

Destructive Discourses: The Digital Dissemination of Climate Misinformation and Disinformation

A Multi-Platform Investigation as part
of the NOTORIOUS Project

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Glossary

Alternative Media

Alternative Media usually positions itself as a counterpart to traditional and professional mass media, which they often derogatorily describe as “mainstream”. Using the definition formulated by Holt et. al.¹ alternative media are characterised by reporting anomalous subjects, persons and theories, and by their regular use of the opportunities for participation that the internet offers.² However, a media outlet does not need to self-identify as “alternative”; this designation may also be applied by consumers or third parties.³

Alternative Media can represent positions from a broad political spectrum. Although “alternative” cannot in every case be equated with right-wing populist/far-right internet media that disseminate disinformation, this type of media currently constitutes the most widespread form of alternative media in the German-speaking world.⁴

Various factors were used for operationalization as part of this study, including self-identification as “alternative”, “anti-mainstream”, or “uncensored” on the relevant website or account, as well as classification in the research, linked domains, further activities and accounts on platforms such as YouTube or Telegram. In contrast to Schwaiger⁵ however, the existence of a website was not made prerequisite.

Social media accounts that predominantly or to a large extent produce their own content were treated as potential alternative media. Accounts that do not disseminate their own posts, instead only posting third-party content, were not classified as alternative media. Individuals who regularly appear as authors in alternative media or as media activists were classified as alternative media.

Climate scepticism

Although this term is often used synonymously with climate denialism, scientists have developed a more differentiated understanding of content disseminated by climate sceptics. The common denominator between denialism and scepticism is the emphasis on doubt and uncertainty in relation to both climate science and climate protection.⁶ Common misconceptions involve both the nature of scientific “evidence” and the credibility of scientific institutions and the researchers themselves. Both can be reinforced by the way in which they are portrayed in the media.⁷ Climate scepticism can also

exploit a lack of understanding of how scientific work is carried out and how peer-reviewed research is conducted. Multi-stakeholder procedures can also be misinterpreted. Such climate-sceptical rhetoric is perhaps most evident in the alleged scandal surrounding the private correspondence of researchers at the University of East Anglia in 2009, commonly referred to as “Climategate”. This event was widely misunderstood as a manipulation of evidence to support a political agenda. Climate scepticism narratives reinforce the false beliefs that a) the evidence for climate change is inherently unreliable, full of “contradictory data” or lacks broad consensus (“epistemic scepticism”); and b) action against climate change is unnecessary or nothing can be done to mitigate its effects (“response scepticism”).⁸

Climate denialism

In contrast to other positions such as climate scepticism (see above), climate denialism refers to the open denial of both the phenomenon of climate change and its causes and effects. This includes claims that contradict the scientific consensus, e.g. that climate change is a hoax, that global temperatures are not rising, and that global warming is a natural process unrelated to anthropogenic (i.e. human-induced) greenhouse gas emissions.⁹

Cluster

A group of posts that are similar in terms of content and semantics.

Coding

The process of assigning the content of a text to specific categories or topics.

Community detection

The identification of groups within a network based on similarity of content.

Community detection infomap

An algorithm for identifying cluster structures in networks in order to find hierarchical groups with similar content.

Deductive/inductive coding

The classification of texts based on predefined categories (deductive) or on the basis of topics that emerge during the analysis (inductive).

Delayism

This category comprises discourses that *“accept the existence of climate change but justify inaction or inadequate efforts. In contemporary discussions on what actions should be taken, by whom and how fast, proponents of climate delay would argue for minimal action or action taken by others. They focus attention on the negative social effects of climate policies and raise doubt that mitigation is possible.”*¹⁰

Recognising human-induced climate change as part of the discourse contrasts with other familiar forms of climate policy denial, including climate denialism and climate scepticism. Lamb et. al. comprehensively described delayism discourses on the topic of climate in 2020. The vast majority of delayism narratives are therefore already known in research and can follow one of four thematic directions: Redirect responsibility (others should act first); push non-transformative solutions (no major changes necessary due to factors such as technical progress); “emphasise the downsides” (highlight the disadvantages of possible measures for ordinary citizens, etc.); and “surrender” (climate protection measures are pointless or too late). Since these narratives are linked to real human concerns and fears, Lamb et. al. only speak of delayism arguments when they are used to discredit climate protection measures or to describe the fight against global warming as an impossible task.¹¹

Discourse analysis

The analysis of linguistic structures and patterns to identify and understand narratives in social discussions.

The far right

According to the political scientist and right-wing extremism expert Cas Mudde, this term refers to groups and individuals whose political attitudes display at least three of the following five characteristics: Nationalism, racism, xenophobia, anti-democracy and advocacy of a strong state.¹² “The far right” is an umbrella term that encompasses both the “radical right” and “extreme right”. According to Mudde, both the radical right and the extreme right believe that inequalities between people are natural and positive, but the two hold different positions on democracy.¹³ While the radical right rejects certain aspects of liberal democracy (e.g. minority rights, independent institutions), it is not fundamentally opposed

to democracy, instead it favours a majority democracy under the leadership of the group with which it identifies. The extreme right, on the other hand, fundamentally rejects democracy as a form of government and favours authoritarian rule instead.¹⁴

The Great Reset

A conspiracy narrative that claims the COVID-19 pandemic was deliberately orchestrated to gain control of the global economy. The origin of this narrative was an initiative of the World Economic Forum (WEF) in 2020 to shape markets fairly, promote sustainable investments and technology for the benefit of society. This initiative was reinterpreted as a conspiracy by elites to establish a “new world order” under their control. As this narrative leaves plenty of room for interpretation, it is linked to various topics and debates,¹⁵ including climate change and environmental policymaking, e.g. in the context of the European Green New Deal, which is interpreted as proof of the establishment of a “green dictatorship”.¹⁶

Large language model (LLM)

A type of machine learning model designed to analyse texts and identify semantic patterns.

Misinformation and disinformation

ISD currently uses the following working definitions based on Claire Wardle’s definitions: Disinformation comprises “false, misleading or manipulated content that is presented as fact with the intention to deceive or harm”. Misinformation implies “false, misleading or manipulated content that is presented as fact, irrespective of any intention to deceive”.

The term “disinformation” poses a challenge in the context of current political and scientific discussions, particularly in terms of intentionality. For example, although the intention behind creating, sharing and forwarding messages on social media is central to the categorisation of disinformation, it is difficult to prove intention when analysing data.

Claire Wardle (2020) uses the term “information disorder”, which she identifies as comprising disinformation, misinformation and malinformation – whereby disinformation often turns into misinformation if it is not intentional. Misinformation and disinformation can include – with different intentions – misleading information,

decontextualisation, manipulated content, propaganda and false information.

Narrative

This report understands narratives as “morals drawn from stories” in accordance with the definition of the term developed for the NOTORIOUS project. Narratives accordingly address a moral dimension of storytelling. They are formed in human memory and expressed in the form of stories that comprise a “temporally, spatially and causally linked sequence of events”.¹⁷ According to a definition by Bolt and Haiden,¹⁸ the stories from which narratives are derived can be an account of real events or a complete fiction.

According to Bolt and Haiden, narratives have three core characteristics: They encourage understanding, reduce complexity and offer “conclusions or visions for an achievable or unachievable end state”.^{19,20}

Natural language model

A model that processes and analyses linguistic data in order to recognise meaning and context.

Natural language processing (NLP)

The processing of data encoded in natural language in order to identify and analyse disinformation narratives.

Network centrality

A key measurement for determining representative texts in clusters by their links within a network.

Personal attacks

This report understands personal attacks as the distraction from substantive debate by discrediting people or movements that support climate protection measures (variously portraying them as morally evil, naive or pathological).

QAnon

A widely circulated conspiracist narrative that claims that an elite group of child-trafficking paedophiles has ruled

the world for several decades and that President Trump has a secret plan to bring this group to justice.²¹

Ranking process

Sorting of clusters or texts according to specific measurements in order to emphasise the most relevant content.

Sampling

The selection of a representative sample of clusters or posts for more detailed analysis.

Sentence embeddings

Numerical vectors that encode the meaning of a sentence and measure similarities between texts.

Semantic similarity

A measure of similarity between the context of texts designed for clustering and recognising narratives.

Sentence-BERT

A multilingual language model for sentence embeddings that measures semantic similarities between sentences. BERT (bidirectional encoder representations from transformers) is a machine learning architecture similar to the well-known generative pretrained transformer (GPT).

Similarity network

A network that links texts based on similarity and supports the creation of groups.

Text corpus

A collection of texts or posts that is analysed in order to identify patterns and narratives.

Thematic cluster

A summary of thematically related posts for the purpose of identifying discourses and recurring narratives.

Vectorisation

The conversion of texts into numerical vectors that encode their meaning and structure, e.g. using sentence embeddings (see above).

1. Introduction

As recently as 2015, the existence of human-induced climate change seemed to be widely accepted as a scientific fact in Germany. According to a survey, around 92% of respondents in Germany believed this at the time.²² Another study from the same year categorised just ten percent of respondents as “doubters” in its typology of German views on climate change.²³ The researchers found no segment in Germany that completely denied the existence of climate change, which contrasts with other countries analysed.²⁴ Although supporters of various political currents disagreed on how to deal with the challenge, there was general consensus on the reality of human-induced global warming. Ten years before this study was published, climate scepticism and denialism were still fringe political positions in Germany.²⁵

In a 2023 survey conducted by Statista and YouGov, 25% of respondents in eastern Germany and 21% of respondents in western Germany said they did not believe in human-induced climate change.²⁶ Another 18% of respondents in eastern Germany and 14% in western Germany either provided no information or selected the option “don’t know”.²⁷

This development goes hand in hand with increasing hostility towards science. A representative study conducted by the KAPAZ project in 2024 indicated that 70% of respondents had observed an increase in hostility towards science. As well as the rejection of scientific findings, this hostility also includes active personal discrimination and belittling of researchers, hate speech and threats.²⁸ Personal attacks against female academics are often misogynistic.²⁹ This climate of discussion is also encouraged by political actors such as the far-right Alternative für Deutschland (AfD) party, whose associations in the German federal states of Saxony, Saxony-Anhalt and Thuringia have been categorised as having “a proven extremist agenda” by the respective federal state offices for the protection of the German constitution.³⁰

A 2021 ISD study found that the topics of climate and climate policy played a central role in the 2021 German election campaign. The AfD and other actors from the far-right spectrum in particular used this to their advantage by conjuring up enemy stereotypes, creating threat scenarios and stylising the entire climate debate as a

“culture war”.³¹ The study showed that the AfD was the only party investigated that questioned human-induced climate change and rejected climate protection measures. On average, the AfD’s climate-related posts were shared more often than any of its other content.³² They were also shared more often than the climate-related posts of any other party. This was an early indication of a change in public opinion.

What was an uncontroversial, widespread acceptance of the scientific facts of climate change has become a polarising, politicised issue in recent years, dividing society into hostile camps. As well as the increasing hostility towards science and the deliberate instrumentalization of the issue by political actors, this is attributable to the influence of the anti-lockdown movement as a political force, as the movement quickly combined its opposition to protective measures against COVID-19 with a rejection of environmental protection measures.³³

In Germany, anti-lockdown groups began discussing a supposedly imminent “climate lockdown” at an early stage.³⁴ AfD politicians used the term in political debate.³⁵ The discussion of the term by politicians from other parties also helped to turn talk of a “climate lockdown” into a recurring theme that was also taken up in disinformation ecosystems.

The numerous crises of the 2020s, which included Russia’s war against Ukraine and the COVID-19 pandemic, have had a hugely unsettling effect on people everywhere. The economic consequences of these crises are fuelling susceptibility to misinformation, disinformation and conspiracist narratives. In such a context, climate misinformation and disinformation narratives are particularly attractive if they combine a rejection of climate protection measures with financial relief, or if they also imply that climate protection measures have a fundamentally damaging effect on the economy.

Effective countering of climate misinformation and disinformation on online platforms requires a deeper understanding of their dissemination channels. It is for this reason that this report analyses the dissemination channels, key actors and narratives involved. Both quan-

titative and qualitative analyses were conducted for this purpose. The data basis for the report is 3.3 million public posts from X (known as “Twitter” during the survey period), Facebook, Telegram and Instagram, which were published between 2019 and 2023 and collected by the Leibniz Institute for Media Research | Hans Bredow Institute (HBI). The collected posts were then filtered to create a subgroup that underwent further quantitative and qualitative analysis using various indicators (see Methodology).

This study classifies anti-climate posts and discourses into four supercategories, which are used to structure both the quantitative and qualitative analyses. This involves differentiating between climate denialism, climate scepticism, delayism and personal attacks.

2. Main findings

Methodological findings:

Semantic similarity to misinformation and disinformation narratives and the presence of far-right actors are effective indicators for the presence of misinformation and disinformation narratives in post clusters:

- The semantic similarity to known misinformation and disinformation narratives is an effective indicator for the identification of climate misinformation and disinformation in the data set. This similarity is primarily used to identify known narratives.
- The presence of far-right actors in post clusters is also an effective indicator of the presence of climate-related misinformation and disinformation. This indicates that far-right actors play an important role in the dissemination of climate misinformation and disinformation and that they frequently interact with such content.

Findings on cross-platform dissemination:

Twitter/X and Telegram are important platforms for climate-related misinformation and disinformation, while Instagram is significantly under-represented:

- In the data set of 1,484 posts on Twitter/X, Facebook, Telegram and Instagram analysed, Twitter/X is responsible for both the largest share of climate posts (47.7%) and the largest share of suspicious posts (posts containing climate misinformation or disinformation: 43.8%). Telegram (32.8% of posts and 35.5% of suspicious posts) also played a key role.
- Instagram had significantly less relevance for climate discussions and was responsible for just 1.28% of the total posts.

Party-political accounts and accounts assigned to the “Other multipliers” category are responsible for a large proportion of the posts categorised as misinformation or disinformation:

- The majority of posts classified as suspicious cases of climate misinformation and disinformation were disseminated by private individuals, pseudonymous accounts and accounts that primarily share content from other accounts.

- In the clusters analysed, politicians’ accounts disseminated a high proportion of posts classified as suspicious cases of climate misinformation or disinformation. This indicates that climate change has become a polarising party-political issue.
- The Alternative für Deutschland (AfD) party is significantly overrepresented among party-political accounts.

Within the data collection period (2019-2023), 2022 witnessed a sharp increase in climate misinformation and disinformation on three of the four platforms analysed:

- The number of suspicious posts on Twitter/X, Telegram and Facebook increased significantly in 2022. The multiple political crises following Russia’s invasion of Ukraine provide possible reasons for this.

Both traditional and alternative media are used as sources:

- Similar sources were used in posts for climate denialism, climate scepticism, delayism and personal attacks. These include alternative right-wing media such as Tichys Einblick and Junge Freiheit; links to posts on social media platforms such as Twitter, Telegram and YouTube; and the website of the Konservativer Aufbruch, a group within the Bavarian CSU party. The daily newspaper *Die Welt* also appears in the top 10 domains in all four narrative categories.
- This indicates an ecosystem for spreading climate misinformation and disinformation that consists primarily of accounts that reference one another on the aforementioned platforms (those that use alternative media content). Occasional reference is also made to content from the traditional media, e.g. *Die Welt*.

Findings regarding narrative tactics:

The content is dominated by personal attacks and delayism:

- 40.7% of the identified narratives were personal attacks, while 21.9% adopted delayism narratives to weaken climate protection measures. Climate denialism and climate scepticism played a lesser role with 10.9% and 15.1% respectively.

-
- A large number of enemy narratives were used against climate activists and political opponents. These included personal attacks such as insinuations of terrorism; malicious, ideology-driven or pathological behaviour; and even complex conspiracist narratives. These narratives serve to delegitimise and shift the discourses from a serious political discussion to arguments that attempt to defame.
 - The delayism narratives primarily contained narratives that delegitimised climate protection and climate protection measures. These included narratives concerning the supposedly negative economic consequences of climate protection measures for Germany and narratives concerning the supposed destruction of the environment through climate protection.

Discussions about climate change and climate protection act as a starting point for far-reaching criticism of the entire system by the far right:

- Disinformation and misinformation narratives in the data set often combined the topics of climate activism, climate protection and climate policy with other topics used for far-right mobilisation, e.g. migration, Russia's invasion of Ukraine and conspiracists narratives. The rejection of climate policy in these posts appears to be part of a broader ideological context.
- Actors employed a combination of various – sometimes pseudo-scientific – disinformation and misinformation narratives to create a complex counter-narrative to the scientific and political consensus on human-induced climate change.

3. Methodology

3.1 Quantitative analysis methods

Analysing the dissemination of disinformation and misinformation via various social media platforms presents a conceptual and technical challenge. This study develops an approach that takes into account the connections and interactions between the various platforms in order to identify and analyse climate disinformation and misinformation narratives. The aim is to examine the text corpus using semantic similarity to identify the thematic clusters in which such narratives are concentrated, and to understand the character of these discussions.

Platform	No. of posts
Telegram	157,450
Instagram	218,079
Facebook	1,194,370
Twitter	1,745,057
Total	3,314,956

Table 1: Number of posts collected per platform

The analysis process began by collecting posts concerning the topic of climate on the platforms Twitter/X, Facebook, Telegram and Instagram. A total of 3.3. million public posts posted in the German language between 2019 and 2023 were collected. These posts were identified using a targeted keyword search. The keywords were selected to cover discussions on climate change and related topics as comprehensively as possible (for more details on data collection, see Appendix I: Search words). Once the climate posts had been identified, they were grouped into clusters using modern natural language processing (NLP) techniques. This classification was based on a combination of different methods.

First, the texts were pre-processed using the Sentence-BERT method,³⁶ which in this case employed a

pre-trained multilingual language model.³⁷ Semantic sentence embeddings (numerical representations of texts that made it possible to measure their semantic similarity) were created.

A similarity network was created in order to group texts: The texts were divided into paragraphs and the similarity to other paragraphs published within a defined time window before the respective paragraph was determined.* Network connections between two posts were then created if the similarity of the paragraphs contained within the posts exceeded an experimentally validated minimum value.

