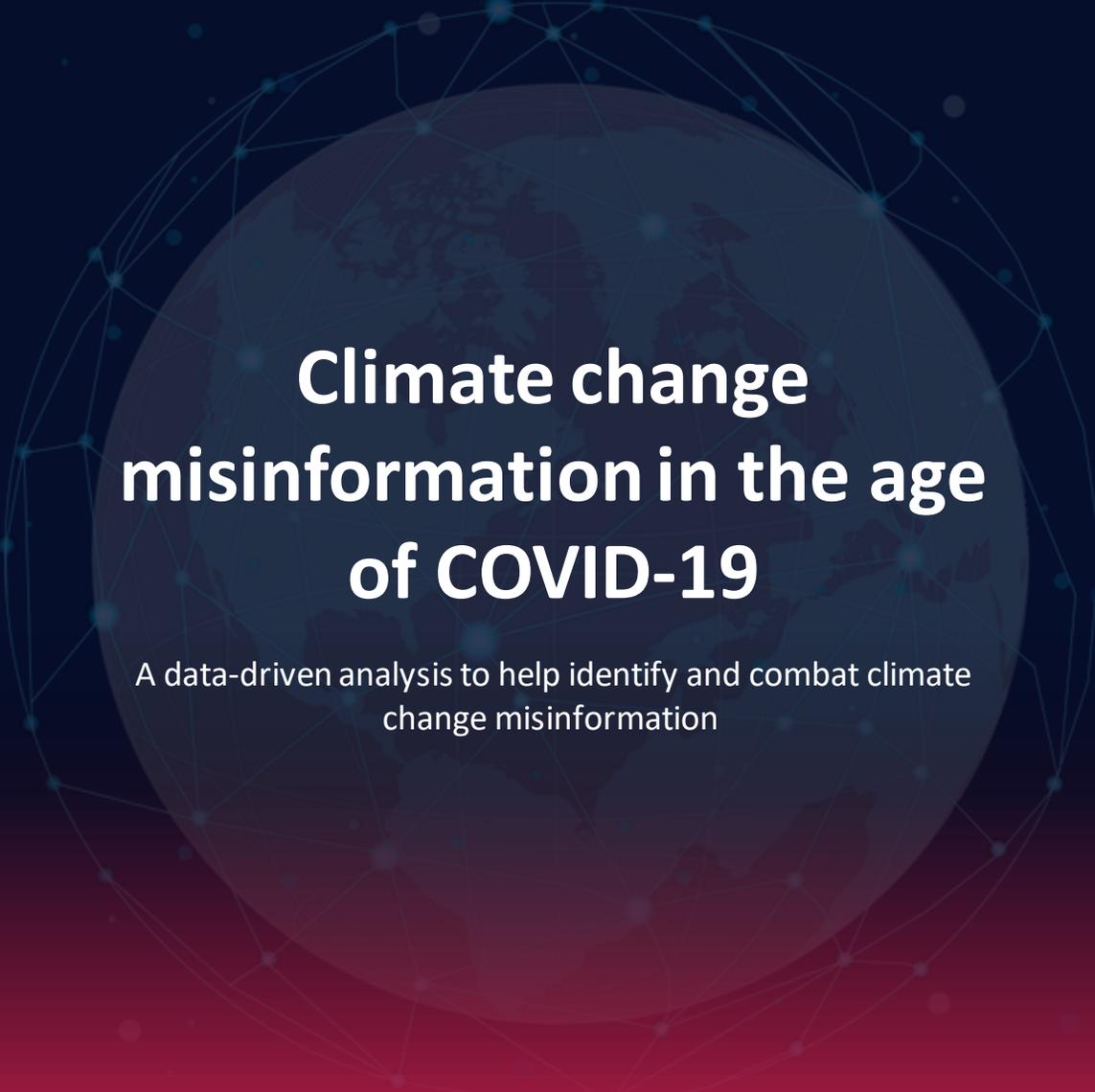


Logically.

APCO
worldwide®

A globe is centered in the background, overlaid with a network of blue lines and dots, suggesting a global network or data flow. The globe is semi-transparent, showing the continents in a dark blue tone.

Climate change misinformation in the age of COVID-19

A data-driven analysis to help identify and combat climate
change misinformation

October 2021

Executive Summary

Combating climate change requires large-scale changes to human society and unprecedented collective decision-making. Yet, despite the consensus in the scientific community about the consequences of climate change, there is still a large level of mistrust surrounding the issue. Increasingly scholars, policymakers and activists are expressing concern that social media is enabling a [surge in misinformation](#) about climate change. While concern around climate misinformation has tended to focus on denialism, [recent research](#) suggests that the current picture is more complicated and that the category of climate misinformation should also include scepticism, denial, contrarianism and even climate defeatism.

Understanding more about climate misinformation, including how it manifests, spreads and more about its possible causes, as well as what more individuals, governments, businesses—and especially, communicators—can do to help mitigate the problem, will be essential for better public education and policymaking around climate action.

It is for this reason that the advisory and advocacy communications consultancy, APCO Worldwide, and Logically, a specialist counter-misinformation technology company, joined forces to apply a data-driven approach to understanding the changing nature of climate misinformation.

For the purposes of this report, we define climate misinformation as communication that contradicts or distorts the scientific evidence and expert consensus that the planet is warming as a result of human activity, and that this will lead to significant instability and damage to the environment.

Using innovative, open-source analytical techniques and deep countermeasure experience, APCO Worldwide and Logically undertook a collaborative research project focused on identifying and understanding the most prominent climate misinformation narratives online since 2019.

Through the Logically Intelligence platform we were able to create an extensive dataset of news media and social media posts across the open internet which matched keywords, sentiment and other signals associated with five possible climate misinformation narratives. By analysing these narratives in greater detail, we were able to learn more about the key events, organisations, triggers and arguments that are helping climate misinformation proliferate online.

Five Climate Change Narratives April 2019 to August 2021

1. Climate Change and The Great Reset
2. Climate Change and Financial Costs
3. Climate Change and Doomerism
4. Climate Change as a Natural Occurrence
5. Climate Change and Arson

Key Findings

The COVID-19 pandemic has had a significant impact on the nature of climate change misinformation narratives.

- The rise of QAnon and the growth of conspiracy theories during the pandemic has had a profound and lasting impact on the climate change misinformation landscape.
- Since 2020, climate change misinformation has increasingly shown up within broader conspiracy narratives such as The Great Reset and anti-vaccine propaganda.
- Traditional denialist narratives such as humans not being responsible for climate change or climate change not occurring are a negligible proportion of online conversations.
- Climate change misinformation has evolved away from denialism into a complex set of narratives, the most prominent being scepticism about the necessity and cost of political action and doomerism about what can be done.

International events and major government policy interventions are key drivers for spikes in climate change misinformation.

- International events like the World Economic Forum (WEF) are drivers for spikes in engagement with climate change misinformation.
- This is likely to become more widespread as climate change becomes more noticeable in its effects, and climate policy becomes a more salient political issue.
- The 2020 WEF meeting titled “The Great Reset” was inadvertently responsible for the creation of a major new climate misinformation conspiracy.

Top-down communications are the principal drivers of climate change misinformation.

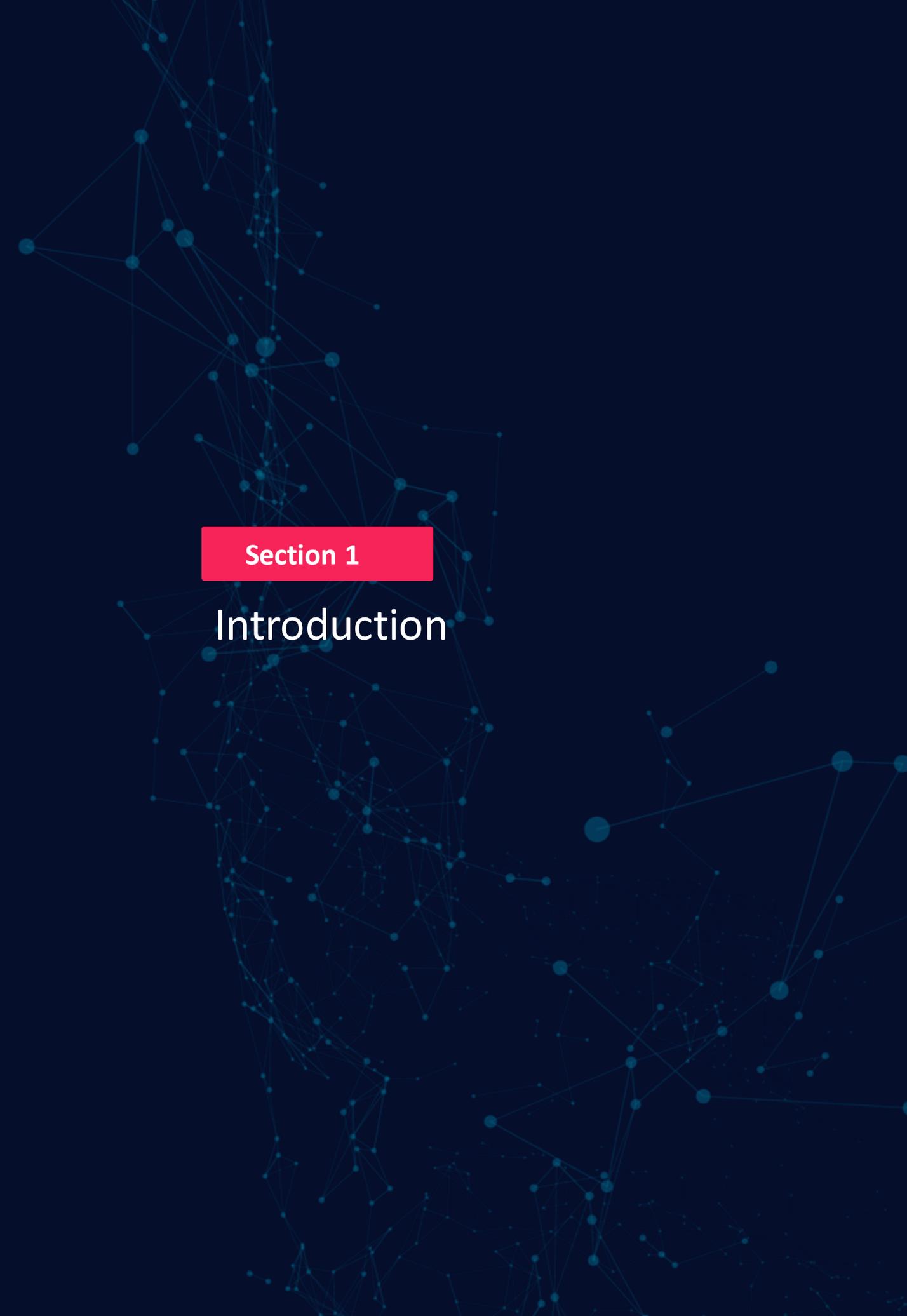
- We found no evidence of an organised online grassroots climate misinformation movement.
- High volume climate change misinformation talking points (3000+ mentions) tended to occur in direct response to major political events, notably the Davos summit, the UN Climate Action Summit and the US 2020 presidential elections.
- Organised climate sceptic communications efforts from think tanks such as the Institute for Energy Research (IER) consistently outperformed several organic climate misinformation narratives.

Far more people talk about climate misinformation than engage in spreading climate change misinformation.

- Only around 1 in 50 publications in our dataset appeared to support an identified climate misinformation narrative, with most discussing climate misinformation without supporting it.

