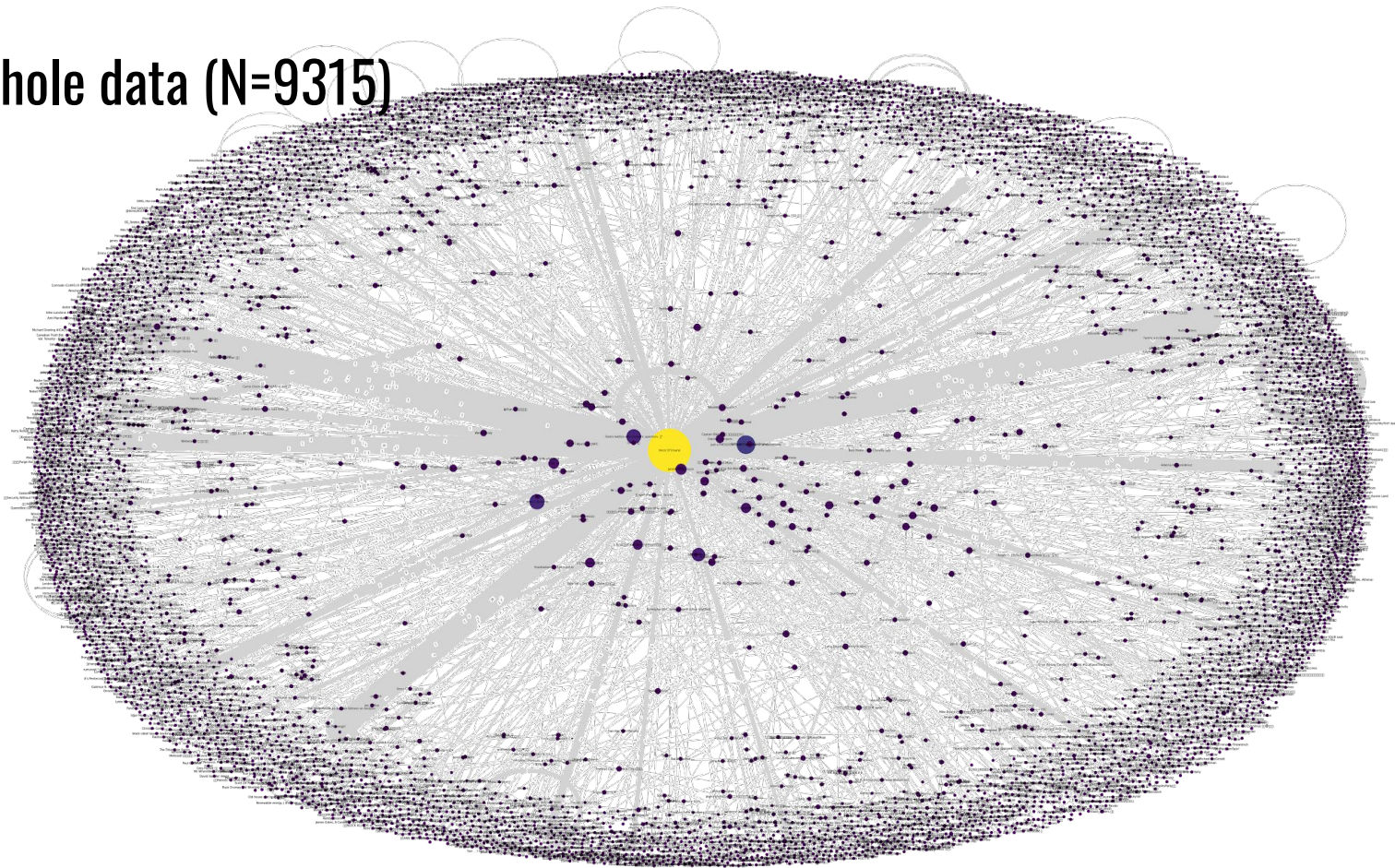
But what did we actually find?