The infomap community detection algorithm³⁸ was then used to identify hierarchical clusters within the network. This made it possible to divide larger topics into smaller, coherent groups, which made it possible to understand the structure of the discourse on different levels.

Finally, the network centralities were calculated to highlight the most representative texts within each cluster. These centralities measure the overall similarity of a text to the rest of the cluster by using information such as the number of connections or proximity to other texts. This made it possible to identify particularly relevant texts that best represented the content of a cluster.

Four indicators were used to identify clusters that potentially contained disinformation and misinformation narratives. The first step was to analyse the semantic similarity between all the posts collected and known climate disinformation and misinformation claims.

- Clustering based on the ratio of suspicious cases to the total size of the cluster and creation of a descending ranking according to this ratio (claim ratio).
- Clustering based on the presence of far-right actors** within the clusters, as this group was empirically conspicuous as disseminators of disinforma-

* This takes into account social media’s tendency to amplify trending topics. Comparing all of the posts with one another other would have also limited the technical scalability of the method. However, topics that were interrupted over a long period or occurred intermittently were recorded as separate clusters.

** Seed lists (lists of actors whose posts were treated as starting points for the study), served as the basis for the selection of relevant accounts. These lists were made up of actors who had been analysed in previous ISD projects on the German far-right online milieu.

tion and misinformation.³⁹ As with the first indicator described above, the ratio of the number of posts by far-right actors to the cluster size was used (rex ratio).

- Clustering based the use of the Telegram platform within the clusters, as Telegram is often used for the dissemination of disinformation or misinformation (Telegram ratio).
- An additional, randomly selected sample of clusters was introduced, to act as a control group (Rank).

For each of these indicators, the most central clusters were selected within the large data set, whereby either the first ten clusters (or the first nine if a cluster was already covered by another factor) were taken into account. **This resulted in a total of 38 clusters with 1,484 posts. These were then used for further analysis.**

Once the central clusters were identified, they were manually reviewed by an analyst. Each analyst was assigned a certain number of clusters. These clusters were analysed to determine the extent to which the posts contained climate disinformation and misinformation narratives. The posts were divided into three categories: “suspicious”, “not suspicious” and “ambiguous”. **Posts were categorised as “suspicious” if the analyst assessed them as highly likely to contain climate denialism, climate scepticism, delayism, personal attacks** (see Table 1) **or any other form of climate misinformation and disinformation.** Suspicious cases were characterised by dubious sources, an aggressive tone and personal attacks on actors as well as unclear or speculative statements and content that fluctuated between conspiracist narratives and information that was difficult to verify. **Of the total of 1,484 posts analysed, 552 were classified as suspicious** and 817 as not suspicious. 115 posts could not be definitively assigned to any one category.

Once this classification had taken place, the posts classified as suspicious underwent further analysis in order to determine the exact nature of the disinformation and misinformation. This additional coding made it possible to assign the posts to specific categories of climate disinformation and misinformation derived from the literature and to assess whether they were suspicious cases.

Category	Description
Climate denialism	The denial of human-induced climate change and its causes.
Climate scepticism	The fuelling doubts and uncertainty about climate science and possible measures.
Delayism	The recognition of climate change but advocacy of minimal measures.
Personal attacks	The attacking and discrediting of people or movements that support climate protection.
Other	Other narratives that could not be definitively assigned to one of the four categories above, e.g. conspiracist narratives.

Table 2: Supercategories for climate misinformation and disinformation used in the report. Detailed explanations of the categories can be found in the glossary.

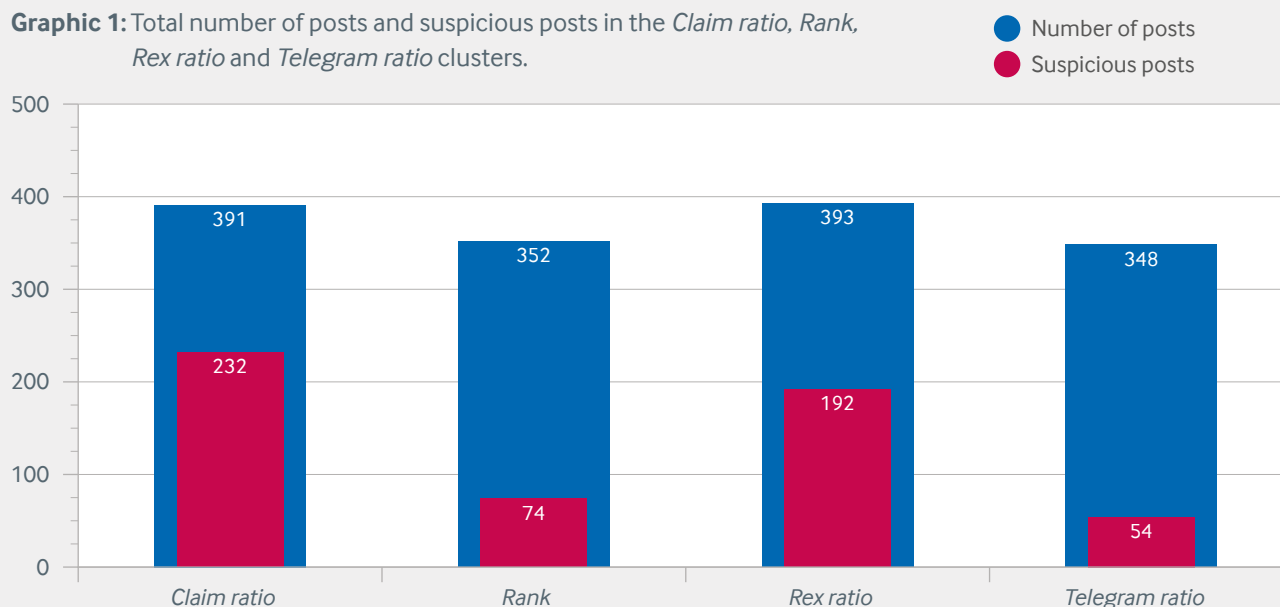
Effectiveness of different methods for the automated identification of climate disinformation

The individual factors for identifying climate disinformation and misinformation differ greatly in terms of effectiveness. Graphic 1 shows that the ratio of semantic similarity to known disinformation and misinformation claims (claim ratio) helped to identify most climate disinformation and misinformation narratives (232 suspicious posts). This is understandable, as posts with high semantic similarity to known disinformation and misinformation narratives are also very likely to contain misinformation.

However, the problem with this type of measurement is that the claims discovered are primarily the disinformation and misinformation claims that are already known and new, previously unknown narratives may be overlooked.

It was therefore important to also consider the effectiveness of other detection factors. 192 suspicious posts were identified in the sample of clusters investigated in which far-right actors had a significant presence as the source of the post. Even if it is not necessarily the case that

Graphic 1: Total number of posts and suspicious posts in the *Claim ratio*, *Rank*, *Rex ratio* and *Telegram ratio* clusters.



these actors wrote the individual posts and the accounts were used only to identify the relevant clusters, it could still indicate that these actors play a significant role in the dissemination of climate disinformation and misinformation or at least have above-average levels of interaction with such content. This factor could therefore be important for recognising new narratives.

The analysis could not confirm the assumption that a high proportion of Telegram posts within a cluster also increases the proportion of “suspicious posts”. While Telegram generally occupies a prominent position for the dissemination of extremist content,⁴⁰ the other platforms analysed appear to be used just as much for the purpose of disseminating false and misleading information on climate change. Measuring the extent to which Telegram was represented within a cluster only helped to identify 54 suspicious posts. Even a random selection of posts (Rank) was more successful in this context (74 suspicious posts). The lower level of suspicious content in the Telegram clusters analysed can also be explained by the fact that some of the clusters in the sample analysed consisted exclusively of advertising content or posts in foreign languages. These were not coded.

3.2 Qualitative analysis methods

Qualitative research methods were also used to analyse the posts in the data set in order to identify climate disinformation and misinformation narratives. Various methods of inductive coding were used to extract these from the messages analysed. Samples from clusters in the Rex Ratio and Claim Ratio categories were inductively coded to provide a basis for the analysis.

The clusters were selected on the basis of the high content of suspicious posts identified during an evaluation of the clusters. The qualitative analysis was based on those posts that were classified as “suspicious” during the evaluation of the clusters (see Quantitative analysis methods) and which therefore constituted suspicious cases in the categories of Climate Denialism, Climate Scepticism, Delayism, Personal Attacks or Other, a category that included narratives containing specific conspiracy narratives. As the rate of suspicious posts in the aforementioned Telegram Ratio and Rank cluster categories was comparatively low, the samples from these clusters were not included in the analysis for reasons of research economy. This means that 19 of the 38 clusters included in the quantitative analysis were analysed qualitatively in

more detail. Focussing on those clusters with a relatively high number of suspicious posts made it possible to ensure a broad database for the analysis of disinformation and misinformation narratives.

This study cannot conclusively clarify the reason for the lower rate of suspicious cases in the clusters identified by the Telegram ratio. One possible explanation is that climate disinformation and misinformation is generally shared on different platforms and that – unlike explicitly extremist content – it was not disseminated more widely on Telegram during the study period. It has been found in various studies that large platforms appear to regulate climate-related content less than hate speech or other types of disinformation and misinformation.⁴¹ One result of this could be that Telegram is not used as an alternative platform for such disinformation and misinformation. Another reason for the comparatively low rate of suspicious cases in the clusters identified by the Telegram ratio could be a statistical bias caused by post clusters primarily containing advertising messages about one or more products. As advertising clusters do not contain suspicious cases of disinformation or misinformation, such clusters occupy spaces within the sample that might be otherwise be taken by suspicious cases. Clusters in languages other than German, which were not relevant for analysing the climate discourse in Germany, could also have led to the low number of suspicious cases.

After deductive coding according to the categories mentioned in the evaluation, the data set was inductively coded. The researchers used *in vivo** and other forms of in-

ductive coding to analyse which specific narratives were contained in the posts previously coded as “suspicious”. The codes were entered in a table next to the posts. If a post contained several narratives, several codes were recorded and described in terms of their themes and narratives in analytical memos. The researchers then used these analytical memos and the coding of the individual posts to identify the central narratives in the data set. The individual narratives were described in terms of their content, different variants and functions. They were then categorised according to whether they were narratives of climate denialism, climate scepticism, delayism or personal attacks. The dissemination of the narratives and their relationship to other narratives in the various clusters was also analysed. The connections between individual narratives and specific categories of actors were discussed wherever relevant.

When coding the posts with regard to disinformation and misinformation, no pre-filtering according to a post’s position on climate change (whether the claims made denied or questioned human-induced climate change or whether they were false information spread by climate protection activists, for example) was carried out. However, the narratives identified in the clusters as disinformation and misinformation can almost exclusively be attributed to people who are opposed to climate protection measures. One of the rare counterexamples is an attack narrative that accuses the media of lobbying for the wood heating industry in a discussion about wood heating, suggesting that the media’s reports on the subject are uncritical renderings of the industry’s position.

* In qualitative social science research approaches, especially in grounded theory methodology, from which the term is borrowed, *in vivo* codes refer to the use of a term from the data set as a code. For example, a conspicuous term used by an interviewee is itself used as a code for categorised the instance or similar instances.

4. Quantitative analysis

4.1 Distribution of climate disinformation and misinformation by platform

Even though posts on climate change were published on all platforms in the period observed (see Graphic 2), the platforms differ in the proportion of posts on climate change and the proportion of suspicious posts they contain. **On Telegram and Facebook in particular, suspicious posts were overrepresented in relation to the total number of posts.**

Twitter/X dominated both the total number of posts and the number of suspicious posts, with 47.7% of all posts and 43.8% of suspicious posts.

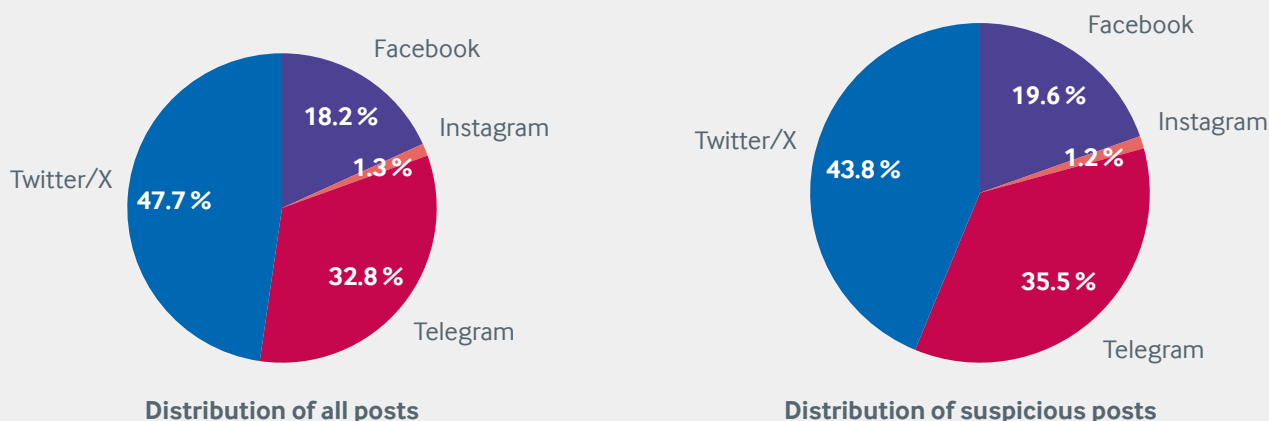
Telegram was the second largest platform in the analysis, both in terms of the proportion of posts in general and in terms of the proportion of suspicious posts. Telegram accounted for 32.8% of total posts, while the proportion of suspicious posts was 35.5%. This could indicate that Telegram is more susceptible to the spread of disinformation and misinformation narratives, even if this tendency is minimal. Facebook indicated a similar pattern, albeit with a lower overall share. Facebook is responsible for 18.2% of the total number of posts and 19.6% of suspicious posts, which indicates a slight over-representation of suspicious content on this platform.

With just 1.3% of total posts, **Instagram had the lowest number of detected posts related to the climate.**

The year-by-year comparison (2019-2023) (see Graphic 3) also revealed significant differences between the platforms. However, it should be noted that the larger number of posts recorded on Twitter/X compared to the other platforms is partly due to the way the platform works and the way in which the data was collected. Unlike Instagram, Twitter/X is a text-orientated medium, which leads to a high density of posts and intensive exchanges. Tweets that were replies to posts from third parties were also recorded. Such responses were not recorded on Facebook, Instagram or Telegram. In the case of Facebook, however, only public posts from pages, verified individuals and posts in public groups were taken into account. The data access tools do not allow the recording of non-public posts by people who only reach their personal network. No Instagram stories were recorded.

These methodological differences could have influenced the distribution of posts on the various platforms and should be taken into account when interpreting the results.

Graphic 2: Distribution of posts on climate change and the suspicious posts they contain, by platform (Twitter/X, Instagram, Facebook, Telegram).



4.2 Volume over time: peak values for disinformation and misinformation posts per platform

A closer look at the development of suspicious posts over time reveals that their distribution across the various platforms (Facebook, Instagram, Telegram, Twitter/X) was not constant in the period from 2019 to 2023. Graphic 3 illustrates suspicious posting activity on these platforms over the years.

Instagram recorded the lowest number of suspicious posts with just a little activity over the entire observation period. It also appears to have played a subordinate role in the dissemination of suspicious content during the investigation period.

Twitter/X, on the other hand, consistently recorded a high number of suspicious posts, especially in 2019 and 2020. After a decline in 2021, the number of suspicious posts again rose significantly in 2022, indicating a renewed increase in activity. Given that Facebook and Telegram also show a spike in misinformation and disinformation posts in 2022, it is unclear to what extent the development at Twitter/X is due to Elon Musk's assumption of ownership.⁴²

The graphic shows an increasing number of suspicious posts on Telegram from 2020 onwards. This supports existing investigations into Telegram, which show that the platform has become a pillar of the far-right online milieu. This development was particularly visible during the COVID-19 pandemic.⁴³

Like Twitter/X and Telegram, a conspicuous spike in climate misinformation and disinformation posts can be seen for Facebook in 2022. This spike, which occurred on three of the four platforms examined, is likely to be due to the Russian invasion of Ukraine on 24 February 2022. This provided the context for polarised political discussions in Germany concerning defence spending, supplying arms, admitting refugees from Ukraine and sanctions against Russia.⁴⁴

The war in Ukraine also led to a supply crisis in the energy sector and massive inflation. Actors on the far-right spectrum in particular used this to politically mobilise and instrumentalise uncertainty among the population for their own ends.⁴⁵ The climate crisis was also an important topic of debate in 2022. This was partly due to record temperatures in the summer of 2022, campaigns by climate activists from the Letzte Generation group and debates within the German SPD/FDP/Green coalition government on rates for the German CO₂ emissions tax.⁴⁶

4.3 Frequency of higher-level disinformation and misinformation narratives

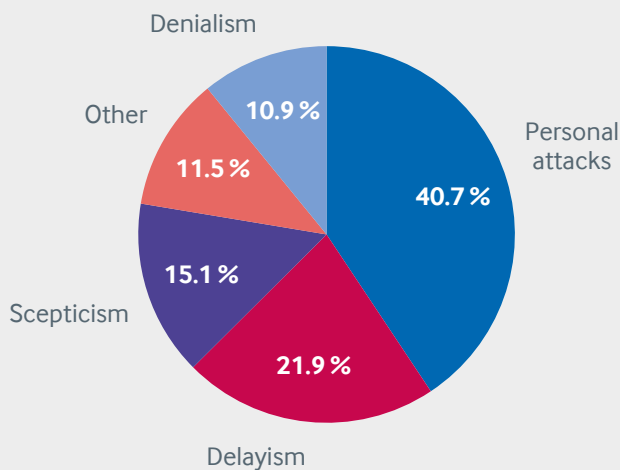
Aside from the development of platform use over time, it is also important to take a closer look at the disinformation and misinformation narratives identified. Graphic 4 clearly shows that the majority of the disinformation and misinformation narratives identified are personal attacks and delayism.