Table of Contents

- 
1. Introduction
 2. What is climate change misinformation?
 3. Methodology
 4. Climate change misinformation narratives
 5. Conclusions and recommendations
 6. Contributors



Section 1

Introduction

Introduction

Combatting climate change will require large-scale changes to human behaviour and collective decision-making. Yet, despite the nearly unanimous consensus in the scientific community about the consequences of climate change, there is still a large level of distrust about this issue, and increasingly, scholars, policymakers and activists are expressing concern that social media is enabling a [surge in misinformation](#) about climate change.

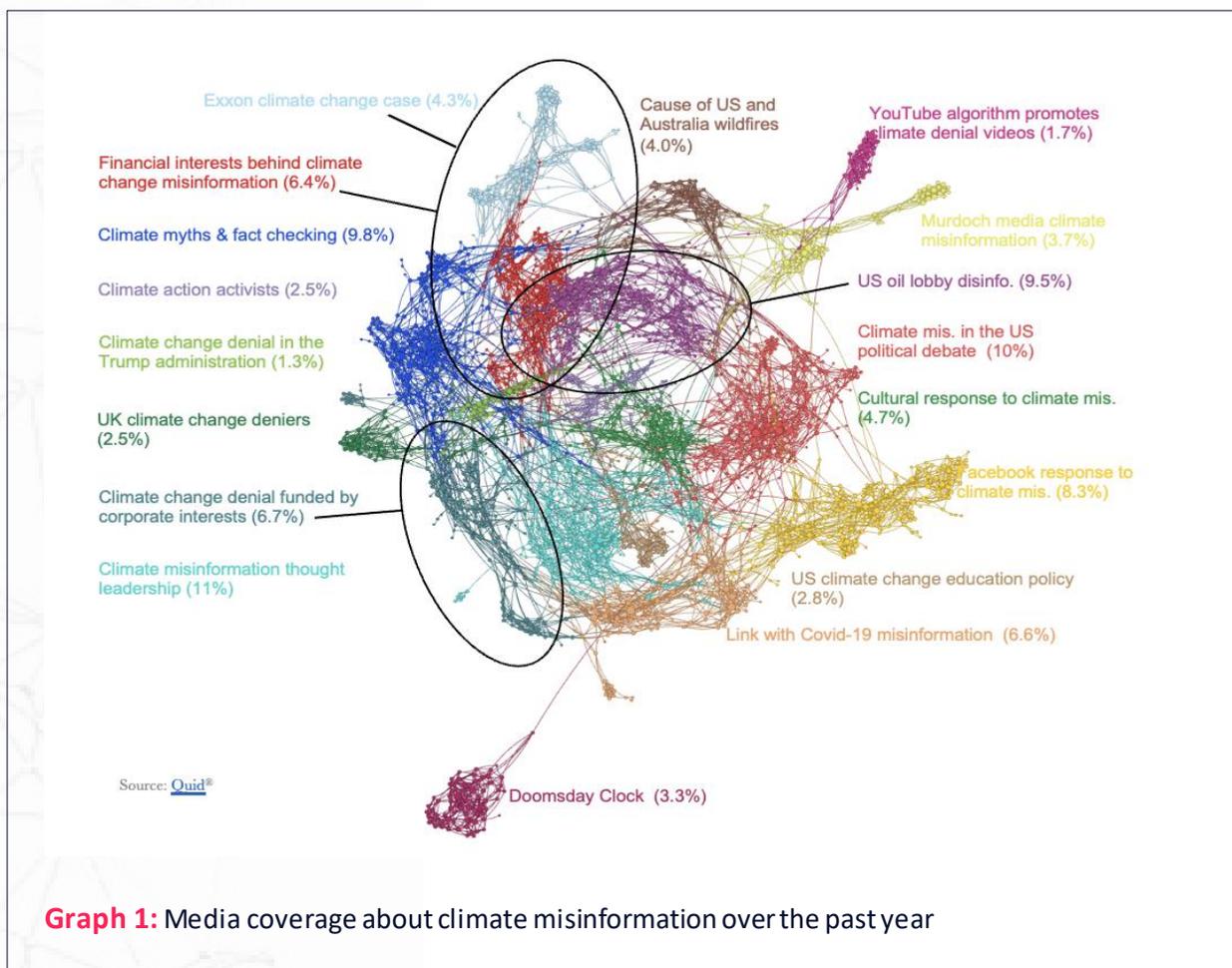
In the past few years, there have been numerous examples of climate change misinformation proliferating on social media, including the Texas [fake snow conspiracy theory](#), the Antifa [wildfire conspiracy theory](#), as well as the uncovering of a 2018 Facebook post from the far-right Congresswoman Marjorie Taylor Greene suggesting that Californian wildfires had been started by PG&E in conjunction with the Rothschilds using [space lasers](#). The last of these prompted a Twitter backlash under the hashtag #JewishSpaceLasers, a reference to antisemitic tropes used by the Congresswoman.

Yet not all cases of climate misinformation are quite so extreme or easy to identify. Whilst historically, climate misinformation has been associated with climate denialism, the [American far right](#) and vested interests such as the fossil fuels industry, [recent research](#) suggests that in our digital, networked age, the picture is more complicated and that climate misinformation could also incorporate climate scepticism, denial, contrarianism, and even climate alarmism. Like other topics of misinformation, the characteristics of social media—such as homophily and echo chambers—could also contribute to the diffusion and amplification of climate change misinformation.

The consequences of climate misinformation are high. What we see in the news and on social media can shape how likely we are to engage in climate-friendly behaviour, and therefore, how we respond to this emergency.

To help shed some light on how climate misinformation is being used and understood in ordinary language, we used natural language processing to analyse media commentary around this subject matter. Our analysis of English-speaking media referencing climate misinformation over the past year illustrates the growing public awareness of climate misinformation as a societal and education issue.

Media coverage about climate misinformation explored the multiple aspects and impact of climate misinformation on our societies and economies, from activist capitalism to culture wars. Interestingly, a high volume of media coverage of this issue also focused on the top-down elements of climate misinformation, drawing attention to the role that corporate and financial interests play in this area, as well as the huge historical impact that the oil lobby has played in fuelling climate disinformation, which is now the object of lawsuits around the world.



Whilst much of the existing media coverage we have seen to date has focused on climate denial, particularly in the context of the US, as well as the role of corporate interests and even corporate climate disinformation efforts, we wanted to explore this further to see if this matched how climate misinformation is manifesting “in the wild” on social media. It is for this reason that APCO Worldwide and Logically joined forces to apply a data-driven approach to understanding the changing nature of climate misinformation.



Section 2

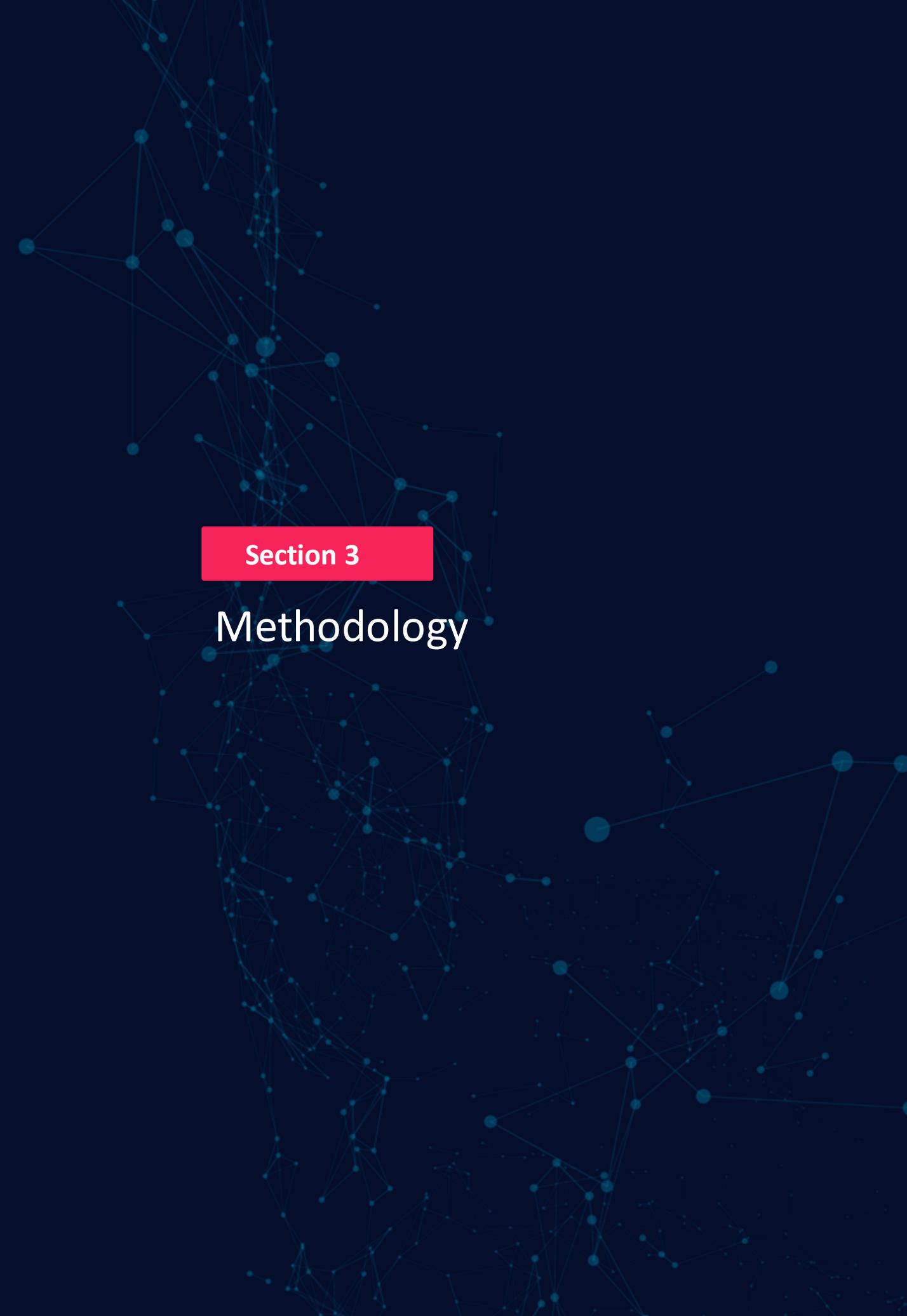
What is climate change misinformation?

What is climate misinformation?

Defining misinformation in a consistent way has been a challenge for researchers in this field. In attempting to define misinformation, we confront many problematic questions, such as whether a piece of information can become misinformation if current understanding changes, or if misinformation should account for the intention and beliefs of the misinformer or the misinformed.

Some [researchers](#) have characterised misinformation based on what is considered to be correct or incorrect by the expert consensus at the time. Other scholars, such as [Vraga & Bode](#), have offered a more nuanced definition in which “misinformation as a measured concept is dependent on the state of evidence, expert beliefs, and the information environment in which they occur.” These researchers emphasise that the definition of misinformation depends on two criteria 1) amount of observable, concrete evidence and 2) level of expert consensus available. As the researchers point out, “the issues for which the expertise and evidence are both clear and settled – like vaccination or climate change – are relatively rare.”