Top20 influencers
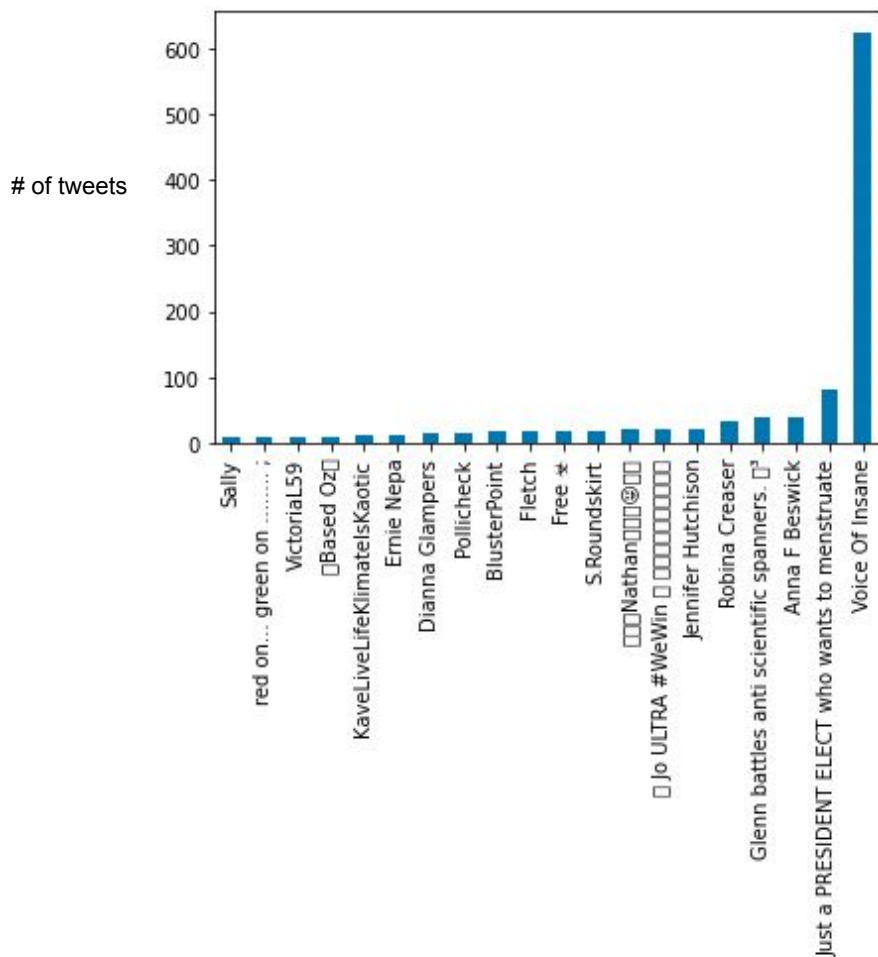
# of tweets

"@CharlieDaniels @ElizAKByrd Thank you so much. Please understand the fires are only a short term problem which could have been prevented. Please pray that the Government stops controlling our weather with Nexrad HAARP weather stations to push the #ClimateHoax & we receive rain." @WhatWouldJesusDo

"Will @abcnews @SBSNews be interviewing BOM climate-alarmists *ahem* sorry, scientists, to ask why they got it so wrong? Given that they can't forecast deluging rains, a month out - on what basis are they predicting 50 years in the future? #auspol #ClimateHoax https://t.co/VT8yF3NR9O" @Robina Creaser

"@EUClimateAction Yes 2050 is too late but faith in Jesus gives you another chance on a new unpolluted uncorrupted earth ❤️\U0001f64f\n\n#givetruthachance \n\n#climatehoax\n#satancontrolselite\n#biblicalprophecy\n#endtimesigns\n\n#jesusreturnssoon\n#beready\n#jesussaves\n#devildecieves\n#bibletruths\n#repent" @S.Roundskirt

"@GeraldKutney Better still, if its all one big hoax, how do the skeptics explain this: #oops Ironic how bloggers know better than a trillion dollar industry set to lose money from the scam. #ClimateHoax https://t.co/YfzprHPmZs" @GlennCarr6

FINDINGS

→ The denialists combined with other conspiracy theorists. But also some activist influencers

→ Anti-MSM, anti-government, against global elites, anti-socialism, religiously loaded tweets, anti-science/technology

→ Conspiracy theory smoothie?

Hashtag	Count	Hashtag	Count	Hashtag	Count	Hashtag	Count	Hashtag	Count
#climatechange	613	#CLIMATEHOAX	603	#climatebrawl	586	#ClimateHoax	346	#ClimateEmergency	55
#Auspol	45	#climateHoax	45	#climatehoax	43	#onyaKrill	22	#bushfires	20
#ClimateChange	19	#repent	15	#beready	13	#ClimateCrisis	13	#jesusreturnssoon	13
#OnyaKrill	13	#satancontrolselite	13	#devildecieves	12	#ArsonEmergency	11	#BushFireCrisisAustralia	11
#jesussaves	10	#climateAlarmists	9	#climaterealists	9	#auspol	8	#bushfiresAustralia	8
#bibletruths	7	#biblicalprophecy	6	#climate	6	#Climatealarmists	6	#ClimateCult	6
#climateEmergency	6	#NASAlie	6	#ourPM	6	#ClimateEmegency	6	#GlobalWarming	4
#Krill	4	#wexit	4	#bushfireaustralia	3	#climateRealism	3	#ElectricVehicle	3
#FakeNews	3	#Agenda2030	2	#Bananada	2	#CHILDABUSE	2	#ClimateAction	2
#CLIMATEALARMISTS	2	#CLIMATEAPOCALYPSE	2	#climateChange	2	#climateCrisis	2	#CLIMATECULT	2
#ClimateDelusion	2	#ClimateEmergen	2	#Climatehoax	2	#climateneutral	2	#climatescam	2
#coronavirus	2	#devildeceives	2	#endtimesigns	2	#ExtinctionRebellion	2	#fakerefugees	2
#hypocrite	2	#MorrisonismyPM	2	#Only11YearsLeft	2	#onlyjesuscansave	2	#paris	2
#ponzi	2	#QAnons	2	#satansdeception	2	#TrudeauWorstPM	2	#WWG1GWA	2
#1	1	#4Chan	1	#AGWCO2	1	#AlarmistCult	1	#AlbertaUSA	1
#Antarctic	1	#arson	1	#Asupol	1	#aupoli	1	#auspol2020	1
#Australia	1	#BetterWirkingWorld	1	#BlairFeltmate	1	#britishindependence	1	#bushfire	1
#BushfireEmergency	1	#Canada	1	#Canadone	1	#carbonDerrangement	1	#CarryNancysBag	1
#CateBlanchette	1	#cbc	1	#cdnpoli	1	#Childabuse	1	#Climate	1
#climatealarmist	1	#Climatealarmist	1	#climatearson	1	#ClimateChangeIsReal	1	(Other)	95

Future research

- Polarized echo chambers?
- Does soft denialism lead to hardline denial?
  - Longitudinal analysis
- Compare other denialisms (e.g. anti-vaccination movements), events (natural vs political event)

Thank you for listening!