Personal attacks (described in this report as the discrediting of individuals or movements that support climate

Graphic 3: Suspicious posting activity on various platforms (Facebook, Instagram, Telegram, Twitter/X), 2019-2023.

	Facebook	Instagram	Telegram	Twitter/X
2019	19	1	5	44
2020	21	2	26	45
2021	7	1	25	22
2022	50	2	104	78
2023	5	0	25	39

Graphic 4: Distribution of disinformation and misinformation narratives by sub-category



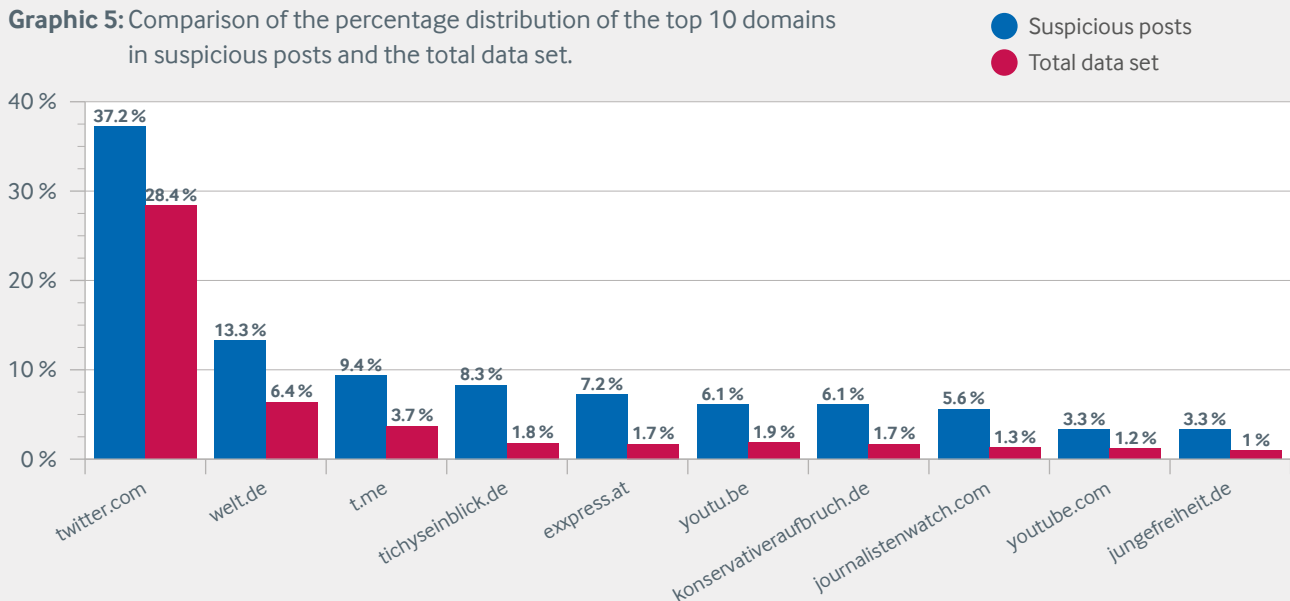
protection measures by portraying them as morally questionable, naïve or pathological) were predominant, with 40.7% of posts. This was followed by delayism, with 21.9%. Scepticism accounted for 15.1% of posts, while denialism played a subordinate role with 10.9%. The category of Other (topics that could not be clearly assigned to any category) accounted for 11.5%.

The results suggest that climate change-critical discourses have evolved away from direct denial of human-induced climate change and towards more subtle strategies such as delayism and personal attacks. This could be attributable to a change in strategy by climate change-critical actors: delayism allows people to position themselves against climate protection (and any financial or other burdens that can be potentially associated with climate protection) without directly opposing the scientific consensus on human-induced climate change.⁴⁷ Employing personal attacks to question the credibility and integrity of climate activists and scientists sows further doubt and distracts from the necessity of a substantive discussion on climate change and climate protection.⁴⁸

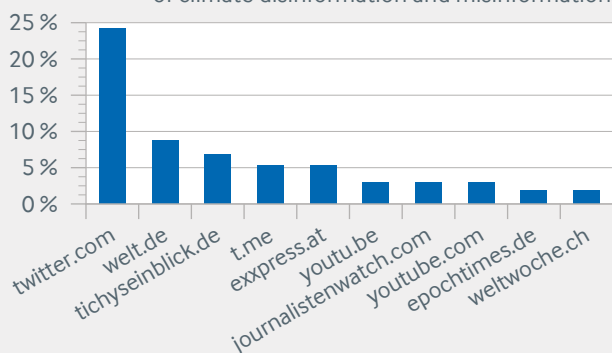
4.4 Linked domains in misinformation and disinformation posts

Certain domains were repeatedly used to support the misinformation and disinformation narratives. Graphic 5 compares the top 10 domains identified in suspicious posts and their share within the data set as a whole. The graphic illustrates that platforms and websites such as twitter.com, welt.de, t.me (Telegram) and tichyseinblick.de tended to appear more frequently in suspicious posts than in the total data set. These platforms and websites

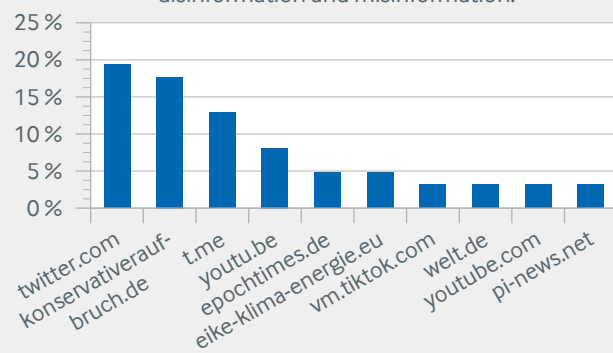
Graphic 5: Comparison of the percentage distribution of the top 10 domains in suspicious posts and the total data set.



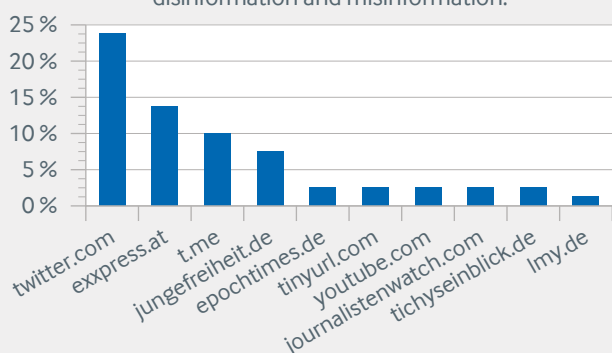
Graphic 5.1: Percentage distribution of the top 10 domains in the category *Personal attacks* of climate disinformation and misinformation.



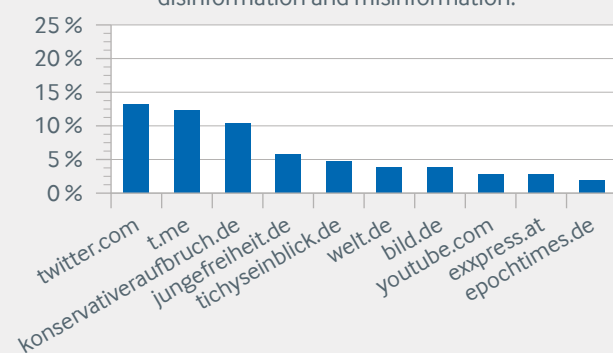
Graphic 5.2: Percentage distribution of the top 10 domains in the category *Denialism* of climate disinformation and misinformation.



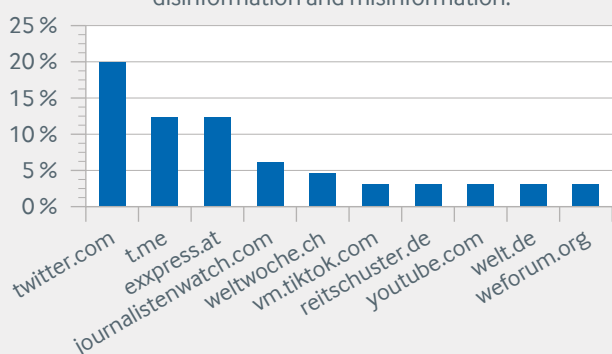
Graphic 5.3: Percentage distribution of the top 10 domains in the category *Scepticism* of climate disinformation and misinformation.



Graphic 5.4: Percentage distribution of the top 10 domains in the category *Delayism* of climate disinformation and misinformation.



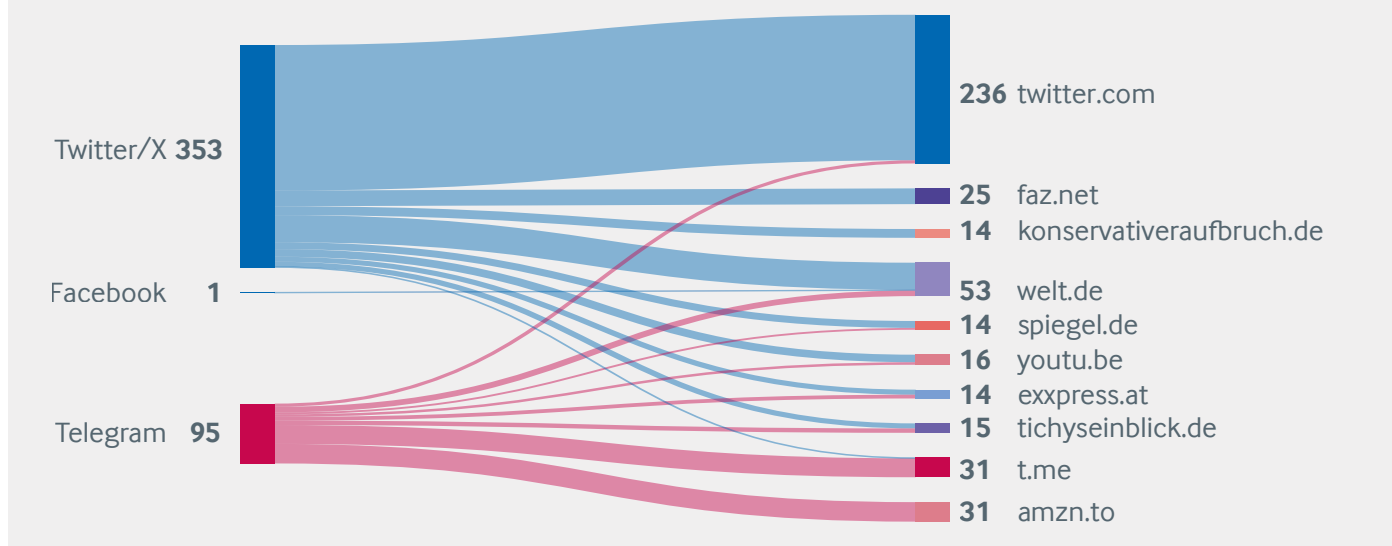
Graphic 5.5: Percentage distribution of the top 10 domains in the category *Other* of climate disinformation and misinformation.



were referred to more frequently than others in the context of climate disinformation and misinformation narratives.

If the top 10 domains linked within posts that contained suspicious content are sorted according to the five categories (see Graphics 5.1 - 5.5), it is clear that twitter.com and t.me are used as sources for climate disinformation and misinformation narratives with particular frequency, irrespective of category. Under Personal Attacks, twitter.com is the most frequently linked site, with 25 citings (13.7%), while t.me appears 13 times (12.6%) under Delayism. With 8 citings (14.6%), t.me is also strongly represented under Denialism.

Graphic 6: Domain flows for platforms for the dissemination of climate disinformation and misinformation.



There was also no significant difference in the sources of information used within the various categories. The source [exxpress.at](#) is used both by posts that fall under Scepticism (11 citings [16.2%]) and Other (8 citings [14.3%]). [Jungefreiheit.de](#) was frequently used as a source in two categories: Scepticism (6 citings [8.82%]) and Delayism (6 citings [5.8%]).

The site [konservativeraufbruch.de](#) frequently appeared as a source under both Denialism (11 citings [20.0%]) and Delayism (11 citings [10.7%]). This is likely due to the fact that several posts refer to a statement on climate policy published by this CSU group in 2020.

The sources [welt.de](#) (18 citings [9.8%]) and [tichyseinblick.de](#) (14 times [7.7%]) seem to be used with particular frequency under Personal Attacks. Youtube.com is frequently found under Denialism (5 citings [9.1%]), while [journalistenwatch.com](#) is cited 4 times (7.1%) under Other.

This distribution shows that certain sources regularly appear under several categories of climate disinformation and misinformation. This in turn indicates that these domains are repeatedly used for dissemination.

A look at the domain flow for the platforms (see Graphic 6) shows that actors who disseminate climate disinformation and misinformation narratives use various external sources to support their content. Graphic 6 illustrates that many Twitter/X users in particular used internal links within the platform itself (231 redirects from Twitter/X to [twitter.com](#)).

Other frequently used external sources on Twitter/X include for instance [welt.de](#) (43 redirects), [faz.net](#) (25 redirects) and [konservativeraufbruch.de](#) (14 redirects). Telegram users use these domains less frequently; instead they often link to [amzn.to](#) (31 redirects), [t.me](#) (30 redirects), [youtube.com](#) (9 redirects) and [welt.de](#) (9 redirects). These external links play a central role in the dissemination of climate disinformation and misinformation narratives.

4.5 An analysis of accounts that spread climate misinformation and disinformation

In order to investigate which accounts spread climate misinformation and disinformation, the posts identified as suspicious within the clusters investigated were classified and assigned to actor categories based on the person or group recognised as being behind the account and its published content.

Posts under the Other Multipliers category (58.7%) account for the majority of suspicious cases of climate misinformation and disinformation. A relatively high proportion of posts under the Politics and Alternative Media actor categories were identified as suspicious. Accounts under Journalism/Media, NGO/Activism and Business only disseminate misinformation and disinformation narratives in individual cases within the sample clusters (see Graphic 7).

Other Multipliers

A number of smaller accounts fell under Other Multipliers, which was the dominant category. These accounts operated under real names and pseudonyms. They include accounts that – based on posting behaviour and content – are likely to belong to private individuals. They also included accounts with thousands or tens of thou-

sands of followers that – despite having a thematic focus – primarily forward or repost content from third parties. Any other account that could not be clearly assigned to one of the other categories above (see Table 2) was also assigned to Other Multipliers.

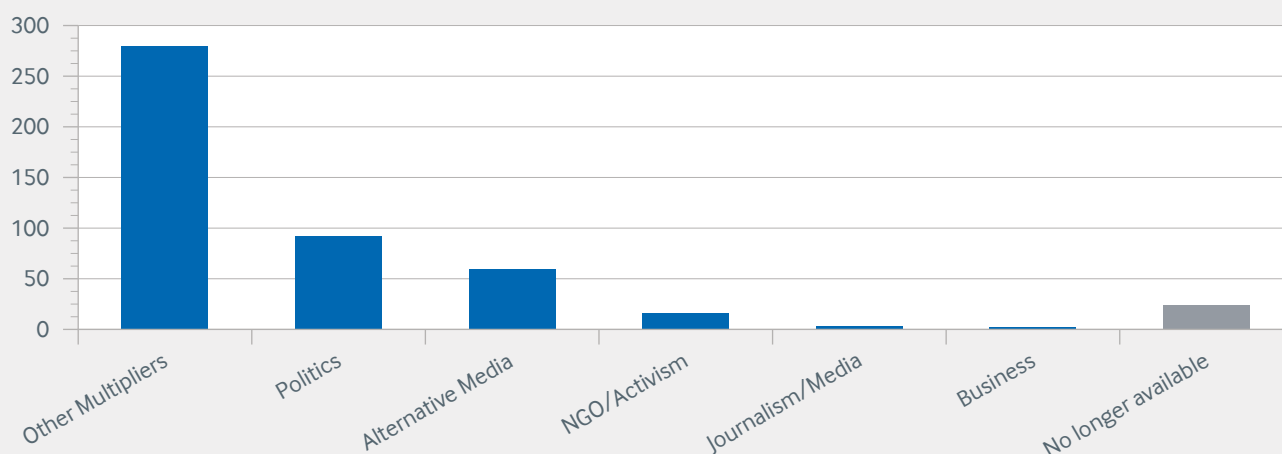
Actors classified as Other Multipliers mainly posted on Twitter and Telegram (see Graphic 8). One reason for this is the heavy presence of repost channels on Telegram that act as influencers and dedicate themselves to a spectrum that ranges from criticism of vaccination and rejection of climate protection to open right-wing extremism, conspiracist narratives, esotericism and belief in miracles. The high proportion of posts categorised as Other Multipliers on Twitter/X could be due to the data collection method and platform structure: unlike other platforms, both individual posts and replies to posts by other accounts were recorded for Twitter/X.

Actor category	Description
Politics	Officials and representatives of political parties, party accounts and representatives of state bodies and authorities. Party affiliation was also recorded.
NGO/activism	Traditional non-governmental organisations (e.g. environmental protection, trade unions), groups and individuals committed to a clear cause and recognisably active through more than one thematic online presence (e.g. the Querdenker movement, which opposed Germany's Covid restrictions).
Journalism/media	Accounts of media companies, editorial offices and journalists, primarily focusing on news or general information. Satirical and fictional formats and their representatives were assigned to the Culture category.
Cultural	Musicians, actors, writers, comedians, satirists, etc.
Alternative Media	Alternative Media usually positions itself as a counterpart to traditional and professional mass media, which they often derogatorily describe as "mainstream". A detailed explanation can be found in the glossary.
Business	Official profiles of companies, entrepreneurs and business associations.
Other Multipliers	Any other account that could not be clearly assigned. This primarily includes private individuals and pseudonymous accounts that include no further reference to the operators. However, it also includes accounts that although dedicated to the mass reposting/ dissemination of links, images and text excerpts do not fulfil the requirements of the Alternative Media category. This is due to their lack of independent content, even though they sometimes have a higher number of followers than actors in the Alternative Media category.

Table 3: Classification of actor categories for accounts that spread climate misinformation and disinformation

Graphic 7: Posts classified as suspicious by account category (see table 2).