Following Vraga and Bode’s definition, **we define climate misinformation as communication that contradicts or distorts the scientific evidence and expert consensus that the planet is warming as a result of human activity, and that this will lead to significant instability and damage to the environment.** A further point that underpins our definition is the understanding that **a proportion of damage is avoidable if significant action is taken.**



Section 3

Methodology

Methodology

The aim of our research was to understand more about climate misinformation, including how it manifests, how it spreads and more about its possible causes. To accomplish this, we conducted an extensive analysis of a large open-source dataset in the following stages:

1. **Data Ingestion:** Aggregating a large dataset of open-source online news articles and social media posts.
2. **Narrative Segmentation:** Using a combination of automated and manual approaches to segment the dataset into cohesive climate misinformation narratives.
3. **Narrative Analysis:** Undertaking an in-depth quantitative and qualitative analysis of the relative performance and impact of each segmented narrative.

Data Ingestion

Data ingestion took place in two stages. First, we collected as much data as possible about climate change misinformation. To do this, we wrote a complex Boolean search query which we designed to capture a wide range of online news articles and social media posts about climate change misinformation and related topics, and applied it to Logically's database of open-source content. The search query was written with reference to contemporary scholarship on climate change misinformation and in consultation with experts in climate and science communication. Second, we cleaned the dataset to exclude any irrelevant material.

Our data contained online news articles and social media posts published between **April 2019 and August 2021**, to help us understand the impact, if any, of the COVID-19 pandemic on climate change misinformation. We limited our data ingestion to the English language for ease of processing and manual analysis, but included content from across the world.

We also manually cleaned our dataset to exclude original content from mainstream news outlets (although discussions about articles published in these outlets were still included), to help us understand how climate misinformation was manifesting in grassroots news and social media conversations. It is interesting to note that mainstream news content accounted for roughly two thirds of the total mention volume in the original data pull, implying that there is vastly more discussion of climate misinformation, or climate misinformation from mainstream news sources, than there is organic climate misinformation.

Our master query returned a total of 10.26 million individual articles and posts from across Twitter, Facebook, Instagram, Reddit, YouTube and the open internet. To create a more manageable dataset for large scale AI processing, we randomly selected 65% of the available data for ingestion, leaving a total dataset of **6.67 million publications by 2.25 million** unique accounts or sources.

Narrative Segmentation

The concept of narrative is a useful tool for navigating complex information spaces. Understanding what narratives are and how they work in human communication is an essential part of understanding misinformation as a modern phenomenon. We understand narratives as clusters of online content which feature similar attitudes and beliefs about similar entities and offer similar political and social explanations for contemporaneous topics and events. For example, one tweet saying “Climate change is just another scam to line the pockets of the elite” would belong to the same narrative as one which said “Don’t fall for the Gates and Soros global warming propaganda. Do your own research. Who benefits?” Whilst these tweets don’t share any syntactic similarities with the other, both express similar attitudes that climate change is a hoax intended to further the financial goals of the elite.

Individual articles or posts may belong to multiple narratives, and each narrative may also be broken down into further sub-narratives. Identifying narratives allows us to track their progression and influence across various social media platforms. Once mapped, these narratives can be analysed to identify “drivers”; key events or individuals that help to influence the narrative’s shape and features. The availability of open-source data allows for the potential analysis of billions of public conversations, made up of trillions of individual pieces of content. Logically has developed proprietary artificial intelligence (AI) pipelines making use of advanced Natural Language Processing to specifically understand issues connected to online misinformation narratives, which allow us to process the vast quantities of available data to understand online conversations in the aggregate.

Narrative Analysis

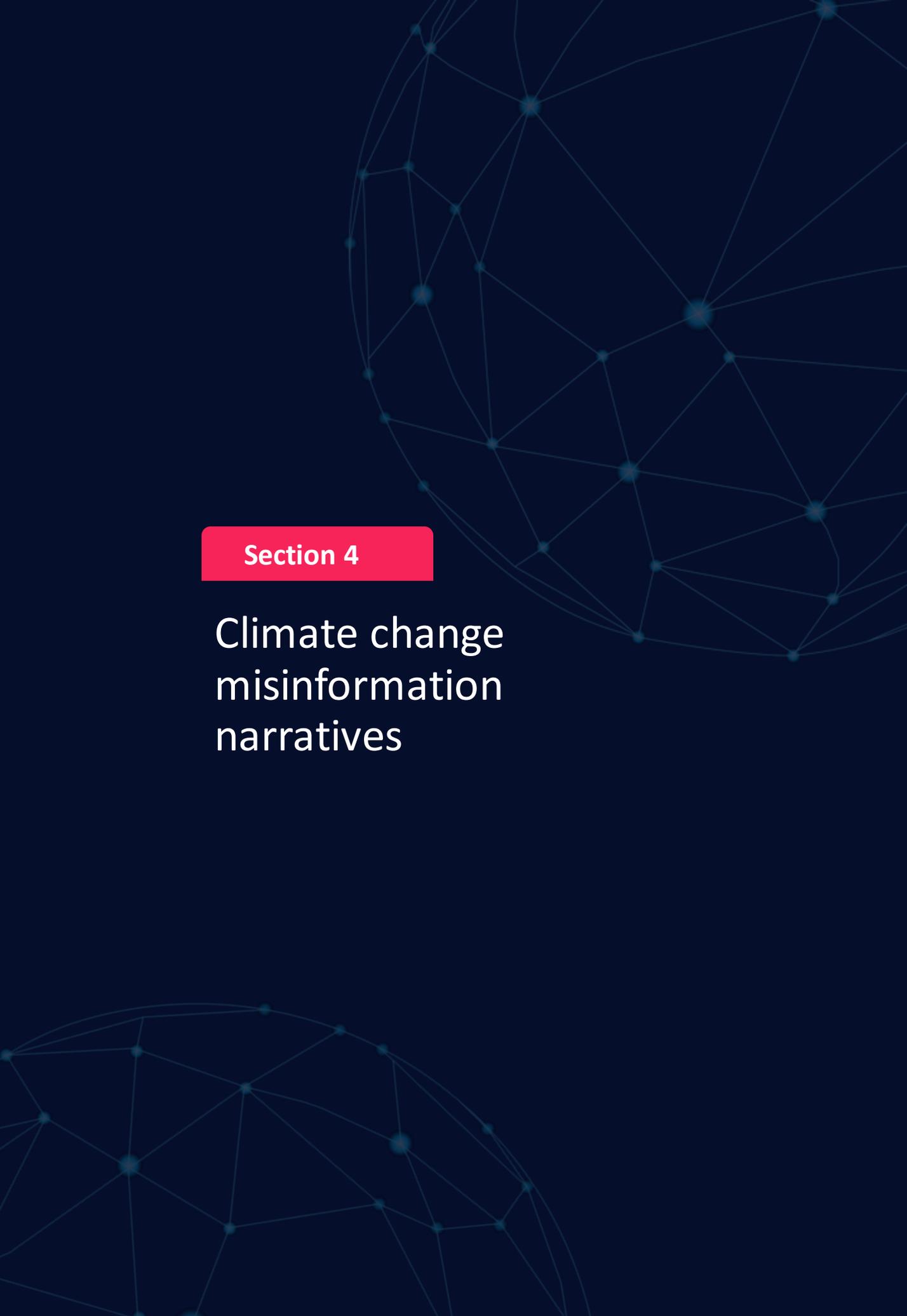
Having constructed our sample dataset, we used a combination of human intelligence and AI models to segment the data into cohesive climate misinformation narratives. First, we segmented “prior” narratives which we were already aware of based on our pre-existing understanding of climate misinformation through secondary research.

Second, we deployed Logically's narrative extraction AI pipeline, which uses Natural Language Processing, together with content signals from metadata and network associations to recognise coherent narrative clusters within large datasets. This approach helped us to identify as yet undiscovered—or emerging—narratives to ensure that the narrative segments we identified were genuine, and also helped to mitigate against confirmation bias: the risk that we might be searching for narratives in the dataset which were not present organically.

Narrative Volume

We used narrative volume as our metric for determining the relative popularity of a narrative or sub-narrative. A narrative's volume is the number of articles or posts which belong in that narrative cluster within a given timeframe. The narrative volume figures given in this report are relative to our sample dataset of 6.67 million pieces of content.

It is important to note that the volume of a narrative is only a rough indication of its prevalence in the social media ecosystem. Because most social media platforms make use of some variety of algorithmically moderated feed, the fact that a lot of people are creating content supporting a certain narrative does not by itself mean that a lot of people are engaging with that content.



Section 4

Climate change
misinformation
narratives

Five climate misinformation narratives

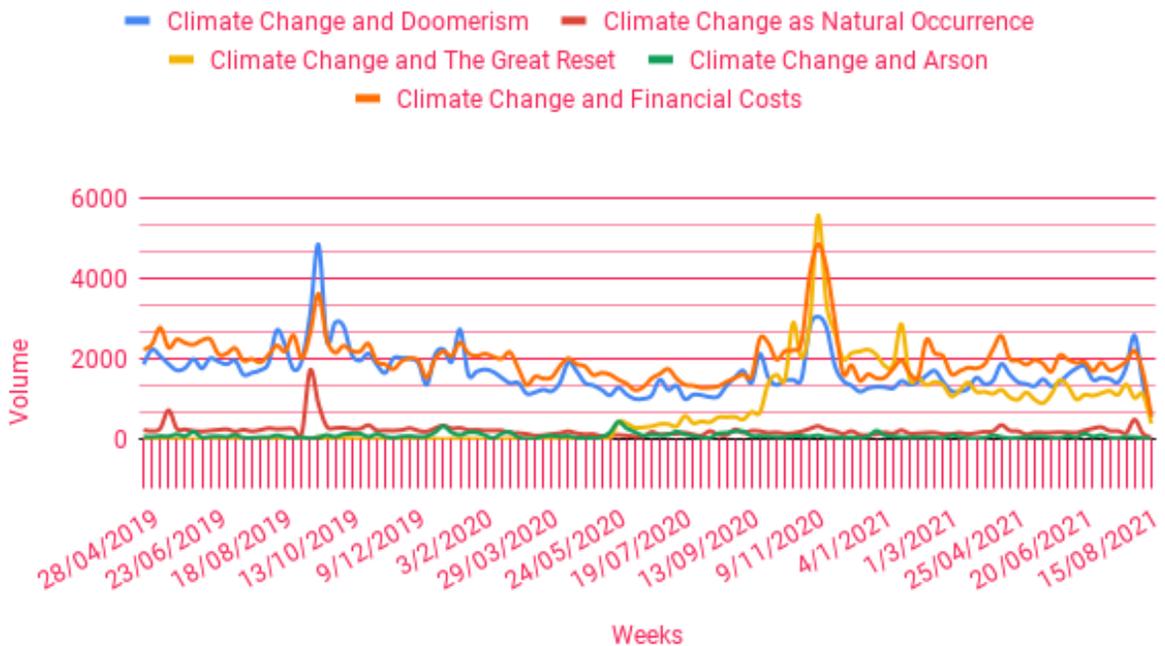
Our research helped us to identify the following five key and distinct climate misinformation narratives between January 2019 and August 2021:

1. Climate Change and The Great Reset
2. Climate Change and Financial Costs
3. Climate Change and Doomerism
4. Climate Change as a Natural Occurrence
5. Climate Change and Arson

Whilst the volume of climate misinformation fluctuated in this period, we saw a **number of changes in the volume and nature** of climate misinformation in 2020, as a result of the **COVID-19 pandemic**.

Despite data ingestion covering **6.67 million individual data points**, most of the narrative volumes topped out at totals of around **1,000 posts** even at their peaks.