“Post no longer available” includes posts removed from the platform (possibly due to deletion by the user or platform) between the initial analysis of the data and the actor analysis.



Other Multipliers dominated in all four methods of cluster selection (see Graphic 10). This finding suggests that misinformation and disinformation on the topic of climate are actively posted by private individuals and accounts to which ownership is difficult to attribute, who primarily act as multipliers of other people’s statements and content. Such content is thus not exclusively posted by prominent accounts belonging to the categories of Politics or Alternative Media. It is not yet possible to draw a conclusion as to the potential reach of such actors on the basis of the present evaluation. However,

they are suitable for further research. It would also be a logical progression to attempt to differentiate between accounts within the Other Multipliers category based on content or possibly formal criteria (e.g. number of followers).

Politics

The high proportion of accounts categorised as belonging to politicians or parties was in accordance with the evaluation that the topics of climate change and climate protection between 2019 and 2023 (within the data

Graphic 8: Percentage of total posts categorised as suspicious by type of account and platform.

	Facebook	Instagram	Telegram	Twitter/X
No longer available	1.3%	0%	0.6%	3.1%
Business	0.4%	0%	0%	0%
Journalism/Media	0%	0%	0%	0.6%
NGO/Activism	0.6%	0%	1.9%	0.8%
Politics	13.4%	1%	2.5%	2.3%
Alternative media	1%	0%	8.8%	2.7%
Other Multipliers	9.2%	0.2%	16.8%	32.5%

collection period) in party-political discourse, including within the context of the 2021 German election campaign.⁴⁹ It also suggests that the dissemination of climate misinformation and disinformation on social media platforms was employed as a strategic means of mobilisation. This reveals that those driving the cross-platform dissemination of false and misleading narratives on such platforms are politicians and political parties as well as Alternative Media (see below).

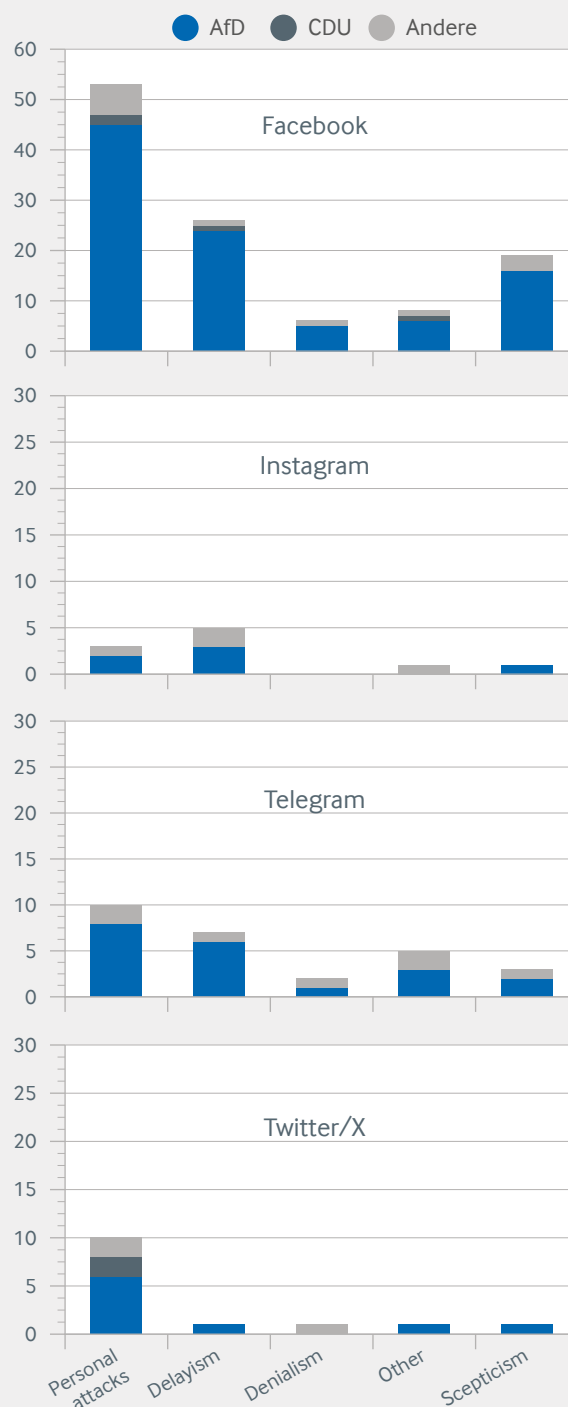
The majority of political accounts that spread climate misinformation and disinformation can be attributed to the Alternative für Deutschland (AfD). In absolute numbers, their posts most frequently contain personal attacks, followed by delayism and scepticism (see Graphic 9).

AfD politicians were particularly overrepresented in terms of Facebook accounts. This corresponds with earlier observations on the success of the AfD on this platform. Facebook played a central role for the party during the 2021 German election campaign.⁵⁰

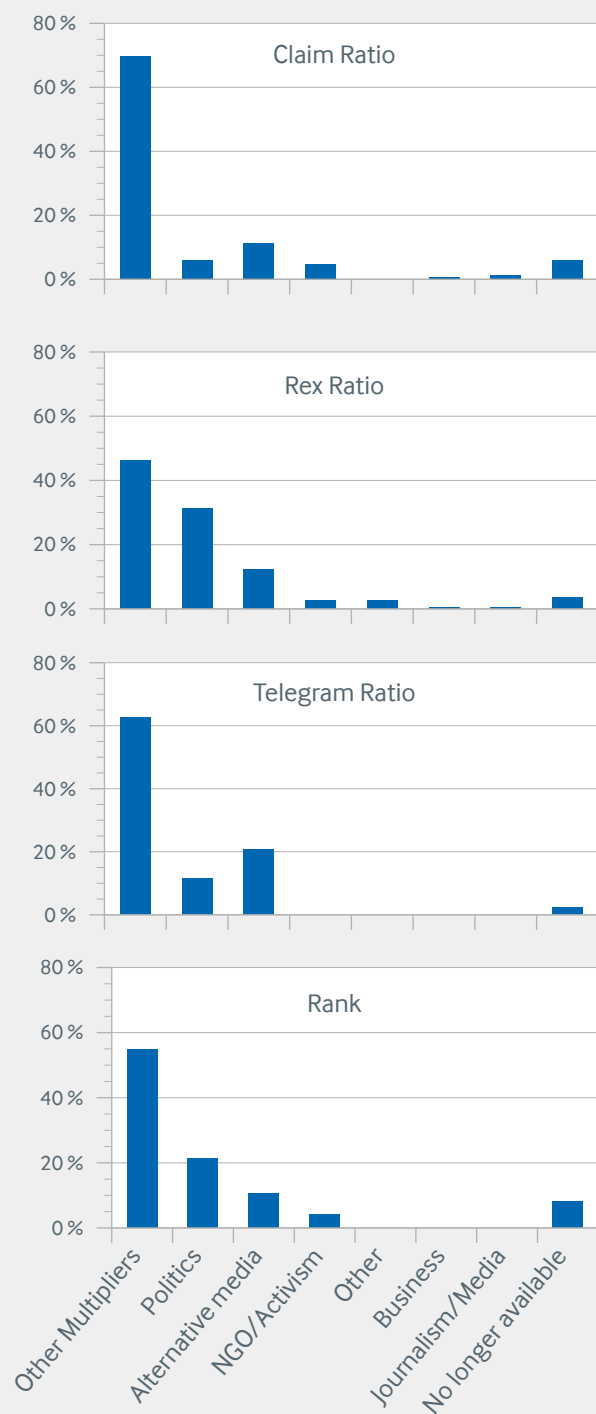
It is clear that the importance of TikTok and Instagram for AfD politicians and actors from the far-right spectrum is increasing because of the increased popularity of these platforms.⁵¹ The AfD has obviously recognised and exploits the emotionalising effect of audiovisual formats for the purpose of political mobilisation. Nevertheless, Facebook was still the most frequently used platform for the 50+ age group in 2024.⁵²

A particularly large number of accounts under the Politics category were identified in the cluster selection based on the “high proportion of far-right actors” criterion (31.3%). This is reflected accordingly here. Around 30% of the accounts on the list on which the selection was based were attributable to the AfD. In the remaining clusters, which were created using other cluster selection methods, the proportion of accounts categorized as Politics is between 6.0% and 21.3% (see Graphic 10).

Graphic 9: Proportion of total posts categorised as suspicious in the actor category of Politics by party, platform and narrative type.



Graphic 10: Percentage of total posts classified as suspicious by type of account and cluster selection.



Alternative Media

Alternative Media was the third most common actor category in terms of absolute frequency. Accounts categorised as Alternative Media mainly posted on Twitter/X and Telegram (see Graphic 7). This is consistent with the fact that such accounts are most strongly represented in the cluster selection according to Telegram share (20.9%). This suggests that alternative media sources specifically uses Telegram to disseminate narratives. The proportion of accounts categorised as alternative media was slightly higher in the Rex (12.3%) and Claim clusters (11.3%) than in the Rank clusters (10.7%) (see Graphic 10).

5. Qualitative analysis: anti-climate narratives in the data set

A qualitative analysis of the narratives used was carried out to improve the understanding of the rhetorical strategies used in the posts categorised as suspicious. The clusters analysed were inductively coded (see Methodology) in order to identify several recurring narratives that social media users employ to spread climate misinformation and disinformation.

These narratives were then categorised into three higher-level thematic clusters. These included enemy narratives, narratives concerning the negative effects of climate policy, and narratives concerning the climate and climate science. The main ‘enemies’ identified were the climate protection movement, politicians and elites. These groups are depicted as adversaries and associations are made between them and terrorism, corruption, irrationality and malicious intentions. Narratives concerning the negative effects of climate policy concentrate on economic aspects and the assertion that climate protection is destroying the environment. Narratives concerning the climate and climate science question how serious the consequences of climate change are, claim that Germany accounts for an irrelevant proportion of CO₂ emissions, and assert that “natural” causes are decisive for the development of the global climate.

Although most of the narratives identified fell under the categories of Personal Attacks and Delayism, narratives that fell under Scepticism and Denialism were also identified. Subsequent processing using frames that the researchers had inductively identified confirmed that many of the narratives identified in the data set were widespread in the discussion of climate policy, particularly among the far-right online milieu.⁵³ These narratives are often embedded in wider ideological contexts and express worldviews that extend to specific positions on climate policy.

5.1 Enemy narratives

The depiction of the climate protection movement as an enemy

Narrative: Climate activists are terrorists and extremists

Framing the climate movement – and activists belonging to the Letzte Generation group in particular

– **as terrorists or extremists** was a dominant enemy narrative and appeared in at least three of the 19 clusters investigated. ISD identified this narrative as the second most common among the German-language alternative media in a 2023 analysis of over 8,000 English, German and French media outlets.⁵⁴ The foundation for this claim in some of the posts investigated is the accidental death of a cyclist in Berlin in November 2022. It is claimed that the Letzte Generation’s roadblock prevented emergency vehicles reaching the cyclist in time. This led to outrage on social media, which in turn was politically exploited. Subsequent investigations confirmed that the activists were not responsible for the death of the cyclist.⁵⁵

The incident was taken up on platforms used by AfD accounts (see Figure 1) and – combined with a warning against extremist radicalisation – used to frame Letzte Generation activists as a danger to Germany’s internal security. Some posts by AfD affiliates and other accounts also use the term “Klima-RAF” (Climate RAF). The Rote Armee Fraktion (RAF), also known as the Baader–Meinhof Group, was a far-left terrorist organisation to which



Figure 1: A post by the AfD parliamentary group for the German state of Rhineland-Palatinate on Facebook, 30 November 2022. Referring to the accident in Berlin, the post mentions a “new dimension of radicalisation” by “climate extremists”.

34 murders, a kidnapping, hostage-taking and several bombings were attributed between 1970 and 1998.⁵⁶ The populist comparison of the Letzte Generation with the RAF was also disseminated by the CSU Parliamentary Group Chairman Alexander Dobrindt.⁵⁷

The accusations of terrorism and extremism, and the use of extreme comparisons in individual posts, seem designed to avoid a substantive discussion about climate policy and appropriate climate activism. Instead they stoke the flames of a **narrative that regards activists, politicians, the judiciary and the media as part of a conglomerate that is working against the interests of the population.** In the data set investigated, this culminated in the accusation that the German Ministry for Economic Affairs (headed by Green party politician Robert Habeck) used state funds to finance the Letzte Generation group directly. Fact checks reveal that the Letzte Generation received no financial aid from the German government and that state funding had only been provided for an account service that was used by persons including the activists.⁵⁸

In the context of the accusation of state funding of the activists, it is also striking that **most of the posts investigated fell within the period between September and November 2022.** Reports of raids, arrests and convictions of the activists in relation to “formation of a criminal association”⁵⁹ only increased after December 2022.* Potential connections between the framing by far-right actors before the raid, societal discourse and the way the German government deals with activists comprise a relevant field for further investigation, particularly in the context of the normalisation of far-right narratives and their increasing influence on society and politics.

Some posts that adopted the narrative that “climate activists are terrorists and extremists” also include climate scepticism and delayism tactics. It is noticeable that these arguments are not generally formulated in detail but casually interspersed throughout. Examples include referring to climate change as an “alleged state of emergency” (see Figure 2) or supposed “de-industrialisation” due to climate protection measures. In the context of

* This categorization of climate activists is however contested among legal experts, as a criminal offence is only fulfilled if the committing of a criminal act is not subordinate to other purposes. see [Klimaschützer der “Letzten Generation”: Eine kriminelle Vereinigung? | tagesschau.de](https://tagesschau.de)



Figure 2: A post by the Bayernpartei on Facebook, 25 November 2022. The poster refers to climate change as an “alleged state of emergency”, calling into question the seriousness of the situation.”

party-political accounts that take up the narrative that “climate activists are terrorists and extremists” in the data set investigated, this points towards the strategic use of personal attacks to gain political capital.

This enemy narrative is also frequently extended to encompass other topics that are used for the mobilisation of the far right. Buzzwords and phrases such as “support

for democracy”, “civil society”, “Antifa” and “wokeism”, which are associated with progressive values and actors, serve a vehicle to construct a supposedly dangerous and all-powerful “far-left” enemy. Anti-migration and xenophobic buzzwords and phrases such as “boat migrants” and “clan criminality” appear in the data set in connection with the enemy narrative that “climate activists are terrorists and extremists”.

Narrative: Advocates of climate protection are irrational and ideologically motivated

Another dominant narrative in the posts investigated is the questioning of the rationality and sanity of people who advocate climate protection. Instead of dealing with the proposed measures on a factual level, these narratives aim to discredit and delegitimise the actors involved in a similar manner to the “climate activists are terrorists or extremists” narrative.

Terms that evoke associations with mental illness (such as “crazy” and “insane”) appear in a large number of clusters and posts in the context of enemy narratives concerning climate activists and government representatives. Such narratives include terms such as “**climate madness**”, “**climate insanity**”, “**climate hysteria**”, “**eco madness**”, “**green madness**” or simply “**madness**”. This pathologisation expresses the rejection of the climate movement while also de-legitimising its concerns.

A cluster in which narratives of pathologisation were particularly dominant contained posts that were critical of statements by Heiner Koch, the Catholic Archbishop of Berlin, who referred to statements by Greta Thunberg and the Fridays for Future movement in April 2019 as a “prophetic message”.⁶⁰ After being subjected to hostility and insults, Koch put his words into context, explaining that he had not wanted to elevate Thunberg to a figure of salvation, but that he considered the climate movement’s message regarding the “preservation of creation” and the way in which it had raised awareness of the issue was prophetic in the sense of an uncomfortable reminder.⁶¹

Posts concerning this incident contain pathologising attacks on Koch, as if he was not capable of participating in public debate. A post by the publicist Carolin Emcke on the limits and possibilities of amalgamating theology and politics in turn was abbreviated and distorted, concluding to ask whether she or the Archbishop were “crazier” (see Figure 3). This indicates an increased level of emotion-alisation in the debate and highlights how ad hominem arguments* are used to drive anger and polarisation.



Figure 3: Post from a private account in which it is asked whether publicist Carolin Emcke is “crazier” than Heiner Koch, for pointing out possible relationships between theology and politics.

Pathologising narratives were also employed within the cluster investigated in relation to Greta Thunberg (e.g. in relation to her Asperger’s Syndrome). Thunberg’s disorder is often placed in a context that denies her sanity (e.g. in reference to instrumentalisation by her parents and politicians). However, there is no substantiated evidence that Greta Thunberg does not act with full conviction and

* Argumentum ad hominem is a bogus or straw-man argument that attacks the person of the opponent. The intention is to discredit the position and its representative in the eyes of the public. In rhetoric, an argumentum ad hominem can be deliberately used as a polemical and in some cases hair-splitting strategy. If the attack has no substantive connection to the subject of the dispute, it is also referred to as argumentum ad personam.

awareness or is being exploited for the financial interests of third parties.⁶²

Narratives that seize on motifs of childishness present another form of denying rationality. They aim to portray **climate activism as an expression of youthful recklessness, something people do in their spare time or the result of naïve ideas** about society, politics, the economy and the environment. The core message of such narratives is that the activists (who are described in terms such as “brats”, “stupid” or “spoilt”) are not to be taken seriously. Associations are often also made with the **alleged instrumentalization or exploitation of children and young people by the climate protection movement**. Such narratives portray children and young people as passive underlings who are manipulated and forced to spread the message of environmental protection. These children and young people are portrayed as puppets of lobby groups, social elites or political groups. **The narratives sometimes use terms such as “abuse”, which evoke associations with sexual abuse** and claim that the children are being “incited” against other generations. These narratives all deny young people the capacity to represent and formulate political opinions themselves.

One post concerning the controversy surrounding the Archbishop of Berlin refers to Greta Thunberg as an “exploited child” and ironically expresses the hope that she will not be “nailed to the cross” like Jesus. Another post frames Thunberg as a “child abused by unscrupulous lobbyists”.