Citizen Narrative Breakdown

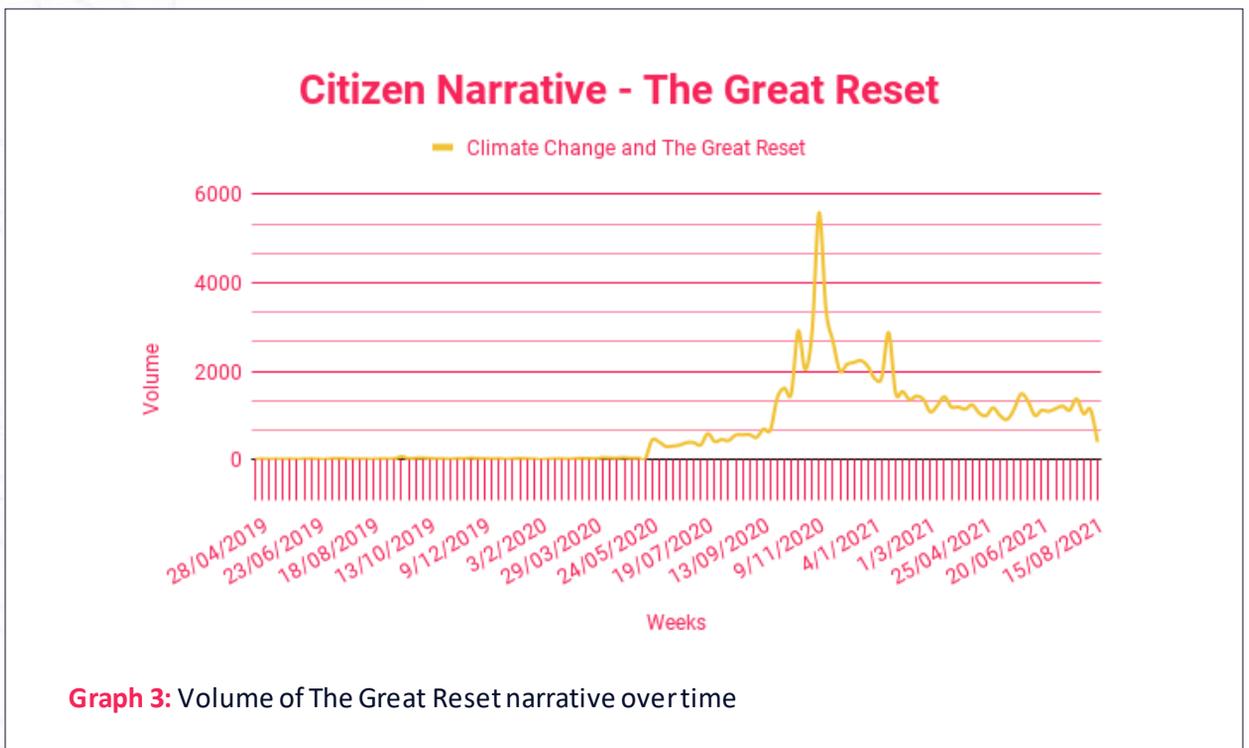


Graph 2: Volume of five identified climate misinformation narratives over time

Narrative 1: The Great Reset

The narrative that climate change is invented or exaggerated to impose a coercive agenda on the world's population is a constituent part of a larger conspiracy theory known as "The Great Reset." This theory is inspired by a widespread misunderstanding of a set of proposals made by Klaus Schwab, the head of the World Economic Forum (WEF), at the 50th annual meeting of the Davos summit in 2020.

At the meeting titled The Great Reset, Schwab outlined a belief that the COVID-19 pandemic represented an opportunity to reset the global [economy](#). Schwab's speech included references to ending fossil fuel subsidies to transition to a greener economy, a wealth tax and ideas about the potential for new technology to transform how we work.



Key insights

This narrative is driven by proponents of The Great Reset conspiracy theory who believe that world leaders planned the COVID-19 pandemic as part of a broader coercive agenda.

Paranoia about the pandemic allowed conspiracy theorists to use the proposal to develop and spread a set of wild theories about economic collapse deliberately engineered by a global elite. The Great Reset conspiracy theory has been widely informed by pre-existing conspiracy theories, including [QAnon](#) and the [NESARA](#) conspiracy, both concerning plots to install a “New World Order,” or otherwise radically reshape the global political economy.

 **Madam Curious - Proudly Unvaccinated**
@MadamCurious

Don't worry about The Great Reset folks - in 10 years we will have The Great Regreta. That'll be the time that Greta regrets not finishing School, getting a paid job and wondering why Socialism doesn't work, whilst the Global Warming Climate Change Scam is debunked yet again.

 **Greta Thunberg** @GretaThunberg · Jan 4

When your house is on fire you don't wait another 10, 20 or 30 years before calling the fire department.
When your house is on fire you don't wait another 10, 20 or 30 years before you stop actively pouring petroleum on the flames. You act now.
In every way you possibly can.

9:03 AM · Jan 8, 2021 · Twitter Web App

1 Retweet 13 Likes

 **Rob**
@75otingocni

By how much is this investment offsetted dear @BorisJohnson with destroying your people and their way of life, using the Climate Hoax, Mass Third World 'Immigration', Brexit Sabotage and the Great Reset?

Sorry for saying, but you're a disappointing conservative dudd, dear Boris.

 **Boris Johnson** @BorisJohnson · Nov 19, 2020
United Kingdom government official

We are investing an extra £16.5 billion to defend our people and way of life 🇬🇧



0:02 460.3K views

10:53 PM · Nov 19, 2020 · Twitter for iPad

11 Retweets 8 Likes

Narrative Timeline

- The Great Reset narrative originated in early June 2020, at the time of the World Economic Forum meeting of the same name. By August, we started to see the narrative merging with anti-vaccine propaganda.
- On 12th October, a blogpost written by Klaus Schwab was published, expounding further on his vision of the Great Reset and capitalism after COVID-19. The World Economic Forum summit later in October coincided with an even larger, late October peak in this narrative.
- The highest peak was in mid-November, as a result of a viral video from September in which Justin Trudeau made a speech to a UN meeting, mentioning the possibility of a “reset” for the global economy.
- A final observed peak on 27th January coincided with another Davos summit held by the WEF.
- No further unusual peaks in volume were observed, however it is notable that the average volume for the Great Reset narrative **has not dropped below 1,000 articles and posts per week** in our dataset since October 2020, and remains among the highest performing climate misinformation narratives as we move towards the end of 2021.

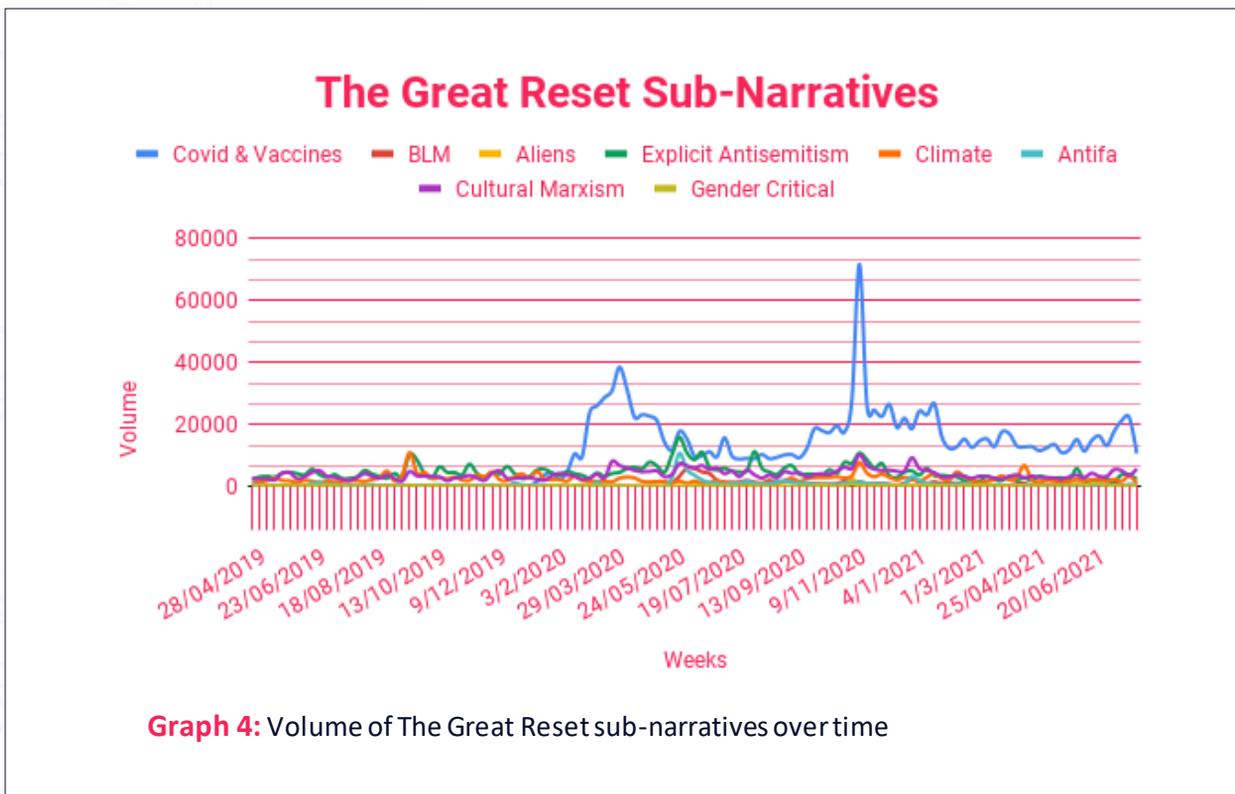
Sub-Narrative Analysis

The data attached to this narrative comes with an important caveat. At first glance, the data captured for the “Great Reset” analysis appears to show a huge amount of climate misinformation. But further breakdown of the data show that the Great Reset conspiracy is not itself a driver of climate misinformation per se.

The Great Reset is a meta-conspiracy theory, which incorporates narratives and grievances ranging from concerns about a transition to a “cashless society,” to the idea that vaccines are a means of population control. Among these, publications expressing the belief that climate change is a tool to achieve these goals persists, but at a low level compared to content relating to vaccines.

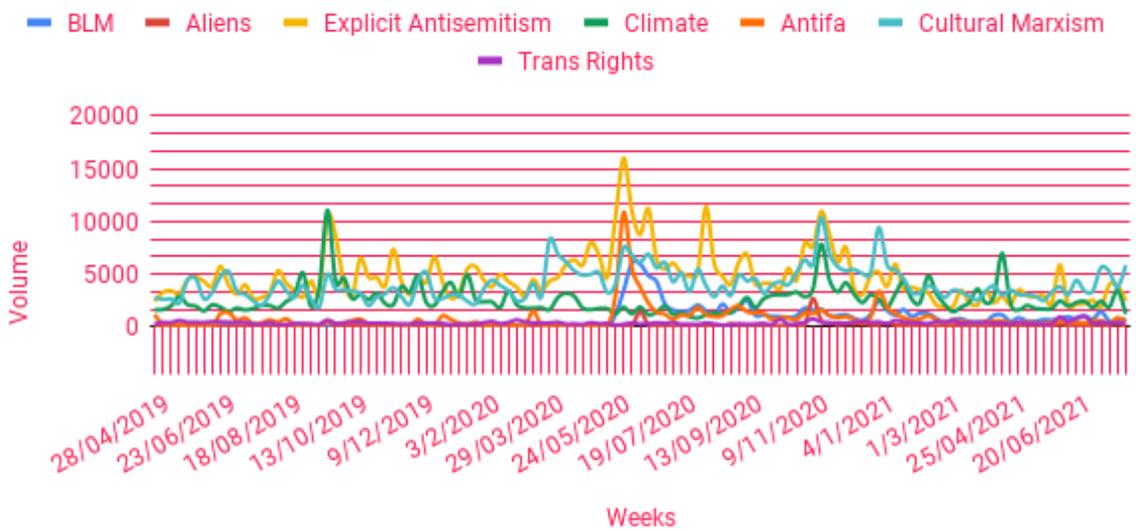
While some Great Reset proponents believe strongly that climate policy is the driving force behind the entire theory (see Graph 4), it is not the case that all Great Reset conspiracists, nor all Great Reset conspiracist posts, directly connect Climate Policy with the conspiratorial Great Reset agenda.