Such narratives deny climate activists the capacity for independent thought and action, which in turn is used to **stoke the flames of conspiracist narratives. According to these narratives, the fight against climate change is a sinister plan by elites and lobbyists to push through their own interests**. In this context, one post employs both the image of the puppet and the abused child.

Another dominant form of narrative for the denial of rationality is the accusation of ideological motivation, which aims to **portray the positions of the climate protection movement as an ideological aberration**. Such posts propagate their own positions of climate scepticism and climate denialism as being reasonable.

Unlike pathologising narratives, ideological motivation narratives do not interpret the distorted perceptions attributed to political opponents as an expression of mental illness, instead claiming that this misinterpretation of reality is politically or ideologically motivated. The accusation of ideological infatuation is a useful way to avoid discussing any objective facts and arguments that are put forward.

The infantilisation and pathologisation of young activists and accusations of ideological infatuation also delegitimise the actual substance of their positions. Furthermore, the re-interpretation of a political conflict as a generational conflict serves to relieve those who reject climate protection measures as they do not have to deal with the actual substance of their political opponents’ arguments. As such, these narratives also fall within the overarching strategy of avoiding substantive discussions by using personal attacks.

Narrative: Greta Thunberg’s deletion of a post is evidence of manipulative argumentation

In a homogenous cluster of posts in our dataset, **Greta Thunberg was attacked as being a representative of the climate protection movement who is using manipulative methods to achieve her goals** and – contrary to the way in which she presents herself – is not arguing on a scientific basis. These posts were from 2023 and concern the deletion of a February 2018 tweet from Greta Thunberg’s account.

According to the narrative, Thunberg posted a tweet that cited a climate scientist and predicted the end of humanity in 2023. This is a misinterpretation of Thunberg’s tweet. Thunberg had linked an article that in turn quoted from a lecture by James Anderson, an atmospheric researcher at Harvard University. In his lecture, Anderson described 2023 as the latest possible date for phasing out fossil fuel production in order to prevent irreversible consequences for the polar ice caps. The headline of the article abbreviated and dramatised this to become the statement “Top climate scientist: Humans will go extinct if we don’t fix climate change by 2023”, which Thunberg adopted in her post, marking it as a quote in inverted commas.⁶³

Neither Thunberg nor the article nor the scientist quoted referred to the “end of the world” or the “end of human-

ity” by 2023, as the narrative reinterprets it. In so doing, the narrative portrays Thunberg as doubly manipulative: she is accused of basing her arguments on scientific misjudgements and also of trying to disguise this by then deleting such posts. In some posts within the cluster, Anderson’s prediction was also **associated with statements concerning other allegedly unrealised climate change tipping points and impact assessments** (without going into more specific detail or addressing the fundamental difficulties of scientific modelling based on a certain level of knowledge and the subsequent evaluation thereof). This reveals a connection to narratives that fundamentally question the severity of the effects of climate change.

The depiction of politicians and elites as an enemy

Narrative: Politicians and the climate movement want to establish an “eco-dictatorship” or a totalitarian state

This narrative **accuses politicians and the climate movement of wanting to establish an “eco-dictatorship”**. These conspiracist narratives assume that the actual goal of environmental policy measures is not environmental protection but the **erosion and abolition of individual freedoms**. They claim that the real reason behind the measures is to gain or extend political control. Some posts also imply that the aim of environmental protection measures is to paralyse Germany economically. Others frame the measures as part of the Great Reset,⁶⁴ an initiative of the World Economic Forum (WEF), which is interpreted within the conspiracist spectrum as a plan for world domination by sinister elites. The narrative that environmental concerns are a pretext for establishing a dictatorial regime was found in various clusters in our dataset.

Variations of this narrative include the alleged desire to establish “eco-socialism”, “climate fascism” and even a “climate dictatorship”. Another manifestation of this narrative is the climate lockdown narrative,⁶⁵ which connects measures taken to combat the COVID-19 pandemic and plans for a climate lockdown.⁶⁶ The eco-dictatorship narrative portrays climate protection measures as dictatorial and illegitimate. The suggestion that people’s legally guaranteed freedom is to be restricted consti-

tutes both a rejection of the measures discussed and a personal attack.

This narrative turns the discussion of climate protection measures from a substantive political debate into an argument about political systems and delegitimises climate policy. This argument and the claim of “eco-propaganda” take the same line as **accusing political opponents of anti-democratic traits, which is a popular rhetorical tool of the far right**.⁶⁷ This kind of argument is sometimes combined with the rhetoric of self-defence.

The eco-dictatorship narrative can be assigned to two categories. As well as constituting an attack on climate politicians and the climate movement, this narrative also employs delayism by **sending the message that climate policy is not possible by democratic means and that environmental protection can only come at a cost to democracy**.

This narrative is widespread and was found in **seven of the 19 clusters investigated**. It was also disseminated in conjunction with other narratives. One example is the combination with pathologising and ideological motivation narratives, in which supporters of the climate protection movement are portrayed as hysterical, agitated and authoritarian. Another was the combination with infantilising narratives, in which warnings of a “pigtail dictatorship” by Greta Thunberg are issued (see Figure 4).

In one cluster, statements by Karl Lauterbach, the German Federal Minister of Health, were used as the starting point for conspiracist narratives. In a guest article in *Die Welt*, Lauterbach wrote that effective combating of climate change would require measures “analogous to the restrictions on personal freedom in the fight against the pandemic”,⁶⁸ adding that he had “increasing doubts as to whether this is achievable”. Posts within the cluster interpreted this as a declaration of intent to abolish the personal freedom of citizens in Germany forever. It became the basis for conspiracist narratives concerning alleged plans for a “climate lockdown”.

As such, these narratives fuel the fear of restrictions on personal freedom and discredit environmental protection measures. In some posts, the term “climate lockdown” was replaced by the term “climate dictatorship”.⁶⁹



Figure 4: A Facebook post by the AfD association for the south-western German town of Esslingen, depicting Greta Thunberg with the caption “We don’t want a pigtail dictatorship!”.¹¹

One cluster addresses a satirical song by a children’s choir on German public television, which was reinterpreted as an ideologically motivated attack on the grandparent generation. This incident was referred to in Germany as “Omagate”. A social media campaign by the far-right spectrum then interwove several narratives including the eco-dictatorship narrative, the instrumentalization and incitement of children and young people narrative, the pathologising narrative, the ideological motivation narrative and the corrupt elites narrative.

The use of eco-dictatorship narratives in political attacks in the data set investigated is extremely versatile. Such narratives can be linked to a large number of other narratives and a wide range of topics. These are often narratives voiced within the far-right spectrum. Eco-dictatorship narratives were found in a wide range of post clusters that were identified using the list of accounts from the far-right spectrum (see Quantitative Methodology). This suggests that accusing the environmental movement or environmental politicians of having

dictatorial intentions is a widespread ideologeme in the far-right milieu and that it is used to delegitimise climate policy. **In this case, the eco-dictatorship narrative is incorporated within a broader political stance and is associated with the rejection of health and migration policy.** This narrative is part of a broader attack that targets the political elites as the enemy.

Narrative: Politicians and the climate movement practise bigotry and double standards

Bigotry narratives claim that **politicians and people from the climate movement act in a manner that is detrimental to the environment and as such do not act in accordance with their own standards.** Such behaviour is depicted as a moral failing and proof of the infeasibility of climate protection measures or as proof that such measures are merely a means of social control. As other ISD studies have shown, bigotry narratives have been used as part of delayism tactics in the international climate debate for years.⁷⁰

Within the data set, **the accusation of bigotry is primarily levelled at representatives of the climate movement, e.g. in connection with holidays, air travel and mobile phone use.** This is used as evidence that climate activists do not take their own activism seriously. Climate activist Luisa Neubauer was accused of double standards with regard to air travel (“#LongHaulLuisa”). After her appearance at the Glastonbury Festival, posts made smug associations between Greta Thunberg and the rubbish produced there. While in principle this may still be an objective indication of a possible discrepancy between claim and reality, the use of photos from previous years suggests that the main concern was to defame Thunberg’s commitment to the cause rather than to provide constructive criticism of the festival or its visitors.

Bigotry narratives were found in four clusters within the data set investigated. The frequency with which these narrative forms were shared differs between the individual clusters. In the cluster concerning allegations against a Hamburg-based Fridays for Future member, they were only found twice in the data set. In the cluster that contains posts about Thunberg’s appearance at Glastonbury, they comprise backbone of the argument for most of the posts categorised as suspicious cases.

Accusations of bigotry sometimes occur in conjunction with narratives that deny the rationality of climate movement activists, infantilising narratives and pathologising narratives. Some of them are also used as stand-alone attacks. While most clearly fall into the category of Personal Attacks, some are associated with the rhetoric of delayism. In such cases, it is implied that the behaviour criticised is proof that environmental protection measures cannot be implemented. **In such cases, members of the climate movement are accused of trading climate protection against goods such as prosperity, with the suspected intention of emphasising a supposed conflict of objectives.** One post alludes to an end to affluence by implying that the actions of the climate movement constitute “Affluenza”.

Bigotry narratives aim to criticise those who represent certain political positions in order to attack and delegitimise these positions. As such, they are forms of ad hominem arguments and – by employing double standards – have the psychological effect of helping to ward off any blame the person using the argument attributes to themselves or any blame attributed to them by third parties. In philosophy, bigotry narratives are also known as “appeals to hypocrisy”^{*} or “tu quoque” (“you too”) arguments. Like accusations of double standards, they are part of everyday political discussion and not limited to the discussion of environmental issues. They are made by a wide range of political movements. **In the clusters investigated, bigotry narratives could not be clearly assigned to any one actor category.**

Conspiracist narratives, corruption narratives and corrupt elites narratives

Conspiracist narratives place climate policy measures in the context of conspiracies, implying that such measures are part of sinister plans. Corruption narratives and corrupt elites narratives are based on the **assertion that politicians, other social elites or persons from the environmental movement only advocate their positions because they expect this to result in personal gains** (monetary or the achievement, maintenance or expansion of political power and control) that have noth-

ing to do with the actual substance of the respective position.

Conspiracist and corruption narratives serve to delegitimise climate action by presenting it as a means to an end for dishonest plans (rather than an end in itself). These narratives also discredit and disparage the moral standing of those who demand such measures because the narratives accuse these people of manipulative and selfish behaviour. Corruption narratives are components of populist narratives and constitute fragments of conspiracist narratives, in which the alleged corruption of individual climate activists or politicians is presented as their motivation to work with sinister elites and participate in conspiracies.

The narratives differ as to which actors they accuse of corruption and what intentions they attribute to them. In the debate concerning the environmental compatibility of wood-fired heating systems and pellet stoves,⁷¹ critics of these heating methods accuse the media of being in the palm of lobbyists. The posts claim – without any concrete evidence and using a derogatory tone – that a lack of research or the influence of lobbyists leads the media to provide insufficient reporting on the damaging effects of wood-fired heating systems on the climate. These were the only suspicious cases of climate disinformation or misinformation expressed by climate protection movement members or sympathisers within the data set examined.

The same cluster also included suspicious cases among posts that argue exactly the opposite. Proponents of wood-fired heating distort media coverage of current regulations statements by the German Federal Environment Agency (UBA) to create the image of a targeted campaign to ban wood heating. These proponents of wood heating blame this alleged campaign on ideological prejudices and the World Health Organisation (WHO), amongst others. The argument in favour of wood heating is based on the negative consequences for consumers in view of high energy prices and Germany’s low proportion of wood burning. Accusations of an illegitimate campaign controlled by international organisations are combined with delayism tactics.

^{*} <https://www.grammarly.com/blog/rhetorical-devices/appeal-to-hypocrisy/>



Figure 5: A Telegram post by Eva Herman from 11 February 2022 on pellet and wood-burning stoves, suggesting that the WHO wants to determine the level of air purity in Germany.¹⁴

In other clusters it is argued that political measures such as the German CO₂ tax are a “business model” by the Green party or more generally that politicians are “ripping people off” or “cashing in” on citizens through emissions taxes. Such language denies the substantive justification of climate policy measures and emphasises a financial interest that is presented as illegitimate. Some posts claimed that this is a “refugee tax” that has nothing to do with climate policy but is instead used to finance refugees. A classic populist theme is also used in this case, namely the insinuation that the political elite systematically lie to and manipulate the people. Suspicious cases in several clusters insisted that the Letzte Generation group or individual climate activists are supported by federal ministries. This claim is demonstrably false⁷² and insinuates a connection between

federal policy and parts of the climate movement. It also insinuates that there are financial incentives behind the Letzte Generation’s activities. Certain posts falsely claimed that funding of €156,420 from the German Federal Ministry for Economic Affairs could also have been used for other purposes, thereby accusing the ministry of wasting taxpayers’ money.

Other corruption and conspiracist narratives focus on individual activists and include one post’s claim that German climate activist Luisa Neubauer is working in coordination with Bill Gates and Klaus Schwab, Executive Chairman of the World Economic Forum, as well as the insinuation that Greta Thunberg is a “child-labour puppet-slave to George Soros”. Some posts also interpreted environmental measures such as the German CO₂ emissions tax as a measure that is part of the conspiracist narrative of the Great Reset (see glossary).

Corruption and conspiracist narratives occurred in eight of the 19 clusters investigated and were widespread in the data set investigated. Such narratives were expressed alone or together with delayism narratives (e.g. during discussions of the rates for the German CO₂ emissions taxes or in the case of false claims that the Letzte Generation group is financed by the German government). Conspiracist narratives were most regularly posted in conjunction with climate scepticism and denialism narratives.

Corruption and conspiracist narratives are part of the common rhetoric of populist movements.⁷³ Within this data set, such narratives were expressed as part of broader ideological debates in which environmental issues are more likely to be an angle for expressing a more general dissatisfaction than stand-alone issues. This illustrates a politicisation of environmental policy that is increasingly ideological and world-view-based rather than purely factual and substantive.

5.2 Narratives concerning the negative effects of climate policy

Cross-platform narratives were also disseminated that point to the supposed negative consequences of climate protection for the German economy, German citizens and the environment. These narratives correspond with the definition this study uses for arguments that

aim to delegitimise measures (delayism narratives). Two overarching narratives were identified: One refers to the supposed economic consequences of climate protection; the other refers to the supposed impact on the environment.

Narrative: Climate protection measures will have negative economic consequences for Germany

Some posts that referenced the supposedly negative economic consequences for Germany **criticise the tax burden associated with climate protection**. A cluster of posts from between August 2020 and January 2021 criticises the high tax burden in the context of the increase in the German CO₂ emissions tax and a closer alignment of vehicle tax with emissions.⁷⁴ Many posts cast doubt on the effectiveness of these measures, with references to “Germany’s special energy policy path” and “selling indulgences”.

Energy transition and tax measures aimed at effective climate protection were also described as a threat to energy supply security and to Germany as an industrial location. However, analysis of the measures reveal that large consumers have been exempted from a series of levies and that a more nuanced view of the effects of the proposed legislation is therefore required. Experts have pointed out that the price of electricity in Germany would have risen even without the transition to renewable energies, as some of the additional investment would have had to be made to maintain existing infrastructure, facilities and buildings anyway.⁷⁵

In addition to questioning the effectiveness of the measures, the fear of a state of emergency is also fuelled. Dramatising methods, including slogans such as “freeze for the climate” and warnings of “impoverishment”, are often employed (see Figure 6).

It is striking that terms such as “climate costs”, “climate taxes”, etc. are used to evoke negative associations with climate policy and to emphasise the associated burdens for citizens. The potential economic consequences of not combating climate change are ignored.⁷⁶

The narrative that “climate protection measures will have negative economic consequences for Germany” is also often combined with direct – sometimes personal – at-



Figure 6: Post by the AfD politician Martin Weber on Facebook, saying “Freezing for the climate? Stop Eco-Socialist Impoverishment!”, 9 March 2022.^v

tacks against the German government (e.g. accusations that it “rips people off”). **The suggestion that taxes and duties go directly into the pockets of government employees is regularly made.** Aspects such as the economic steering function of taxes and the use of tax revenues for investment and the welfare state are either directly questioned or deliberately ignored.

It is noted that in our dataet the **economic consequences narrative was often spread by AfD accounts**. These accounts position themselves as the only political force to represent the interests of citizens and protect these citizens from alleged corruption and enrichment by political elites. This economic downturn narrative was also being disseminated by non-AfD accounts including **influencers who are on the far-right spectrum and have a wide reach**. Niklas Lotz aka “neverforgetniki” and Thorsten Schulte aka “Silberjunge” were two such examples.⁷⁷ Both influencers cultivate close ties to the AfD. In 2020, AfD MPs smuggled Thorsten Schulte and several other right-wing media activists into the German federal parliament. This campaign involved members of parliament from other parties being harassed, insulted and intimidated.⁷⁸

An analysis of the narrative also reveals that **criticism of COVID-19 policy and criticism of tax reforms are rhetorically linked**. These narratives emphasise that German citizens should be provided with relief and not placed under additional strain – particularly in light of the perceived burdens caused by the pandemic. The narratives also claim – without going into substantive justifications for or against individual tax measures and their impact on social distribution issues – that lack of action in this regard is in itself evidence of government corruption (see Figure 7).

It is also interesting that criticism of tax policy is used to position other topics that are used for mobilisation in the far-right spectrum. One post referred to the German CO₂ tax as a “refugee tax”. **This creates a negative association between the topics of refugees/migration and additional tax burden**, even where there is no substantive link between the planned tax reforms and the German government’s policy on refugees and immigration.