Our data show that the vast majority of articles and posts gaining traction within the Great Reset conspiracy theory landscape is related to COVID-19 and vaccines. To demonstrate this, we can compare the below charts (Graphs 4 and 5). Graph 4 shows all data captured for the Great Reset theory between April 2019 and August 2021. Graph 5 shows the same dataset, with the misinformation data points related to the COVID-19 sub-narrative removed.



Whilst climate misinformation is not the main sub-narrative within the Great Reset data field, the Great Reset theory is highly mutable in nature and as climate change becomes a more salient political issue, this could become more widespread.

The Great Reset Sub-Narratives Minus COVID-19 Sub-Narratives

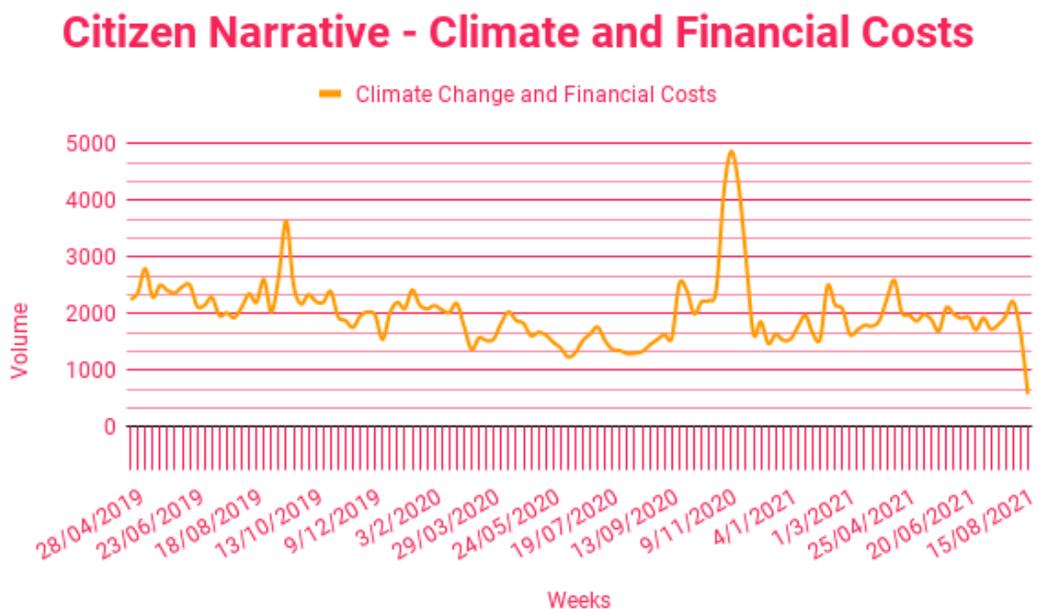


Graph 5: Volume of The Great Reset sub-narratives over time, minus COVID-19

Narrative 2: Climate Change and Financial Costs

The belief that climate policy is too expensive to be worthwhile, or that it is a deliberate scam to siphon money to the already wealthy, shares many rhetorical features with the Great Reset narrative. This narrative is, however, distinct, because it relates not only to fiscal policy and events, but to the wider political framework that aims to intervene in climate change.

Our analysis shows that this narrative's trajectory tracks closely with policy announcements, and especially those made by U.S. politicians and/or with large monetary figures attached.



Graph 6: Volume of Climate Change and Financial Costs narrative over time

Key insights

This narrative is driven by the belief that climate change policies are too expensive. Spikes in this narrative tend to occur around climate change policy announcements.

William Zabka's Left Leg @DrWho_Cares · Feb 9, 2020

That's it isn't it is.. Will Nuclear power be better in the long term over solar/wind?

1

D Oconnell @davidocconnell46

Replying to @DrWho_Cares @matttreacy and 2 others

Nuclear, coal and hydro are far better and cheaper than solar and wind in both the short term and the long term.

Both solar and wind use a lot of energy to build them, wind farms kill birds, solar contains toxic chemicals and both have to be disposed off after 15 to 25 years.

12:40 AM · Feb 9, 2020 · Twitter Web App

1 Like

Mr.Taxi666 @ArchibaldLeach6

Replying to @JayHSalem

Electric cars are a joke. From start (mining the rare earths) to finish (disposing of the lithium etc...) electric cars have just as much impact on the environment as gas burners. In fact considering how dangerous some of the elements like lithium are, perhaps more.

2:10 AM · Feb 8, 2020 · Twitter for Android

UN: Red alert for the "blue planet"

Posted by u/Laytonaut 2 years ago

13 UN: Red alert for the "blue planet" bbc.co.uk/news/s...

43 Comments Share Save Hide Report

Sort By: Best

View all comments Show parent comments View discussions in 5 other communities

astalavista114 · 2y

So when the Australian Government wanted to go for CCS in 2013, and all the experts told them it doesn't work, and wouldn't be sufficient to cut emissions—and, because you need to power the CCS system, which means more coal needs to be burnt, *increases* the amount of carbon emissions over the whole system—they were wrong?

And as for your Edit—no I don't, and yes, I do. I just want some evidence that it could be implemented at full scale were that investment to be made.

1 Reply Share Report Save

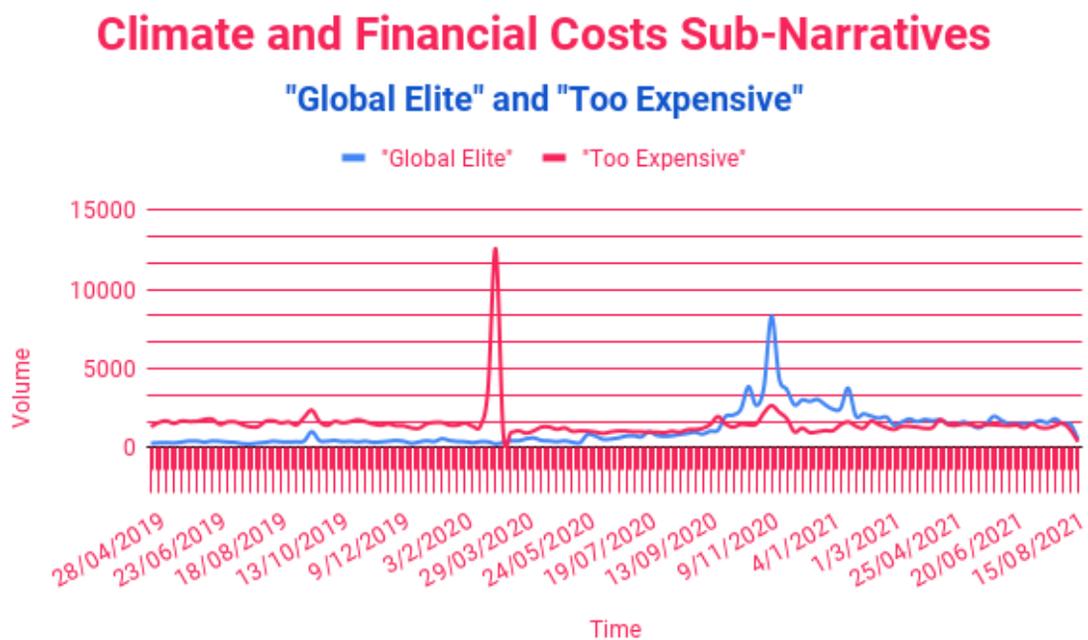
Narrative Timeline

- The first medium-level peak for this narrative occurred on 13th May 2019, coinciding with Democratic Representative Alexandria Ocasio-Cortez's Green New Deal rally in Washington D.C. This was followed by another peak on 22nd August 2019, timed with the then-presidential candidate Bernie Sanders' unveiling of his Green New Deal plan.
- The highest peak in this narrative occurred on 23rd September 2019, coinciding with Greta Thunberg's speech to the United Nations Climate Action Summit. Around this time we found that this narrative was particularly popular on Reddit.
- On 9th March 2020, we saw a peak in this narrative at the same time as the European Commission tabled its Circular Economy Action Plan, as part of the European Green New Deal.
- By late 2020, when the U.S. presidential campaigns were in full swing, we observed more peaks in climate misinformation activity linked to this narrative:
 - On 2nd October 2020 we observed a peak coinciding with the televised presidential debates, during which the then-candidates Donald Trump and Joe Biden discussed climate policy, among other issues. Trump made the [misleading claim](#) that the U.S. had recorded its lowest carbon emissions since the 1990s and also stated that wind energy is "extremely expensive" and "kills all the birds."
 - Throughout November 2020 we observed peaks coinciding with the aftermath of the presidential election and subsequent vote counting, particularly among Americans.
- Going into 2021, we observed a peak in February coinciding with the Texas energy crisis in which more than four million Texans were left without power in freezing temperatures. The subsequent conversation on climate change was a tug of war between those concerned about similar events if climate change worsens, and those who believe that climate change policies are inefficient and will reproduce similar crises.
- Between 13th April and 23rd April 2021, we observed another peak coinciding with Joe Biden and John Kerry's virtual summit on climate change.
- A final peak in this dataset took place between 10th June and 14th June 2021, alongside the G7 summit in Cornwall, in which world leaders discussed a green recovery from the pandemic and warned that the world faces a "tipping point" on climate change.

Sub-Narrative Analysis

We divided this narrative into two further sub-narratives. The first sub-narrative (sub-narrative A) is the idea that climate policy is “too expensive” for governments to justify; the second (sub-narrative B) is that climate policy is a “money-making scheme” for elites. Sub-narrative A benefits from overlap with mainstream conservative commentators and news outlets, who are motivated by ideological opposition to state spending. Proponents of this narrative usually believe that climate change is a real phenomenon, but that it is not possible to mitigate the effects. Sub-narrative B overlaps with the Great Reset in that its proponents are more likely to believe that climate change is a hoax. Some suggest that the phenomenon is real but its effects are being exaggerated to increase demand for renewables.

Separating out these sub-narratives provides a useful illustration of how radicalisation could potentially work within communities that coalesce around misinformation: a person may be sympathetic to sub-narrative A, find that sympathy bolstered by mainstream news sources, and then adopt a more extreme narrative: that not only is climate policy too expensive to implement fairly, but that it is deliberately too expensive.



Graph 7: Volume of Climate Change and Financial Costs sub-narratives over time

Case study: Institute for Energy Research and Capital Research Center

While fringe beliefs such as conspiracy-driven climate denialism may seem largely organic, emerging through a remix of existing conspiracy narratives and climate scepticism, we did find some evidence of more organised actors invested in laundering misinformation.

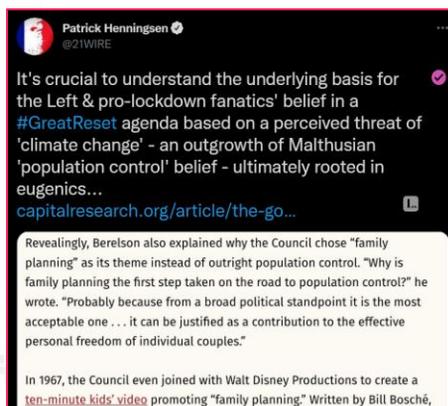
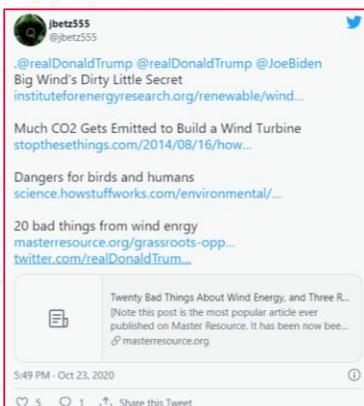
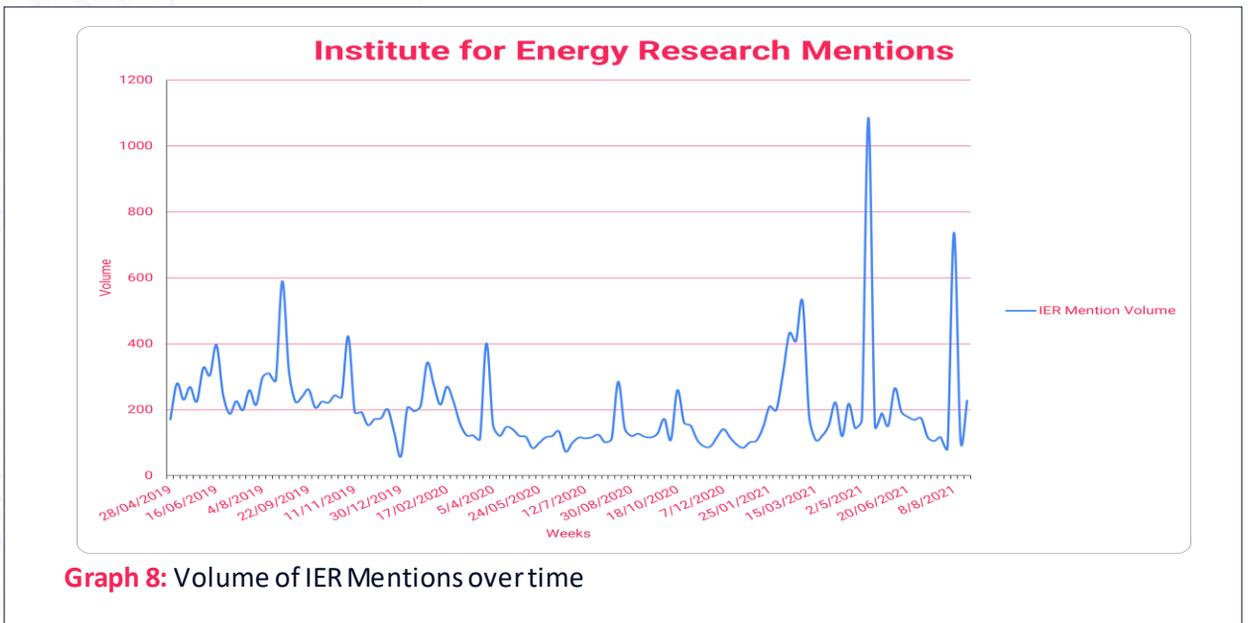
Two organisations that came up in our Logically Intelligence research as sources of this kind of climate misinformation were the Institute for Energy Research (IER) and Capital Research Center (CRC). Both of these organisations are [funded](#) by a [host](#) of fossil fuel interests, and have a history of promoting stories that discourage the use of renewable or green energy in favour of fossil fuels. The main narratives promoted by these organisations are cost-related, falling into either the cost-focused sub-narratives outlined above, or the related idea that climate policy is costly in other ways unrelated to monetary cost. For example, the IER has [contended](#) that the benefits of renewable energy alternatives are outweighed by their dependence on mining for rare earth metals; such mining operations being dominated by China and other non-US interests.

Rather than push easily dismissed misinformation, these institutes criticise climate policies by using arguments focused on the environmental and strategic impact of initial manufacturing associated with climate policy. They maintain that they use “Objective Science” and an [“Impartial and Unbiased”](#) approach to energy analysis based on free-market principles.

In addition, Logically Intelligence shows that IER and CRC articles are often reposted on other ambiguously named websites such as environmentalprogress.org. This misinformation around the cost of green energy is also shared alongside articles from sites such as HowStuffWorks as a way to further legitimise the claims. Interestingly, volume data from our dataset shows that **direct supportive mentions of the IER consistently outperforms** the total support for both the “Climate Change and Arson” and “Climate Change as a Natural Occurrence” narratives.

Our research also found articles from the CRC discussing Green New Deal–supporting representatives being shared alongside articles from NeonNettle, a [disinformation website with Neo-Nazi leanings](#), as a way to further antisemitic conspiracy theories. This helps to illustrate the bidirectional nature of this kind of misinformation.

As outlined above in the sub-narrative analysis, more credible–seeming misinformation can often form a pipeline towards online radicalisation for susceptible users, but it can also do the opposite, giving the already-radicalised the appearance of a credible foundation for their beliefs, and preventing the risks they pose to the information ecosystem from being fully recognised by outside observers.

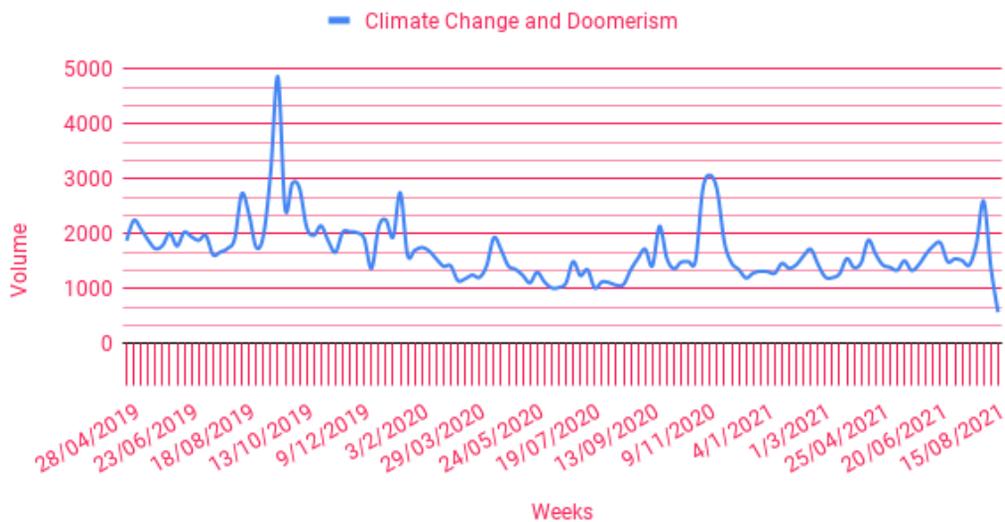


Narrative 3: Climate Change and Doomerism

The idea that climate change has progressed too far for human intervention to have a significant impact was consistently high in volume, rivalled only by the “Climate Change and Financial Costs” narrative. For the sake of brevity, we have named this narrative Climate Change and Doomerism, since it is propounded by people on the internet who believe that climate change is occurring, but that it is too late to do anything about it.

The data relating to the doomerism narrative shows a sustained level of uptake across the channels we tracked. There are some peaks which are outlined in the timeline below, but the base level of general “noise” relating to this narrative is more consistent than other narratives.

Citizen Narrative - Climate Change and Doomerism



Graph 9: Volume of Climate Change and Doomerism over time

Key insights

This narrative is driven by the belief that it is too late to reverse climate change. It is one of the most consistent narratives, likely sustained by a steady stream of “bad” news reports relating to climate change.

There are several possible reasons for the consistency of the doomer narrative. The most prominent of these, according to our analysis, is that the users associated with this narrative believe strongly that climate change is a problem and will seriously affect our way of life. This contrasts with the user base associated with the other narratives, who believe that climate change is a hoax, or that its effects are being exaggerated. These differing profiles go some way to explaining the different data outcomes: for one thing, there are far more people who believe in the problem of climate change than those who do not. Additionally, the kind of news that animates the doomer narrative user base—such as localised weather events — is a more regular occurrence than are the catalysing events that drive the more denialist narratives.

 **Lee in Iowa #TeamPelosi** @Lee_in_Iowa · Dec 30, 2020

FEED THE BIRDS!! The insects are all gone from GMO corn & soybeans (the pollen blows into the ditches too & kills the larva and butterfly baby worms).

 **Smithsonian Magazine** @SmithsonianMag · Dec 29, 2020

The majority of the birds had depleted fat deposits, empty stomachs, small amounts of blood, kidney failure and shrunken flying muscles. ow.ly/gAdc50CWpGe

1 11 19

 **Amzieaa** @amzieaa

Replying to @Lee_in_Iowa

study on agri based society-
loss of birds was based on more deforestation due to planting
thought the insects would increase due to loss of birds
and this would lead to more deforestation-due to insects eating plants and need to replace crops
+pesticides

were doomed

12:15 AM · Dec 30, 2020 · Twitter Web App

 **Ben See** @ClimateBen

Remember:

1. fossil fuel extraction is growing
2. 2019 emissions set a new record
3. peak emissions not on horizon
4. fossil fuels thrashing renewables
5. COPs keep failing
6. markets can't end extinction fuels fast enough (or at all?)
7. governments refuse to act

Predicament.

3:33 PM · Jan 2, 2020 · Twitter for Android

160 Retweets 3 Quote Tweets 314 Likes

 **Cobalt_Caster** · 4m

Yeah, uh, the thing that makes me doom isn't that it's impossible to fight climate change. By all means, we have what we need to mitigate it.

It's that we have the ability to save ourselves *and just fucking won't*.

25

 **YehNahYer** · 4m

I know right? All we have to do is completely shut down the economy, stop manufacturing and go back to horse and cart. A bit like lockdown but 5x times more debilitating because 8 to 10% did nothing and CO2 emissions won't halt or reverse unless we get to 60%.

So we at least need 30% so we all die slowly.

Or you know we could all convert to zero emissions nuclear and solve CO2 emissions immediately.... But no we can't save the planet on account of a few historic disasters by badly run old tech.

7

[Continue this thread](#)

This narrative is also notable for the amount of pushback it receives, in contrast with the denialist or conspiracy narratives, whose followers are often siloed off into isolated communities, with lower overlap with academics and communicators. The doomer narrative, on the other hand, has sparked countless articles and [posts](#) aiming to communicate that substantive action is still possible.