Some posts linked the narrative of negative economic consequences with the denial of human-induced climate change and the denial of the role of CO₂ in climate change (see Climate and climate science narratives). In many posts, this narrative becomes part of an all-encompassing narrative according to which the ruling elites are responsible for the deteriorating quality of life and socio-economic situation in Germany, which itself is allegedly the result of the elites’ supposedly misguided sanctions policy against Russia and their migration, asylum and social policies (e.g. in relation to rent prices and general inflation). Some of the corresponding posts also contained conspiracist elements, such as references to the conspiracist narrative of the Great Reset⁷⁹ and references to the Bilderberg Conference, which is often the subject of conspiracist narratives.⁸⁰

It is noticeable that **connections to conspiracist narratives and explicit denialism or scepticism regarding climate change appeared more frequently in posts by private individuals**. AfD-affiliated accounts focussed primarily on criticising the German government, the general rise in prices and the financial burden on the population. The fact that these posts appear in the same narrative cluster indicates a semantic link between different forms of the economic downturn narrative. It is therefore

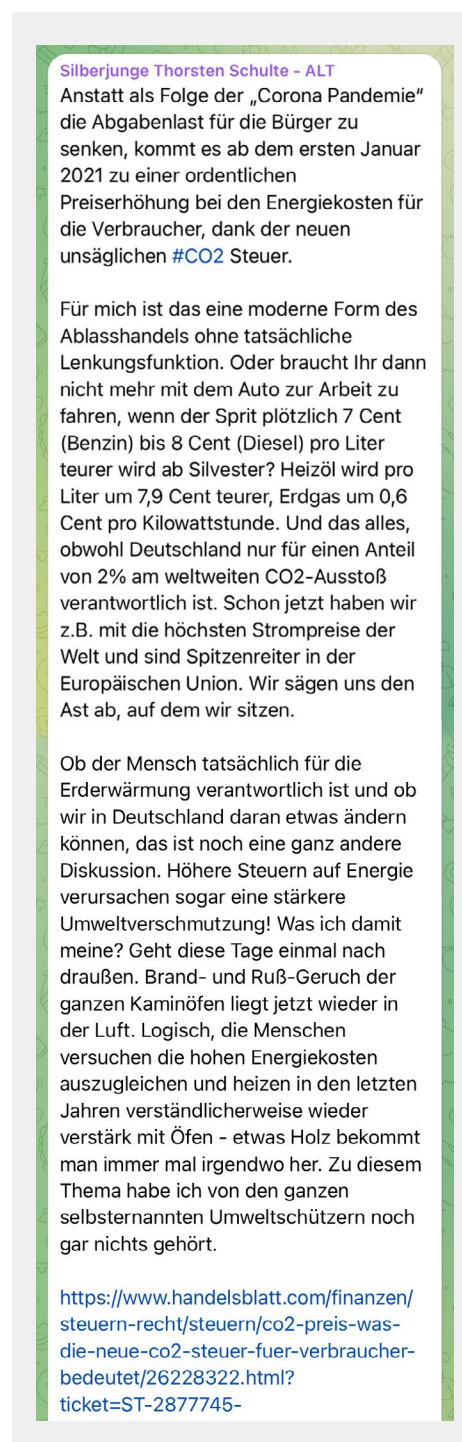


Figure 7: A post by the far-right influencer Thorsten Schulte aka “Silberjunge” on his Telegram channel on 11 November 2020 (the channel has since been replaced by a new channel with almost 20,000 subscribers).^{vi}

reasonable to conclude that dominant narratives of the economic downturn (e.g. in the context of plans for tax reform and climate protection) also fuel more radical narratives that serve far-right conspiracist narratives.

Narrative: Climate protection causes environmental destruction

This narrative concerns the **genuinely or allegedly counter-productive aspects and consequences of climate protection programmes, technologies and policies**. These negative effects are emphasised, constructed and presented out of context. The narrative regularly focuses on specific often technological measures for greater climate protection and suggests that these actually contribute to the destruction of the natural environment.* If the negative consequences presented are not plausible, this narrative should be classified as a climate scepticism narrative. The actors do not directly deny human-induced climate change; instead they slow down or prevent the necessary transformation of infrastructure by disseminating disinformation and misinformation.

The “climate protection causes environmental destruction” narrative **appears in a specific cluster within this data set**. However, it appears in several different forms. The most common relates to the **potential climate impact of wind turbines due to sulphur hexafluoride emissions**. SF₆ is a greenhouse gas that, according to the United Nations Intergovernmental Panel on Climate Change (IPCC), has 24,300 times more influence on the greenhouse effect than CO₂.⁸¹ Due to its insulating properties, sulphur hexafluoride is used to control tiny switchboards in industrial applications. Such switchboards are often installed in wind turbines because of the limited space available. If the switchboards are dismantled after

their useful life, SF₆ can be recycled using an extraction process. Although leakage or emission from a system cannot be ruled out (e.g. due to damage or faulty construction), the risk is very limited.⁸²

The narrative, however, assumes that leakage is guaranteed and labels turbines as “climate killers”. Connections are made between SF₆ values in Germany and the expansion of wind energy in Germany without any evidence. The propagators of this narrative fail to take into account that a wind turbine has a positive carbon footprint after just a short period of use. Even if all the SF₆ contained in a switchboard were to be emitted at the end of its service life, the system would still save significantly more CO₂ than it would emit SF₆ over its service life.**

The data set also contained various other forms of this narrative that are associated with wind turbines. **Claims were made that wind turbines are responsible for chopping down trees to make way for construction sites or provide construction materials for wind turbines**. Such narratives are a smokescreen compared to the benefits of wind turbines present for the climate and the environment, and compared to the environmental impact of other forms of energy generation.⁸³ **Other false versions of this narrative or versions taken out of context included the claim that wind turbines kill birds or other animals, and that the ground around a wind turbine heats up as a result of air shifts, causing droughts**. There were also false and misleading posts in the cluster concerning the supposed lack of recyclability of wind turbines.⁸⁴

Wind turbines were not the only topic in the field of technology. The cluster also includes narrative forms that focus on photovoltaics and electromobility. One post claimed that photovoltaic systems release toxic

* One example of such an argument is the criticism of mining lithium and cobalt for electric car batteries. This is not unfounded, as it pollutes the environment and also has human rights implications due to mining in parts of Africa and South America. Taken out of context, however, this criticism ignores the fact that the ecological benefits of an electric car outweigh those of a combustion engine after a certain number of kilometres driven. [VDI-Ökobilanz: Wie viel CO2 sparen E-Autos wirklich? | VDI](#)

** The exact information on this issue varies and depends on factors such as the size and model of wind turbine. The CO₂ savings in tonnes per system per year are in the high thousands, sometimes even the tens of thousands. See Laufmann, P. (2023). Faktencheck: Wie gefährlich ist das SF6-Gas in Windrädern? *agrarheute*. Accessed on 25/02/2025 at <https://www.agrarheute.com/energie/strom/fakten-check-gefaehrlich-sf6-gas-windraedern-613731> and n.a. (2023). Stimmt nicht: Windräder: Bau setzt mehr CO₂ frei, als durch Betrieb gespart wird. *MDR Wissen*. Accessed on 25/02/2025 at <https://www.mdr.de/wissen/faktencheck/faktencheck-windraeder-108.html>

substances into the groundwater. Another fundamentally criticised the impact of renewable energies on the natural energy cycle, suggesting that this is why they are neither ecological nor infinitely available.

The common ideological basis for all these narratives is that climate protection measures supposedly cause more damage than they prevent or avoid. They discredit individual measures and policies that are deemed “green” and villainise politicians, activists and advocates who push climate change as an important or key issue. In the cluster described above wind turbines are referred to as a “construct of green hypocrisy”.

Although the themes of the individual narratives are sometimes very different, what they all have in common is their aim of sowing doubt as to the effectiveness of political and technical measures as well as the moral integrity and competence of those who advocate their use.

As such there is a connection with infantilising narratives, narratives of instrumentalisation, narratives that pathologise climate activists, narratives that claim ideological motivation, and narratives that contradict the scientific consensus.

Some posts (especially those that adopt narratives of an eco-dictatorship and corrupt elites) also underpin personal attack narratives. Such narratives are based on the assumption that if climate protection measures do not in fact protect the climate and the environment at all (but instead destroy them), there must be a different reason behind such measures. The posts allege a variety of motivations for this, including financial gain, political power and conspiracies. There is a danger that these narratives are particularly well-suited to the conspiracist milieu.

It is easy to see how this narrative interweaves the various disinformation and misinformation narratives concerning climate change to create a complex antithesis to the scientific consensus. It is by no means the case that individual clusters and posts can be assigned to a specific narrative or a specific narrative form.

Using this methodology, it was possible to identify hierarchical clusters that were coherent in terms of themes. However, the content analysis revealed that **most suspicious posts often contain several categories of disin-**

formation and misinformation narratives. There was also a mix of various narrative forms within both clusters and posts. This is clearly illustrated by two posts within the cluster. Both link to the same article by an alternative media outlet (see Figure 8 for an example).



Figure 8: A post from a Facebook group of wind turbine opponents.

The linked article not only claims that wind turbines can cause droughts; it also sows fundamental doubts about the expansion of wind energy by combining various widespread disinformation and misinformation narratives:

“Until now the best-known arguments against wind turbines were the shredding of birds, bats and insects, the massive shadows they cast, health damage caused by infrasound and the problem of recycling the turbines. [...] Now wind power’s supposed contribution to minimising global warming is also coming under fire. The fact is that if you observe the challenges of environmental protection as a whole, including littering and damage to wildlife and natural landscapes, wind power is a questionable technology.”⁶⁵

The arguments against wind turbines are either wrong, cannot be substantiated or have been taken out of context.⁶⁶ Nevertheless, the idea that wind power is “a questionable technology” is underpinned by other disinformation and misinformation narratives that appear in this study:

“The benefits of CO₂ reduction as a result of the transition to renewable energies including wind power are doubtful, as Germany’s special energy policy path makes it completely irrelevant in the global context. Germany only represents roughly 2% of global human-induced carbon dioxide emissions, which in turn only account for 10-15% of total carbon dioxide emissions.”

This combines two disinformation and misinformation narratives that are both well-known and widespread: the downplaying of Germany’s responsibility in the fight against anthropogenic climate change and a heavy em-

phasis on distinguishing between natural and anthropogenic CO₂ emissions.⁸⁷ The two narratives also appear in the data set investigated and are analysed in the next section. The text later draws a connection to the German federal government with reference to their allegedly wrong or incompetent policymaking. It claims that the government wants to *“diligently continue and lay down legal requirements for the expansion of wind power”*.

In this example, the legislature is accused of acting contrary to its own convictions by expanding wind energy. This illustrates how various disinformation and misinformation narratives are combined to attack the discourse on wind energy (an important component in the transition to renewable energies) from multiple angles at the same time with the intention of discrediting it as effectively as possible.

5.3 Climate and climate science narratives

A wide range of narratives are employed to attack the scientific consensus around human-induced climate change. The data contains both scepticism narratives and narratives that deny human-induced climate change.

Narrative: The consequences of climate change may not be all that severe

The expression of doubt as to the severity of the consequences of climate change often serves as a rhetorical support for criticism of both climate policy and those who advocate climate protection. Posts that attack climate activists sometimes make reference to an “alleged state of emergency” or “the supposed threat of ‘climate catastrophe’”. These references serve to delegitimise activists’ advocacy of climate protection. **The use of the terms “climate hype” and “climate apocalypse”** can in certain contexts constitute a form of this narrative. Other terms, such as “climate hysteria”, “global saviour insanity” and “climate saviour insanity” share more similarities with narratives that pathologise and infantilise. Four post clusters contain various forms of this narrative.

It is striking that none of the investigated posts in which this narrative is adopted aimed to address the potential consequences of climate change. Instead, posts that focussed on criticising climate measures, price increases and accusing the government of exploitation tended to

casually question the severity of the consequences of climate change using devices such as ironic interjections (“as if humanity were on the brink of extinction”). This indicates that the refusal to recognise human-induced climate change and its consequences is already established in a certain milieu and provides the basis for its narratives. **Deeply rooted hostility towards elite and science can be used for this milieu’s own political agenda.**

An AfD politician provides one exception in which the severity of the consequences of climate change are actively rather than casually denied. In this regularly shared video, he claims that climate change does not cause any additional natural disasters or extreme weather phenomena. However, this does not correspond to the current state of climate research.⁸⁸ The AfD politician claims that the increase in the observation of disasters and weather phenomena is due only to modern technology as well as to improvements in measuring and the frequency of measurements. This claim employs a similar argument to that used in incidence narratives concerning the COVID-19 pandemic. At the time, the various waves of the pandemic were not recognised as representing the trend for the rate of new infections; instead it was claimed that this was a statistical occurrence caused by increased testing during the Christmas period.

Narrative: Germany’s share of CO₂ emissions is irrelevant

One cluster contained other disinformation and misinformation narratives that can be classed as belonging to the climate scepticism narrative. Both concern Germany’s role in the context of global warming. What is unique about this is that the two narrative forms build on each other. However, these narrative forms adopt different strategies.

Narrative: Germany’s share is 1.9%

The first narrative makes **the false claim that Germany is climate-neutral and has no influence on the global climate**. It claims that the proportion of emissions for which Germany is responsible is too small to affect the global climate. It also claims that Germany’s share of global CO₂ emissions is 1.9%. Although this statistic is roughly correct, the argument is misleading as no context is provided for this figure.

The share of global CO₂ emissions for every country on earth other than the USA and China is under ten percent. Of the remaining countries, every country other than India, Russia and Japan lies below the 2 percent mark. Together, however, the countries below two percent are responsible for around 40% of global CO₂ emissions. Furthermore, just under one percent of the global population lives in Germany – this one percent is responsible for almost two percent of CO₂ emissions. These two ratios illustrate that Germany's contribution is not negligible in global terms.⁸⁹

Within the scientific community, this line of argument has long been known as a climate disinformation strategy.⁹⁰ Different aspects of the same narrative are used and appear in connection with various disinformation categories. It appears in the climate scepticism discourse described above, which focuses on the 1.9% to cast doubt on climate science. The same narrative is also used in the context of discourses that delegitimise climate protection measures. King et al. refer to this as the “absolutionism” narrative. This narrative focuses not on the scientific aspect but the failures of other countries as regards climate protection in order to shift responsibility away from Germany and delegitimise climate protection measures.

“This line of argument tends to focus on China and, to a lesser extent, India for making insufficient progress or having weak onward targets.”⁹¹

The climate scepticism aspect of the “Germany's share is 1.9%” narrative appears together with the narrative that “climate protection measures will have negative economic consequences for Germany”. Taking the stance that Germany's contribution is irrelevant renders expenditure on climate protection a waste of money. Links can also be found to narratives that infantilise; narratives that claim ideological motivation and eco-dictatorship narratives; as well as references to QAnon narratives (see glossary) and the Great Reset (see glossary).

Narrative: Germany has an influence on 0.0004712% of the CO₂ in the air.

Another narrative form builds on the narrative above to extend beyond the addressing of Germany's share of

CO₂ in relation to the global climate situation. This narrative also casts doubt on the influence CO₂ has on global warming. The core narrative is that Germany only has an influence on 0.0004712% of the CO₂ in the air. This is not true. There are logical errors in the calculation that leads to this result, as reference is always made to the total air and not to the proportion of CO₂ in it. To underline this point, some posts compare the low proportion of CO₂ in the air with the proportion of oxygen and nitrogen, although neither substance has any influence on the rise in global temperature and such a comparison is therefore nonsensical.⁹²

Many posts disseminate this narrative in the form of an anecdote with the character of a chain letter that recounts an alleged conversation at a farmer's market between a professor of reactor physics at the TU Aachen named Robert Imberger and a person from a Green Party stand. Minimal research is sufficient to question the authenticity of the story. There is no TU Aachen or any other university in Aachen that teaches reactor physics or at which a Robert Imberger works. Slightly different variations of this story have also existed in the climate denialist milieu since at least 2010.⁹³

This narrative, which concerns an apparently very small figure, **gives the impression that Germany does not play a significant role in climate change and that climate protection measures are therefore irrelevant, at least in Germany.** No context is provided for this figure. Irrespective of the fact that the calculation is incorrect (see above), the result reveals nothing about the influence of CO₂ on climate change without context. This is because even minimal increases in CO₂ concentrations have a significant impact on the greenhouse effect and therefore also on global warming and climate change.⁹⁴

Between three and five percent of CO₂ emissions are human-induced; the rest comes from natural processes. However, these additional emissions have led to the CO₂ concentration in the atmosphere increasing by half from 0.028% (constant value between the last ice age and industrialisation) to around 0.042%. This means that one third of the current CO₂ concentration in the atmosphere is caused by humans. According to IPCC reports, this has already resulted in global warming of around 1°C. Germany has also played a role.⁹⁵

The cluster also contained posts that build on the narrative of the low CO₂ share and dispute the role of CO₂ for global warming as a whole. **Terminology such as “climate swindle”, “climate lie” and “CO₂ climate lie”** is used. Although the line between the narratives of climate denialism and climate scepticism is sometimes blurred, as this narrative shows, the function remains the same: measures aimed at reducing CO₂ emissions in Germany are rejected, as it is alleged these would have no effect on a global scale and instead lead to negative consequences for the economy, etc. This narrative also ignores the potential of a pioneering role for Germany in terms CO₂ saving as one of the world’s strongest economies and the largest economy within the EU.

Narrative: Climate change is primarily due to natural causes

Some versions of this narrative deny the effect of anthropogenic climate change and instead emphasise the importance of natural factors and periodic fluctuations on changes. **Three clusters contain the assertion that changes in the concentration of CO₂ in the atmosphere are predominantly due to natural causes.** This leads to references to “the Earth’s natural climate change” and labelling of the actual scientific consensus as a “climate lie”.

One particular form of the narrative claims “the sun controls our climate, not CO₂”. This statement is at the centre of a cluster centred around a position paper published by the WerteUnion in Bayern initiative in 2019. In this position paper, the WerteUnion in Bayern described itself as a “conservative grassroots movement within the CSU”.⁹⁶ In 2024, the WerteUnion became a micro-party that is independent from the CDU/CSU and represented throughout Germany. Contrary to the scientific consensus, **the WerteUnion identifies the changing intensity of the sun over time as the main natural cause of climate change and disputes the importance of human-induced CO₂ emissions.**

This claim was connected to the assertion that changes in the Earth’s orbit and tilt in relation to the sun have greater relevance for climate change than human influence. Although posts cite NASA as a key source in posts and linked articles, the US space agency denies this



Figure 9: The manifesto of the WerteUnion in Bayern, then a political initiative in the German state of Bavaria (2019). This manifesto was shared in posts. The original is no longer available, but an archived version can be accessed.⁹⁷

conclusion.⁹⁷ NASA has stated that despite natural fluctuations, the Earth’s orbit and tilt in relation to the sun cannot explain current climate change and that humans have altered the natural greenhouse effect. A fact check by the German Press Agency (dpa) provided the conclusion that “NASA researchers leave no doubt that human use of fossil fuels such as oil and coal has dramatically changed the Earth’s climate.”⁹⁸

This narrative often occurred in conjunction with a number of other narratives and provides the foundation for the rejection of climate protection measures, which – according to the logic of the narrative – are ineffective and have negative economic consequences. The position paper by the WerteUnion in Bayern warns against the “de-industrialisation” of Germany and opposes a supposed “eco-dictatorship and pseudo-scientific doomsday panic”. Other posts regard such supposedly ineffective measures as being motivated by the vested interests of a corrupt elite.

6. Conclusion

The aim of the NOTORIOUS project was to detect misinformation and disinformation on social media platforms and to track their dissemination across various platforms. The use of semantic embeddings of text passages and the creation of similarity networks from these embeddings have proven to be an effective method for identifying relevant topics and narratives. A comprehensive treatment and assessment of the technical approach that was developed can be found in the NOTORIOUS report Cross-Platform Social Media Research: Methods of Data Collection and Analysis [\[only available in German\]](#).

In the context of this report, a sample of posts published on Facebook, Telegram, Twitter/X and Instagram between 2019 and 2023 was analysed in greater detail to test the effectiveness of the method and gain insights into the dissemination of climate misinformation and disinformation. Actor- and content-based indicators were used to help identify disinformation and misinformation narratives within this extensive data set.

Two approaches proved particularly effective: filtering based on the presence of known far-right actors in the clusters and filtering based on fact check databases.

Twitter/X and Telegram appeared to be frequently used platforms for the dissemination of misinformation and disinformation, including climate misinformation and disinformation. This was in line with previous research findings. Under the EU Digital Services Act (DSA), platforms are required to remove content including illegal content. However, the challenge of regulating misinformation and disinformation is that these forms of expression are not necessarily illegal. Nevertheless, platforms must remove misinformation or disinformation if this content falls under an existing criminal offence (e.g. incitement to hatred, incitement to violence or insults).

Qualitative analysis has been particularly effective in demonstrating that a wide variety of enemy narratives are used to disparage political opponent. This has led to social polarisation and disinhibition, as people who campaign for climate and environmental protection have long been subjected to abuse and threats. Some of these have spilled over from the digital space into physical attacks on both climate activists and public officials.⁹⁹

It is therefore essential to hold the platforms accountable, inter alia by enforcing the **regulations of the DSA regarding criminal offences in the digital space**, particularly when they concern indiscriminate personal attacks. In the context of protecting people affected by digital hate and disinformation, platforms need to take proactive measures, such as **protecting privacy, reducing exposure to hate attacks**, and taking consistent action against accounts that repeatedly spread online hate. **Securing long-term funding for victim counselling centres and reporting institutions** is also an important means of protection against digital violence.

Beyond specific threats and criminal offences, an online discourse that is based on attacks, conspiracist narratives, misinformation and disinformation prevents a constructive democratic debate on how best to combat human-induced climate change as a common threat. **Perceived as part of a struggle for survival against political elites with assumed malign intentions, these destructive discourses make it difficult to deliberate on viable and politically expedient measures to deal with a global social challenge.** In this regard, both regulatory bodies and in particular civil society need to promote a **fact-based, empathetic and constructive dialogue**. **Providing citizens with a broad range of knowledge and skills for dealing with the media and social platforms** can help to achieve the necessary societal resilience.

Article 34 of the DSA also stipulates a **risk assessment for very large online platforms (VLOPs) and search engines**. This assessment should be conducted at least once a year and serves to assess any systemic risks stemming from “the design or functioning of their service and its related systems, including algorithmic systems, or from the use made of their services”.¹⁰⁰ This includes risks relating to the dissemination of illegal content as well as those relating to the potential impact on “civic discourse and electoral processes, and public security”.¹⁰¹ Although **climate protection** is not specifically mentioned, it **can be understood as a “social risk” within the framework of Art. 34**. This is in line with the assessment in a Communication from the European Commission from March 2024, which explicitly mentions climate disinformation as a factor that hinders the ability to act in the context of climate change.¹⁰²

Platforms should therefore consider the social risks of climate misinformation and disinformation, and develop appropriate measures to deal with them.

However, a recent report by Climate Action Against Disinformation (CAAD) illustrates that most platforms do not adequately consider climate disinformation in their guidelines for the moderation of advertising and content, and do not take sufficient action against users and companies that systematically disseminate disinformation concerning climate change and climate protection.¹⁰³

Significant improvements in access to research data

are also essential in order to conduct comprehensive investigations into platforms' transparency and accountability obligations. One example of the current shortcomings is the now-defunct CrowdTangle program from Meta, the company behind Facebook and Instagram. Although this tool provided valuable insights into user behaviour on the platform, it also had serious limitations. For example, it was not possible to record comments that expressed extreme opinions – an area that is essential for analysing disinformation and extremist discourse. The successor product, the Meta Content Library (MCL), further exacerbates the problem, as it only allows access to data in a controlled environment and has significant limitations in terms of both flexibility and search options (for comparison, see Table 4 below).

Furthermore, X now mainly offers paid data access, while also setting strict quota limits. This makes comprehensive, independent research even more difficult. X has in some cases even taken legal action against critical NGOs such as the Center for Countering Digital Hate, accusing them of deliberately damaging their platform with its research. These examples show how strongly operators have rejected research into their platforms in recent years. However, comprehensive access to research data must be guaranteed if investigations into climate misinformation and disinformation are to continue. This is the only way to determine how misinformation and disinformation spread online.

Function	CrowdTangle	Meta Content-Library (MCL)
Downloadable data	Users can download data from accounts, (public) groups and pages of any size.	Users can only download data sets of “publicly available content posted by widely known individuals and organisations” — specifically those with a verified badge or 25,000 or more followers, or public pages with 15,000 or more likes/followers.
Archived data	Captures multiple snapshots of the performance of posts, pages, groups and accounts, allowing users to evaluate reach and engagement over time.	Provides real-time performance data but no historical information.
Leaderboard	The leaderboard organises channels in a list based on engagement. This allows users to understand who in a given list is producing content that is well received.	Does not have this function.
Intelligence	Provides a powerful interactive data visualisation tool that allows users to identify trends and inflection points that guide research and investigation.	Does not have this function.
Direct link to public posts	Users can directly access public content on Facebook and Instagram.	Does not provide direct links.
Batch upload	Allows users to quickly add multiple channels to a list via CSV instead of manually adding them one by one, making it easier to research on a larger scale.	Does not have this function.
Dashboard sharing	Allows collaboration between users on a shared dashboard that centres the work of multiple people in one place.	Does not have this function.
Filter and sorting options	Users can filter by number of page followers, engagement, local relevance, verified status and performance scores, etc.	Does not offer these specific options and significantly fewer choices overall.
Views	Measures views only for Facebook video posts and Facebook live video posts.	Contains views of public posts.
Short videos (reels)	Contains no data on reels.	Short video data is available.
Comments	Users can view the total number of comments on a post.	Users can analyse posts and comments programmatically via the API. Users can display comments in the user interface.
Live display	Allows users to compare multiple content streams for a specific topic or event.	Does not have this function.
Post saving	Allows users to save posts for subsequent analysis.	Does not have this function.
Weighting	Allows users to explore posts with a specific reaction (like, love, haha, etc.).	Does not have this function.
Events	Does not have this function.	Captures data from Facebook events.

Table 4: Comparison of CrowdTangle and Meta Content-Library (MCL)

7. Prospects

Further technical developments are required to allow the systematic recording of misinformation and disinformation. The next steps for the automated clustering of text documents applied here are **the validation and generalisation of the method for other use cases (e.g. other languages, subject areas, or platforms such as YouTube, TikTok and LinkedIn)**. Another aim in further developing the methodology lies in the automated assessment of the parameters used. These include the similarity threshold, the maximum time interval between the content to be compared, and sampling strategies for the resulting network in order to further improve the technical efficiency of the method in terms of both the required memory and computing speed.

This study has laid the foundation for the detection of disinformation and misinformation through the use of features inherent to actors or content. This was achieved using methods such as analysing the characteristics of specific accounts (e.g. dissemination patterns and network connections) as well as the way in which content is structured on posts (e.g. semantic similarity to known narratives and the use of certain key terms). Other features that indicate disinformation or misinformation should be analysed in this context. Features that do not significantly contribute to the identification of already

known disinformation and misinformation (e.g. fact checks that have already been carried out) are extremely relevant in this regard. Based on the potential of the actor-based approaches identified here, user behaviour could be examined for typical markers of prevailing disinformation or misinformation behaviour. **Another possibility that this project has opened up is the monitoring of platforms with regard to known disinformation and misinformation narratives: large language models (LLMs) could make it possible to identify both the narratives found here and other known narratives in other contexts.**

Furthermore, the **existing findings should be supplemented and supported by a further analysis of the actor categories in the sample presented.** The purpose of this supplementary analysis would be to continue investigations into the connection between narrative categories and actor groups. These findings and the results of this continued investigation of the present sample could then be compared with the contents of the total data set. An analysis of lists of the most successful posts (by reposts) and the corresponding actor categories, is likely to improve the evaluation of the results of this methodology within this extensive data set.

Endnotes

- 1 Holt, K., Ustad Figenschou, T., & Frischlich, L. (2019). Key Dimensions of Alternative News Media. *Digital Journalism*, 7(7), 860–869. <https://doi.org/10.1080/21670811.2019.1625715>
- 2 Schwaiger, L. (2022). Gegen die Öffentlichkeit: Alternative Nachrichtenmedien im deutschsprachigen Raum. Transcript. <https://www.transcript-open.de/isbn/6121> [07.03.2024], S. 11.
- 3 Vgl. Holt, K., Ustad Figenschou, T., & Frischlich, L. (2019). Key Dimensions of Alternative News Media. *Digital Journalism*, 7(7), 860–869. <https://doi.org/10.1080/21670811.2019.1625715>
- 4 Schwaiger, L. (2022). Gegen die Öffentlichkeit: Alternative Nachrichtenmedien im deutschsprachigen Raum. Transcript. <https://www.transcript-open.de/isbn/6121> [07.03.2024], S. 153.
- 5 Ibid.
- 6 Capstick, S. B. & Pidgeon, N. F. (2014) What is climate change scepticism? Examination of the concept using a mixed methods study of the UK public. *Global Environmental Change* 24, 389–401. <https://doi.org/10.1016/j.gloenvcha.2013.08.012>
- 7 Ibid.
- 8 Ibid.
- 9 Lewandowsky, S. et al (2015). Seepage: Climate change denial and its effect on the scientific community. *Global Environmental Change*. (33) 1–13. <https://doi.org/10.1016/j.gloenvcha.2015.02.013>
- 10 Lamb, W., Mattioli, G., Levi, S., Roberts, J., Capstick, S., Creutzig, F., Steinberger, J. (2020). Discourses of Climate Delay. *Global Sustainability*. (3), E17. doi:10.1017/sus.2020.13
- 11 Ibid.
- 12 Mudde, C. (2000). *The Ideology of the Extreme Right*. Oxford University Press.
- 13 Mudde, C. (2019). *The Far Right Today*. John Wiley & Sons, 5–7.
- 14 Ibid.
- 15 Gallagher, A. & O'Connor, C. (n.d.). *The Great Reset*. Institute for Strategic Dialogue. [The 'Great Reset' - ISD](https://www.isdglobal.org/isd-publications/the-great-reset/)
- 16 Strobl, N. (2021). Vom "Großen Austausch" zum "Great Reset" – Wie Verschwörungsideologien populär werden. Heinrich Böll Stiftung. [Vom "Großen Austausch" zum "Great Reset" – Wie Verschwörungsideologien populär werden | heimatkunde | Migrationspolitisches Portal der Heinrich-Böll-Stiftung](https://www.heinrich-boell-stiftung.de/de/verschoerungsideologien-populaer-werden)
- 17 Matlach, P. & Bundtzen, S. (2023). Die Grünen als Feindbilder während der Gaspriekrise 2022. Zweite Methodische Exploration im Projekt NOTORIOUS. Institute for Strategic Dialogue. <https://www.isdglobal.org/isd-publications/the-greens-as-enemies-during-the-gas-price-crisis-2022-second-methodological-exploration-in-the-NOTORIOUS-project/>
- 18 Bolt, N. & Haiden, L. (2019). Improving NATO Strategic Communication Terminology. Riga: NATO StratCom Centre of Excellence. <https://stratcomcoe.org/publications/improving-nato-strategic-communications-terminology/80>
- 19 Matlach, P. & Bundtzen, S. (2023). Die Grünen als Feindbilder während der Gaspriekrise 2022. Zweite Methodische Exploration im Projekt NOTORIOUS. Institute for Strategic Dialogue. <https://www.isdglobal.org/isd-publications/the-greens-as-enemies-during-the-gas-price-crisis-2022-second-methodological-exploration-in-the-NOTORIOUS-project/>
- 20 Gadinger, F., Jarzebski, S., Yildiz, T. (2014). Politische Narrative. Konturen einer politikwissenschaftlichen Erzähltheorie. In: Gadinger, F., Jarzebski, S., Yildiz, T. (eds) *Politische Narrative*. Springer VS, Wiesbaden.
- 21 Gallagher, A. Davey, J. & Hart, M. (2020). Key trends in QAnon activity since 2017. Institute for Strategic Dialogue. [The-Genesis-of-a-Conspiracy-Theory.pdf](https://www.isdglobal.org/isd-publications/the-gene-sis-of-a-conspiracy-theory.pdf)
- 22 Ziegler, A. (2015). On the relevance of ideological identification and environmental values for beliefs and attitudes toward climate change: An empirical cross-country analysis, MAGKS Joint Discussion Paper Series in Economics, No. 16-2015, Philipps-University Marburg, Faculty of Business Administration and Economics, Marburg.
- 23 Metag, J., Fuchslin, T., & Schäfer, M. S. (2017). Global warming's five Germanys: A typology of Germans' views on climate change and patterns of media use and information. *Public Understanding of Science*, 26(4), 434–451.
- 24 Ibid.
- 25 Lübke, C. (2024). Ansichten zur Existenz und den Ursachen des Klimawandels. Sozialbericht 2024. Bundeszentrale für politische Bildung. <https://www.bpb.de/kurz-knapp/zahlen-und-fakten/sozialbericht-2024/553427/ansichten-zur-existenz-und-zu-den-ursachen-des-klimawandels/>
- 26 Zandt, F. (2023, 29 März). Klimawandelskepsis in Deutschland. Statista. Online abrufbar unter: <https://de.statista.com/infografik/29590/glauben-an-menschengemachten-klimawandel/>, zuletzt abgerufen am 27.02.2025.
- 27 Ibid.
- 28 Blümel, C. (2024). Anfeindungen gegen Forschende. Deutsches Zentrum für Hochschul- und Wissenschaftsforschung. [Erste-Ergebnisse_Umfrage-zu-Anfeindungen-gegen-Forschende.pdf](https://www.dzhw.uni-koeln.de/de/Erste-Ergebnisse_Umfrage-zu-Anfeindungen-gegen-Forschende.pdf) (hiig.de)
- 29 Mandalka, T. (2023). Pöbeleien, Drohmails und Ekelbriefe. Tagesschau. [Feindbild Wissenschaft: Pöbeleien, Drohmails und Ekelbriefe | tagesschau.de](https://www.tagesschau.de/feindbild-wissenschaft/poebeleien-drohmails-und-ekelbriefe)
- 30 Haensel, P. (2024). Wo AfD und Junge Alternative gesichert rechtsextrem sind. RedaktionsNetzwerk Deutschland. <https://www.rnd.de/politik/wo-gelten-afd-und-junge-alternative-als-gesichert-rechtsextrem-und-was-bedeutet-das-BE-OYLLR67FCABBNQ6ESSRUZJWM.html>
- 31 Matlach, P. & Janulewicz, L. (2021). Kalter Wind von rechts: Wie rechts Parteien und Akteur:innen die Klimakrise zu ihren Gunsten missbrauchen. Institute for Strategic Dialogue. Abgerufen am 04.10.2024 von [Kalter Wind von Rechts: Wie rechte Parteien und Akteur:innen die Klimakrise zu ihren Gunsten missbrauchen - ISD-GERMANY \(isdgermany.org\)](https://www.isdgermany.org/)
- 32 Ibid.