Narrative Timeline

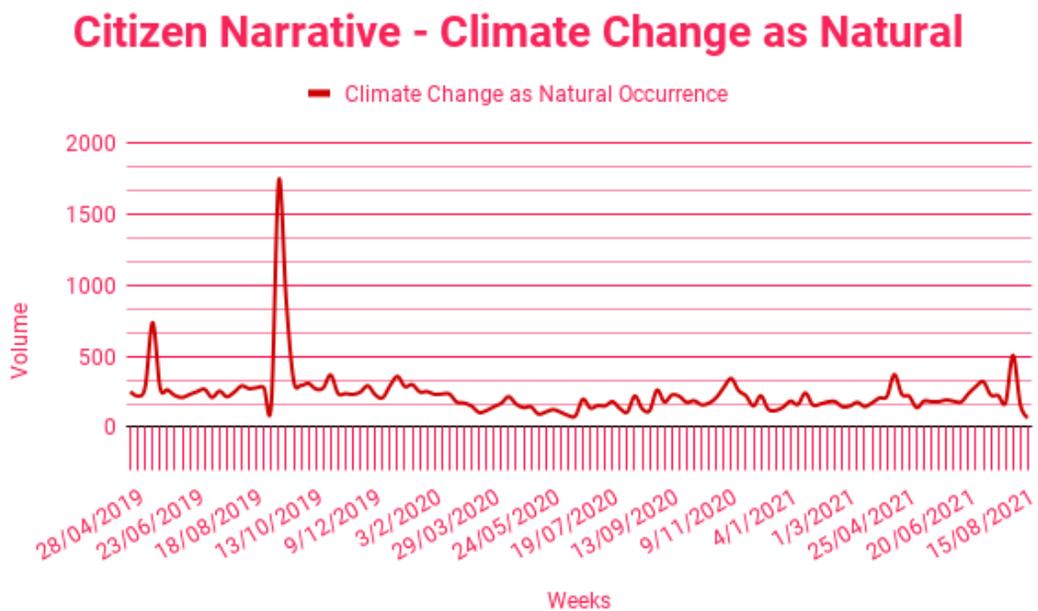
As highlighted above, the data representing this narrative benefit from a steady stream of “bad news” relating to climate change, which maintains its consistency. The dataset does, however, show peaks that deviate from its nevertheless consistent bottom line. As we might expect, in this narrative the deviations coalesce around particularly alarming media reports, which, unlike the other narratives isolated, come from overwhelmingly reliable sources.

- A high peak occurred on 24th September 2019, which coincided with Greta Thunberg’s speech at the UN Climate Action Summit. Here the doomer narrative was popular on Reddit as well as independent blogs and forums.
- On 21st January 2020 we observed another peak aligned with the World Economic Forum's 2020 Annual Meeting in Davos, whose itinerary included another speech from Greta Thunberg. Once again, the narrative was popular on Reddit as well as independent blogs and forums.
- A 23rd April 2020 peak coincided with the 50th anniversary of Earth Day. Popular shares included a [UN World Food Programme report](#) warning that the COVID-19 pandemic could cause a “famine of biblical proportions.”
- A 9th July 2020 peak occurred around the time of multiple media publications, including a [TIME article](#) titled “2020 Is Our Last, Best Chance to Save the Planet” as well as a [plea from Sir David Attenborough](#) not to allow the Zoological Society of London to “go extinct,” and a United Nations Environment Programme report, warning that [“Climate change has not stopped for COVID19.”](#)
- A peak around 13th November 2020 coincided with a [USA Today report](#) titled “‘Past a point of no return’: Reducing greenhouse gas emissions to zero still won't stop global warming, study says.”
- Finally, a 22nd April 2021 peak coincided with President Joe Biden setting a 2030 greenhouse gas pollution reduction target. Here, the narrative was once again popular on Reddit as well as independent blogs.

Narrative 4: Climate Change as Natural Occurrence

In our preliminary research, this idea appeared to be a promising standalone narrative. We anticipated that it would be mostly attached to extreme weather events, with historical comparisons, such as heatwaves in the 1970s. However, unlike the other narratives we identified, an analysis of our dataset for articles and posts representing this narrative did not result in a large or coherent segment of our main data pull.

Notably, we only observed two significant peaks in the data. The first coincided with a global school strike for climate action, as well as the release of a [study](#) showing how climate is one of the most polarising issues in American politics, according to self-reported voter priorities; and the second with Greta Thunberg's September 2019 speech to the United Nations Climate Action Summit.



Graph 10: Volume of Climate Change as Natural Occurrence narrative over time

Key insights

Surprisingly, we found very low levels of data for the narrative that climate change is a natural occurrence.

Nara Hodge @Nara_Hodge · Aug 14, 2019 ...

Seems you're not allowed to express an opinion even slightly disagreeing with anything Greta Thunberg does. Immediately you're shut down by accusations of 'an attack on a young girl'. If she's considered old enough to be a game changer, then she's old enough to disagree with.

7 11 63

Mike Warrington @MikeWarrington7 ...

Replying to @Nara_Hodge

Its a complete Publicity Stunt and she is being brainwashed by the disillusioned ones!! Global warming is a natural occurrence we have had glaciers and dinosaurs before, enhanced maybe a little by man

6:17 PM · Aug 14, 2019 · Twitter Web App

1 Retweet 3 Likes

Tom Nelson @tan123 ...

"Three new research studies confirm that geothermal heat flow, not man-made global warming, is the dominant cause of West Antarctic Ice Sheet (WAIS) melting," writes geologist James Edward Kamis. iceagenow.info/volcanoes-melt...

12:07 AM · Jan 10, 2020 · Twitter Web Client

474 Retweets 42 Quote Tweets 715 Likes

Keith B @KeithB59 ...

Replying to @jeremycorbyn

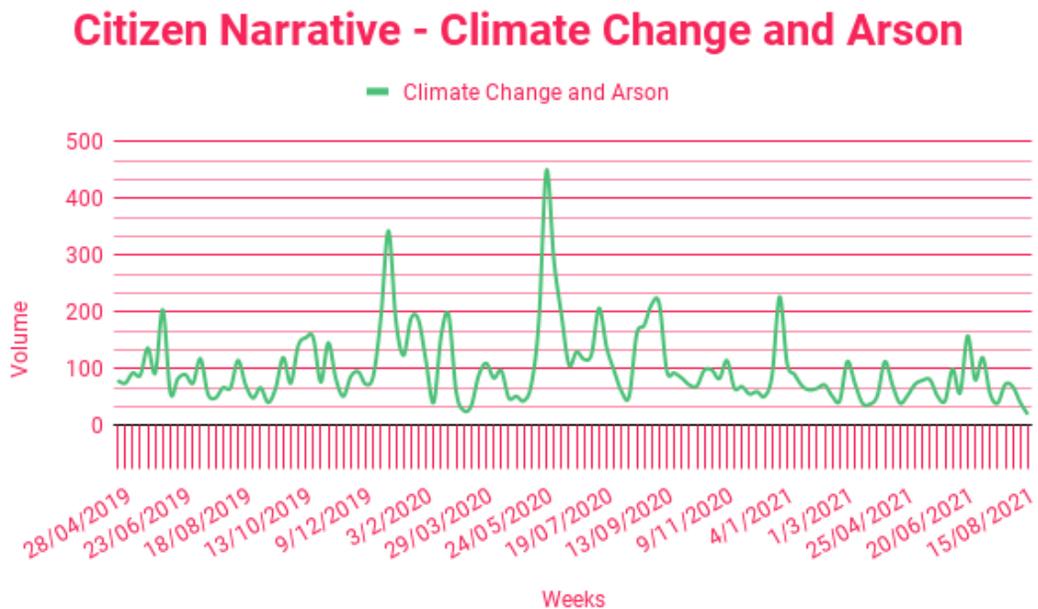
Global warming is a natural occurrence. But it's being hyped because we will run out of oil at some stage, and those making money from that want a replacement, so they're pushing other forms of power.

4:51 PM · Dec 7, 2019 · Twitter for iPad

🗨️ ↻️ ❤️ 📤

Narrative 5: Climate Change and Arson

Our findings relating to this narrative are striking. At the time of the 2020 wildfires in California and Oregon, [reports suggested](#) a [significant problem](#) caused by misinformation in this area. Rumours circulated online attributing the fires to arson by the anti-fascist action groups, collectively referred to as Antifa. This was a memorable narrative, and news reporting around this issue suggested it was widespread enough to attract national attention. **However, the data produced by our investigation showed that the presence of this narrative, even historically, was comparatively low.** In fact, this narrative, which unlike many specific conspiracy narratives had made national news, had a lower volume of posts than any other identified narrative.



Graph 11: Volume of Climate Change and Arson narrative over time

Key insights

We found a discrepancy between the volume of news reports about online climate change misinformation relating to arson, and the actual amount of misinformation we saw online about this subject.

One hypothesis for this anomaly is that many of the accounts posting climate misinformation relating to Antifa and wildfires were QAnon accounts. A significant proportion of the accounts posting QAnon content were removed from the platform in the weeks following the attack on the U.S. Capitol building by Trump supporters in early January 2021, looking to overturn the election result. The most plausible explanation for the low level of this narrative in our research is that the historical examples were wiped as a result of these bans. The bans were wide-ranging and Twitter's own figures suggested that [70,000 accounts](#) were removed. If this hypothesis is correct, then this finding highlights the need for archived historical data to be available to researchers when measures have to be taken to stop misinformation from spreading.

A supplementary hypothesis is that the narrative itself was so striking that it inspired news coverage disproportionate to the volume actually present on social media.

We know that this narrative is versatile and has at least achieved global reach, however. In Australia a similar narrative is present—though again at a very low level—suggesting that the Australian Greens were responsible for wildfires that engulfed the country in 2020 because of a change in policy relating to the practice of “backburning.” Outside of the English-speaking world, an almost identical narrative surfaced in [Turkey during forest fires in 2021](#), with users claiming that the fires resulted from arson by members of the left wing PKK, or Kurdistan Workers' Party.



Sox Fan
@pandreas14



I'll take 'George Soros Antifa Brown (black) Shirts for \$500 Alex'. Black hoodie, black pants, plays with fire, destroys things/places. What is an [#Antifa](#) terrorist? [#Soros](#) [#Riots](#) [#Fire](#) [#OregonFires2020](#) [#Arson](#) [#ElkRockFire](#) [#Oregon](#)



Katie Davis court @KatieDavis court · Sep 11, 2020

ELK ROCK, OR— An individual can be seen surrounding flames in the forest with materials used to commit arson. [#ArsonExposed](#) [twitter.com/zerosum24/stat...](#)

[Show this thread](#)

5:27 AM · Sep 12, 2020 · Twitter for Android

1 Retweet



4chan



Anonymous 13 Sep 2020, 22:48

ANTIFA SUSPECTED COORDINATED MASS ARSON ACROSS OR, WA, CA, + prev 277367999 NEW LEAD
<https://youtu.be/R6fdkEp1eY?t=673> CALL YOUR MAYOR AND DEMAND A CURFEW IGNORE THE SHILLS We are the authorities You are the evidence Trust the plan +++KEEP COLLECTING EVIDENCE+++ WE HAVE TO FIND A WAY TO PROVE THIS IS **ANTIFA** Hundreds of arson sightings are being called in. Residents are forming militias. Clackamas County OR is gone. Portland and Salem OR are surrounded by **fire**. 6,000,000 acres burning <https://www.nifc.gov/fireInfo/nfn.htm> "We have never seen this" The blazes could result in the "greatest loss of human lives and property due to wildfires in our state's history" <https://pastebin.com/9EVn72hR> <https://imgur.com/a/KpPtshj> 600,000 people statewide are under evac orders (10% of state population) https://www.kptv.com/news/oregon-wildfires-1-million-acres-burned-500-000-people-under-some-level-of-evacuation-order/article_e355b7ae-f3cb-11ea-a6ce-93011907052d.html Read: Prarie **Fire**, Days of Rage, Gulag Archipelago they are trying to scare you out of voting for Trump! https://twitter.com/hashtag/WaWILDFIRE?src=hashtag_click OregonFires CaliforniaWildfires #arsonexposed <https://twitter.com/KatieDavisCourt> **FIRE** MAP/CAM <https://tripcheck.com/DynamicReports/Report/Cameras> <https://www.esri.com/en-us/disaster-response/disasters/wildfires> <https://disasterresponse.maps.arcgis.com/apps/webappviewer/index.html?id=2ff1677111ae4018ac705f7c3312f> <https://www.windy.com/?52.670,-137.109,4> <https://bluelivesmatter.blue/police-arrest-multiple-suspects-in-connection-with-west-coast-wildfires/> <https://www.lawenforcementtoday.com/sources-series-of-wildfires-may-be-coordinated-and-planned-attack/> https://www.youtube.com/watch?v=DRSp_uhRhM4 Tucker's based coverage My parents said this is the worst they've seen the ashfall since Mount St. Helens. It's really smoky outside! I've lived in Oregon my entire life and have never seen smoke or fires like this.
277403926 and not a single of these maggots are talking about, not even that retarded **greta** girl. That's a damn good point. Remember it when retards try to pin this on **climate change**.

Discussion

There are several conclusions to draw from our research, in particular that unlike other kinds of misinformation, climate change appears to rarely be spread for its own sake. Climate change misinformation is more likely to be leveraged for other means, such as to discredit political candidates or to back up criticism of political opponents.

Our research found little to no evidence of individual “influencers” invested wholly in promoting climate misinformation, which contrasts with other misinformation movements such as QAnon, in which proponents of this conspiracy movement have been able to monetise their online influence. This finding may explain the relatively low level of reach and influence most climate misinformation communications have.

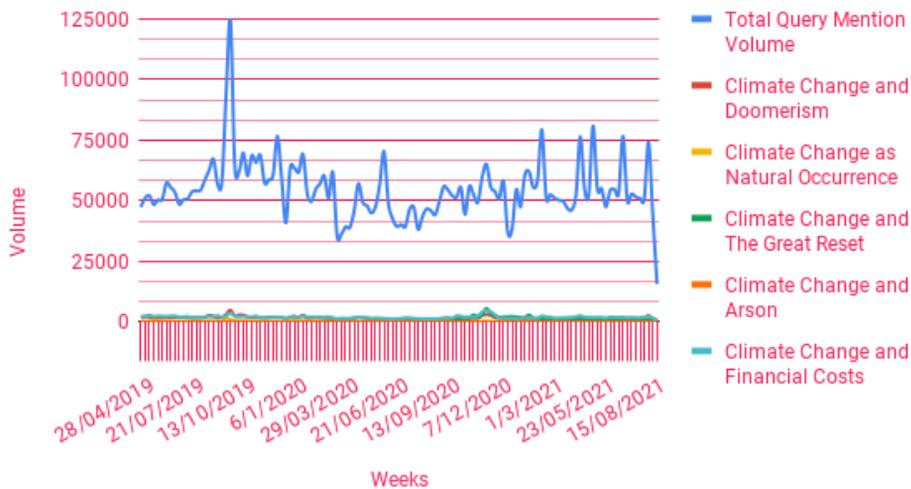
Despite data ingestion covering **6.67 million individual data points**, most of the narrative volumes topped out at totals of around 1,000 posts even at their peaks, and the narratives displaying the most consistency maintained average volumes of around 200 posts at their lowest. At the lower end, we found that some narratives we expected to be highly influential struggled to reach even 100 publications at their peaks.

Even the most popular narratives in our dataset maintained a relatively low average volume of around 2000 articles or posts per week. **This is not to say, however, that the impact of climate misinformation is itself low, or lacking in influence.** It does, however, suggest an interesting dynamic is at play in the climate change misinformation ecosystem.

This is perhaps most starkly illustrated by comparing the total narrative volumes of each identified citizen misinformation narrative with the total mention volume from our original overall dataset.

We designed our overall dataset to capture as much content as possible which could be plausibly related to climate misinformation. We would expect that dataset to contain, for instance, discussion about climate misinformation and rebuttals of misinformation narratives as well as content which supports climate misinformation narratives. When comparing the volume of each identified climate misinformation narrative with the mention volume of our full dataset (Graph 12), **it is striking that the average mention volume within the full dataset is around fifty times higher than the combined mention volumes of all of our identified narratives.**

Total Mentions vs. 5 Climate Narratives



Graph 12: Volume of total mentions in dataset compared to five climate misinformation narratives over time

Even though the narratives we identified were the most cohesive available in the dataset (according to both our AI pipeline and human analysts), news and social media content supporting those narratives only make up a relatively tiny proportion of available content about climate misinformation. **The simplest explanation for this remarkable gap is that there is orders of magnitude more discussion about climate misinformation than there is propagation of or support for climate misinformation.** Another possible explanation is that much climate misinformation does not form a recognisable, cohesive narrative.

In either case, **this could be some cause for optimism: our findings suggest that there is not a large online community systematically producing climate misinformation.** This is also borne out by the fact that all the significant peaks in narrative volume we observed appear to be easily explainable as a reaction to real-world events, such as President Trump's assertion that green energy is too expensive, or the 50th annual meeting of the World Economic Forum (WEF) named the Great Reset being misinterpreted by conspiracist communities to serve their wider objectives.

The fact that climate misinformation, where it does exist, is driven not by committed denialists (though they do exist), but by major global events **highlights the vital role to be played by communicators in mitigating these issues. We need to build trust in institutions, promoting initiatives only out of genuine commitment to change, as well as providing clarity about the crisis we face and how we can find a way out of it.**

The presence of organisations such as the IER and the CRC suggests another issue with climate communication and messaging. The methods used by these groups and others is akin to disingenuous political messaging during elections. While climate change is still predominantly framed as an industry and policy issue first, and an issue concerning the health of the planet second, exploitative tactics will continue to prosper in an effort to deliberately mislead at the expense of the environment.

Finally, we need to balance communicating the gravity of the crisis facing humanity, while discouraging people from falling prey to the doomerism narrative. Care must be taken, therefore, to deliver “bad news” within the context of what action can still be taken to change course, and to emphasise **that the time to act is now**.

Research limitations

There were some limitations of our research which makes further research necessary to confirm, add or contextualise our findings. One limitation of our research was that it was based on data ingestion focused on English language content, meaning that our research excluded climate misinformation narratives taking place in other languages. Another limitation was that our research captured content based on Boolean queries which were inherently text-based in nature. This meant that our research did not capture climate misinformation narratives occurring in audio-visual communication, unless these also included captions with relevant keywords.

Our research focused on citizen narratives in news and social media, and whilst we initially set out to investigate corporate greenwashing efforts as part of this research, our initial data collection suggested that corporate climate communications did not form significant narrative clusters within our dataset. From a business perspective, climate misinformation—manifesting as greenwashing—could present a risk for the dissemination of misinformation, as companies look to showcase their sustainability strategies and Environmental, Social and Corporate Governance (ESG) credentials.

A [recent survey](#) conducted by the PRCA and Opinium found that 6 in 10 PR professionals were concerned that their clients want to jump on a bandwagon talking about the climate crisis rather than acting, and 17 percent of PR professionals believe that their clients’ knowledge of climate change is “incorrect or misinformed.” As climate action becomes a more salient political, societal and business issue, we believe that it would be valuable to undertake a further research project which is specifically focused on data from corporate communications.



Section 5

Conclusions and recommendations

Advocating for honesty

Our research into climate misinformation narratives demonstrates many of the challenges, as well as some opportunities, for countering climate misinformation.

We believe there is great value in approaching countermeasure strategies from a multifaceted perspective, which leverage a variety of different messaging and communication techniques, to account for the complex and heterogeneous nature of climate change misinformation. At the highest level, we advocate for honesty and evidence-based approaches to defining, identifying, and communicating about climate change.

Below we have outlined some more specific recommendations for how citizens, governments, climate change activists and communicators can help to counter climate misinformation.

Responsible communication

- With corporations, governments and organisations around the world increasingly communicating about climate change, it is more important than ever that those communicating about climate change do so responsibly. We believe that a working understanding of climate change on its own is insufficient for communicators to do their jobs effectively, but that they also need to understand the broader information and misinformation ecosystem within which they are operating.

Countermeasure planning

- Ahead of international events like the COP26 climate summit, communicators should focus on scenario-planning for an increased volume in climate misinformation, and develop countermeasure strategies to respond to these. Countermeasure tactics can include everything from issuing takedown notices to social media platforms, to targeted messaging aimed at countering misinformation narratives, to deploying robust digital monitoring to identify and quickly react to online misinformation. Rapid action from social media companies in taking down climate misinformation will also be essential for success.

Intelligent listening

- Companies like Logically and others have developed threat intelligence platforms to help identify, analyse and counter online misinformation. Using artificial intelligence and open-source intelligence (OSINT) research can help to identify problematic content, actors and activity, and also identify which are the most appropriate countermeasures to address harmful content.

Message testing

- Our research revealed some opportunities for climate change campaigners and communicators to build more robust messaging and evidence-based talking points to counter climate certain misinformation narratives.

-
- Some of the climate change narratives identified in our research may be easier to counter than others; we believe that the doomerism narrative, for example, could be a good target for countermeasure interventions since this group is the least siloed of the studied narratives. Other narratives, such as the “Climate Change and Financial Costs” narrative, might be countered by evidence-based economic arguments demonstrating the economic benefits of new climate technologies and sectors. Developing countermeasure messaging and testing the efficacy of these against different climate misinformation narratives could be a good starting point.

Data sharing

- Increased transparency and secure data sharing between social media companies and the academic and research communities will help misinformation researchers continue to better study and understand this phenomenon.

Pre-bunking strategies

- One way to counter climate misinformation may, ironically, come from exposure to it. This was the conclusion of a study by Cambridge University researchers focused on COVID-19 misinformation.

- The Cambridge team developed a game, [Go Viral!](#), which exposed people to some of the tactics used by propagators of misinformation to help “inoculate” players against fake news about the pandemic. [Earlier research](#) on climate change pre-bunking tactics has shown this approach to be effective at building resistance against climate misinformation or disinformation. This form of intervention could be usefully rolled out in schools, in workplaces and to the general public at large through pre-bunking public awareness campaigns.

Media literacy

- Finally, educational programmes focused on helping social media users identify high-quality and low-quality information can help to increase user discernment and support people in better navigating our complex and, for now, untrustworthy communications environment.

Interdisciplinary interventions

- A key finding from our research was that climate change misinformation does not appear in a vacuum. With this in mind, we think that it is important for climate change misinformation interventions to also be tackled as part of broader efforts and interdisciplinary interventions to address other forms of misinformation and conspiracy theories, like anti-vaccine propaganda.

Contributors

The Logically team included Al Baker, Edie Miller, Devika Khandelwal, Polly Lambert, Joe Ondrak, and Emma Haselhurst; the APCO Worldwide team included Daniella Lebor, Rotem Hinkis, H  l  ne Legay, Cody Le Blanc and Sharon Segel.

About APCO Worldwide

[APCO Worldwide](#) is an advisory and advocacy communications consultancy helping leading public and private sector organizations be catalysts for progress by navigating the challenges of today, acting with agility, anticipating social risk and building organizational reputations, relationships and solutions to succeed. APCO is proudly an independent and majority women-owned business.

About Logically

Founded in 2017 by MIT and Cambridge alum Lyric Jain, Logically combines advanced AI with human expertise to help governments, businesses and the public identify and disarm harmful information being shared online. The company's mission is to reduce and eventually eliminate the harm caused by the spread of misinformation and disinformation. In 2021, Logically was [named](#) one of the world's most innovative artificial intelligence companies by Fast Company and awarded the Rising Star in Tech award at the [CogX Awards](#). The company has teams in the U.K., U.S. and India. For more information, please visit [Logically](#).

Logically.

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