- 33 Maharasingam-Shah, E. & Vaux, P. (2021). 'Climate Lock-down' and the Culture Wars: How COVID-19 sparked a new narrative against climate action. Institute for Strategic Dialogue. <https://www.isdglobal.org/wp-content/uploads/2021/10/20211014-ISDG-25-Climate-Lockdown-Part-1-V92.pdf>
- 34 Matlach, P. et al. (2022). Deutschland und der angebliche Klimalockdown. Institute for Strategic Dialogue. [Deutschland-und-der-angebliche-Klimalockdown-1.pdf](#)
- 35 Ibid.
- 36 Reimers, N. & Gurevych, I. (2019). Sentence-BERT: Sentence Embeddings using Siamese BERT-Networks. <https://doi.org/10.48550/arXiv.1908.10084>
- 37 Wang, L. et. al. (2024). Multilingual E5 Text Embeddings: A Technical Report. arXiv.org. <https://arxiv.org/abs/2402.05672v1>.
- 38 Rosvall, M. & Bergstrom, C.T. (2011). Multilevel Compression of Random Walks on Networks Reveals Hierarchical Organization in Large Integrated Systems. PLoS ONE 6, e18209. <https://doi.org/10.1371/journal.pone.0018209>
- 39 n.a. (2022). Mainstreaming und Radikalisierung in sozialen Medien. Bundesamt für Verfassungsschutz. https://www.verfassungsschutz.de/SharedDocs/publikationen/DE/zaf/2023-02-16-zaf-abschlussbericht.pdf?__blob=publicationFile&v=7
- 40 Gerster, L. et al. (2021). Stützpfiler Telegram. Wie Rechtsextreme und Verschwörungsideolog:innen auf Telegram ihre Infrastruktur ausbauen. Institute for Strategic Dialogue. <https://isdgermany.org/stuetzpfiler-telegram-wie-rechts-extreme-und-verschwoerungsideologinnen-auf-telegram-ihre-infrastruktur-ausbauen/>; Holnburger, J. (2023). Chronologie einer Radikalisierung. Wie Telegram zur wichtigsten Plattform für Verschwörungsideologien und Rechtsextremismus wurde. CeMAS. <https://cemas.io/publikationen/telegram-chronologie-einer-radikalisierung/>; Unzicker, K (2023). Misinformation: Herausforderung für die Demokratie. Einstellungen und Wahrnehmungen in Europa. Bertelsmann Stiftung. <https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/Misinformation-herausforderung-fuer-die-demokratie>
- 41 n.a (2023). Climate of Misinformation – Ranking Big Tech. CAAD. <https://caad.info/analysis/reports/climate-of-misinformation-ranking-big-tech/>; Biriukova, M., übersetzt von Jungbluth, S.-I. (2022). Falschinformationen auf Social-Media-Plattformen führen zu Handlungsverzögerungen beim Klimaschutz. Reset. <https://reset.org/falschinformationen-auf-social-media-plattformen-uber-den-klimawandel-fuehren-zu-handlungsverzogerungen-bericht/>
- 42 Wimmer, B. (2022). Was Elon Musk bei Twitter bereits verändert hat. Futurezone. [Was Elon Musk bei Twitter bereits verändert hat](#)
- 43 CeMAS. (2020). Telegram: Chronologie einer Radikalisierung. Center for Monitoring, Analysis and Strategy. <https://report.cemas.io/telegram/>
- 44 Heim, M. (2022). Ukraine-Konflikt: Debatte über Sanktionen und Waffenlieferungen. Bayerischer Rundfunk. [Ukraine-Konflikt: Debatte über Sanktionen und Waffenlieferungen | BR24](#)
- 45 Klinker, F. et. al. (2022). „Frieden statt ‚GRÜN!‘“ Rechte Instrumentalisierungen des Ukraine-Krieges gegen Klimapolitik und Energiewende bei Twitter. IDZ-Kurzanalyse. IDZ Jena. [„Frieden statt ‚GRÜN!‘“ Rechte Instrumentalisierungen des Ukraine-Krieges gegen Klimapolitik und Energiewende bei Twitter. IDZ-Kurzanalyse](#)
- 46 n.a. (2022). Rückblick auf ein Parlamentsjahr 2022 im Dauerkrisenmodus. Deutscher Bundestag. [Deutscher Bundestag - Rückblick auf ein Parlamentsjahr 2022 im Dauerkrisenmodus](#)
- 47 n.a. (2021). „Argumente der Verzögerung können psychisch sehr entlastend sein“. Klimafakten. [„Argumente der Verzögerung können psychisch sehr entlastend sein“ | klimafakten.de](#)
- 48 Zauner, D. (2023). Angriffe mit System. Frankfurter Rundschau. [Klimaleugnung: Angriffe mit System](#)
- 49 Matlach, P. & Janulewicz, L. (2021). Kalter Wind von Rechts: Wie rechte Parteien und Akteur:innen die Klimakrise zu ihren Gunsten missbrauchen Eine Analyse über falsche Fakten, Feindbilder und Desinformationsnarrative im Umfeld der Bundestagswahl 2021. Institute for Strategic Dialogue. <https://www.isdglobal.org/isd-publications/kalter-wind-von-rechts-wie-rechte-parteien-und-akteurinnen-die-klimakrise-zu-ihren-gunsten-missbrauchen-eine-analyse-uber-falsche-fakten-feindbilder-und-desinformationsnarrative-im-umfeld-der-bunde/>
- 50 Klimpel, L. (2021): Wenn Parteien ins Netz gehen. Tagesschau. <https://www.tagesschau.de/inland/btw21/digitaler-wahlkampf-101.html>
- 51 Metzger, N. (2024): AfD hängt alle anderen Parteien auf TikTok ab. Zdf. <https://www.zdf.de/nachrichten/politik/deutschland/afd-tiktok-erfolg-strategie-jugendliche-100.html>
- 52 Müller, T. (2024): Zahl der Social-Media-Nutzenden steigt auf 60 Prozent. In: Media-Perspektiven 28/2024. https://www.ard-media.de/fileadmin/user_upload/media-perspektiven/pdf/2024/MP_28_2024_ARD_ZDF-Medienstudie_2024_Zahl_der_Social-Media-Nutzenden_steigt_auf_60_Prozent.pdf
- 53 Ibid.
- 54 Bundtzen, S. (2023). How mainstream and 'alternative' media news headlines frame climate activism. Institute for Strategic Dialogue. [How mainstream and 'alternative' media news headlines frame climate activism - ISD](#)
- 55 n.a. (2023). Tote Radfahrerin: Klimaschützer nicht schuld. Zdf. <https://www.zdf.de/nachrichten/panorama/klimaschuetzer-radfahrerin-tod-gericht-100.html>
- 56 n.a. (2007). Dich Geschichte der RAF. Bundeszentrale für politische Bildung. [Die Geschichte der RAF | bpb.de](#)
- 57 (n.a.) (2022). Union fordert härtere Strafen für „Klima-Chaoten“. Faz.net. <https://www.faz.net/aktuell/politik/inland/letzte-generation-union-fordert-haertere-strafen-fuer-kli->

- ma-chaoten-18440253.html?fbclid=IwY2xjawE9KmBleHRu-A2FibQlxMAABHf5fsr19Phcs9rGBNpZFyPpfd5V78TKf6b25bS-IMx2lCMFAUX0UTY00n5g_aem_JuyP37CaaHej0yf5AcdZHA
- 58 Scherndl, G. (2022). Nein, die Klimabewegung Letzte Generation bekommt nicht 156.420 Euro staatliches Fördergeld. Correctiv. <https://correctiv.org/faktencheck/2022/11/22/nein-die-klimabewegung-letzte-generation-bekommt-nicht-156-420-euro-staatliches-foerdergeld/?lang=de>
- 59 Schwartz, K. (2022). Was die Durchsuchungen bedeuten. Tagesschau. [Razzien gegen Klimaaktivisten: Was die Durchsuchungen bedeuten | tagesschau.de](https://www.tagesschau.de/rausgerissen/gegen-klimaaktivisten-was-die-durchsuchungen-bedeutet-101.html)
- 60 Breyton, R. (2019). „Greta Thunberg steht für eine prophetische Botschaft“. Welt Online. <https://www.welt.de/politik/deutschland/plus192104093/Bischof-Heiner-Koch-Greta-Thunberg-steht-fuer-prophetische-Botschaft.html>
- 61 n.a. (2019). Erzbischof Koch: Wurde massiv verurteilt und beschimpft. Katholisch.de. [Erzbischof Koch: Wurde massiv verurteilt und beschimpft - katholisch.de](https://www.katholisch.de/erzbischof-koch-wurde-massiv-verurteilt-und-beschimpft)
- 62 Breher, N. (2019). Greta Thunberg: Keine Belege für systematische PR-Kampagne der Eltern und eines Unternehmers. Correctiv. [Greta Thunberg: Keine Belege für systematische PR-Kampagne der Eltern und eines Unternehmers - correctiv.org](https://www.correctiv.org/2019/09/04/greta-thunberg-keine-belege-fuer-systematische-pr-kampagne-der-eltern-und-eines-unternehmers)
- 63 n.a. (2023). Kein Wort in Thunberg-Tweet über Menschheitsende im Juni 2023.dpa. <https://dpa-factchecking.com/germany/230622-99-146304/> 30.09.2024; n.a. (2023). Posts distort 2018 Greta Thunberg tweet on climate danger. <https://apnews.com/article/fact-check-greta-thunberg-deleted-tweet-675395214080>
- 64 Gallagher, A. & O'Conner, C. (2023). The 'Great Reset' Explainer. Institute for Strategic Dialogue. <https://www.isdglobal.org/explainers/the-great-reset/>
- 65 Matlach, P. et al. (2022). Deutschland und der angebliche Klimalockdown. Institute for Strategic Dialogue. <https://isdgermany.org/deutschland-und-der-angebliche-klimalockdown/>
- 66 Maharasingam-Shah, E. & Vaux, P. (2021). 'Climate Lockdown' and the Culture Wars: How COVID-19 sparked a new narrative against climate action. Institute for Strategic Dialogue. <https://www.isdglobal.org/wp-content/uploads/2021/10/20211014-ISDG-25-Climate-Lockdown-Part-1-V92.pdf>
- 67 Jasser, G. & Hammer, D. (2021). How Authoritarians Erode Democracy Under The Guise Of Defending It: From the fascists of the early 20th Century to the modern Republican Party, those who seek to undermine democracy usually do so in the name of democracy. Rant Media. <https://rantt.com/how-authoritarians-erode-democracy-under-the-guise-of-defending-it>
- 68 Lauterbach, K. (2020). Klimawandel stoppen? Nach den Corona-Erfahrungen bin ich pessimistisch. Welt.de. <https://www.welt.de/politik/deutschland/article223275012/Kampf-gegen-Klimawandel-Lauterbach-wegen-Coronazeit-pessimistisch.html>
- 69 Matlach, P. et al. (2022). Deutschland und der angebliche Klimalockdown. Institute for Strategic Dialogue. Online abrufbar unter: <https://isdgermany.org/deutschland-und-der-angebliche-klimalockdown/>
- 70 King et al. (2022). Deny, Deceive, Delay: Documenting and Responding to Climate Disinformation at COP26 and Beyond. Institute for Strategic Dialogue. <https://www.isdglobal.org/wp-content/uploads/2022/06/Summative-Report-COP26.pdf>
- 71 Kramliczek, P & Rohrmeier S. (2022). Fürs Klima mit Holz heizen? Aiwangers Tipp im Faktencheck. Bayerischer Rundfunk. <https://www.br.de/nachrichten/bayern/fuers-klima-mit-holz-heizen-aiwangers-tipp-im-faktencheck,Rj81muu>
- 72 Scherndl, G. (2022). Nein, die Klimabewegung Letzte Generation bekommt nicht 156.420 Euro staatliches Fördergeld. Correctiv. <https://correctiv.org/faktencheck/2022/11/22/nein-die-klimabewegung-letzte-generation-bekommt-nicht-156-420-euro-staatliches-foerdergeld/>
- 73 Butter, M., Hatzikidi, K., Jeitler, C., Loperfido, G., & Turza, L. (Eds.). (2024). Populism and Conspiracy Theory: Case Studies and Theoretical Perspectives (1st ed.). Routledge.
- 74 n.a. (2020). Reform der Kfz-Steuer - Klare Anreize für eine klimafreundlichere Mobilität. Bundesministerium der Finanzen. [Bundesfinanzministerium - Reform der Kfz-Steuer - Klare Anreize für eine klimafreundlichere Mobilität; n.a. \(2020\). Ab 2021: CO2-Preis auf Heiz- und Kraftstoffe. Bundeszentrale für politische Bildung. \[Ab 2021: CO2-Preis auf Heiz- und Kraftstoffe | Hintergrund aktuell | bpb.de\]\(https://www.bpb.de/themen/energie-umwelt/230622-99-146304-1/1\)](https://www.bundesfinanzministerium.de/Content/View/All/230622-99-146304-1/1)
- 75 Weiske, C. (2021). Ist die Energiewende für die hohen Strompreise verantwortlich? BR24. [Ist die Energiewende für die hohen Strompreise verantwortlich? | BR24](https://www.br24.de/energie/2021/09/01/ist-die-energiewende-fuer-die-hohen-strompreise-verantwortlich/)
- 76 Quante, L. Willner, S.N., Otto, C. & Levermann, A. (2024). Global economic impact of weather variability on the rich and the poor. Nature Sustainability. [Global economic impact of weather variability on the rich and the poor | Nature Sustainability; n.a. \(2024\). Klimawandel verdoppelt Risiko für Extrem-Hochwasser. ntv. \[Kosten drohen zu eskalieren: Klimawandel verdoppelt Risiko für Extrem-Hochwasser - n-tv.de\]\(https://www.ntv.de/2024/09/01/klimawandel-verdoppelt-risiko-fuer-extrem-hochwasser/\)](https://www.nature.com/articles/s41467-024-05000-0)
- 77 Echtermann, A. (2020). Gesucht: Influencer*in, jung, rechts. Correctiv. [Gesucht: Influencer*in, jung, rechts - correctiv.org; Lauer, S. \(2021\). Wie der „Finanzexperte“ und Corona-Leugner „Silberjunge“ Antisemitismus befeuert. Belltower News. \[YouTube: Wie der „Finanzexperte“ und Corona-Leugner „Silberjunge“ Antisemitismus befeuert - Belltower.News\]\(https://www.belltowernews.com/2021/09/01/wie-der-finanzexperte-und-corona-leugner-silberjunge-antisemitismus-befeuert/\)](https://www.correctiv.org/2020/09/01/gesucht-influencer-in-jung-rechts)
- 78 Ismar, G., Fröhlich A. & Thewalt, A. (2020). Rechten Youtubern drohen Strafen: Das sind die Störer, die Altmaier beschimpften und Büros stürmten. Tagesspiegel. [Rechten Youtubern drohen Strafen: Das sind die Störer, die Altmaier beschimpften und Büros stürmten \(tagesspiegel.de\)](https://www.tagesspiegel.de/politik/rechten-youtubern-drohen-strafen-das-sind-die-stoerer-die-altmaier-beschimpften-und-bueros-stuermten/253275012.html)
- 79 Gallagher, A. & O'Connor, C. (2023). The "Great Reset." Institute

- for Strategic Dialogue. The 'Great Reset' - ISD (isdglobal.org)
- 80 n.a. (2015). Wer schweigt, ist schuld. Deutschlandfunk Kultur. <https://www.deutschlandfunkkultur.de/verschwoerungstheorien-ueber-das-bilderberg-treffen-wer-100.html>
- 81 Berechnung für einen Zeithorizont von 100 Jahren. Siehe dazu:
Smith, C., Z.R.J. Nicholls, K. Armour, W. Collins, P. Forster, M. Meinshausen, M.D. Palmer, and M. Watanabe (2021). The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity Supplementary Material. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07_SM.pdf
- 82 Laufmann, P. (2023). Faktencheck: Wie gefährlich ist das SF6-Gas in Windrädern? agrarheute. <https://www.agrarheute.com/energie/strom/faktencheck-gefaehrlich-sf6-gas-windraedern-613731>;
n.a. (2023). Faktencheck: SF6-Einsatz in Windenergieanlagen, Bundesverband WindEnergie. https://www.wind-energie.de/fileadmin/redaktion/dokumente/Aktuelles/Faktenchecks/20220825_-_BWE-Faktencheck_SF6.pdf
- 83 n.a. (2023). Stimmt nicht: Windräder: Bau setzt mehr CO2 frei, als durch Betrieb gespart wird. MDR Wissen. <https://www.mdr.de/wissen/faktencheck/faktencheck-windraeder-108.html>; n.a. (2023). Zahlen unrealistisch - Viele Windräder kommen ohne Balsaholz aus. Deutsche Presse Agentur. <https://dpa-factchecking.com/switzerland/230622-99-145338/>;
Kagermeier, E. (2023). #Faktenfuchs: Weniger Waldrodung für Windräder als behauptet. Bayerischer Rundfunk. <https://www.br.de/nachrichten/deutschland-welt/faktenfuchs-weniger-waldrodung-fuer-windraeder-als-behauptet,SskYxci>;
n.a. (2024). Energiebedingte Emissionen von Klimagasen und Luftschadstoffen. Umweltbundesamt. <https://www.umweltbundesamt.de/daten/energie/energiebedingte-emissionen#entwicklung-der-energiebedingten-treibhausgas-emissionen>
- 84 Kornatz, P. (2023). Nein, Windparks verursachen nicht Trockenheit und Dürre. Correctiv. <https://correctiv.org/faktencheck/2023/06/26/nein-windparks-verursachen-nicht-trockenheit-und-duerre/>;
Hübl, F. & Ley, J. (2024). #Faktenfuchs: Sterben Vögel durch Windräder? Bayerischer Rundfunk. <https://www.br.de/nachrichten/wissen/faktenfuchs-sterben-voegel-durch-windraeder,TAntN2S>;
Lückoff, J. (2023). #Faktenfuchs: Hartmanns Aussagen zum Windrad-Recycling im Check. Bayerischer Rundfunk. <https://www.br.de/nachrichten/wirtschaft/ludwig-hartmanns-aussagen-zum-windrad-recycling-im-check-faktenfuchs,TqrfKBw>
- 85 Schmidt, J. (2022). Alarmierende Studien: Windräder könnten Klimawandel verstärken und Dürren auslösen. Deutsche Wirtschaftsnachrichten. https://deutsche-wirtschafts-nachrichten.de/700177/Alarmierende-Studien-Windraeder-koennten-Klimawandel-verstaerken-und-Duerren-ausloesen?fbclid=IwY2xja-wFM85VleHRuA2FibQlxMAABHRN7o94oh2hfUXB0q87Br-1JeXZ-e7vhC5X9Nf1MeBxLkmj159eP8viGf8w_aem_yglR-jEKXXCA9J24YpaAx7A
- 86 Eckert, T. (2019). Keine Belege dafür, dass Windräder Zehntausende Vögel im Jahr „schreddern“. Correctiv. <https://correctiv.org/faktencheck/2019/06/19/keine-belege-da-fuer-dass-windraeder-zehntausende-voegel-im-jahr-schreddern/>;
Nicolaus, K. (2024). Nein, Frankreich hat Windräder nicht verboten. Correctiv. <https://correctiv.org/faktencheck/2024/08/09/nein-frankreich-hat-windraeder-nicht-verboten/>;
Lückoff, J. (2023). #Faktenfuchs: Hartmanns Aussagen zum Windrad-Recycling im Check. Bayerischer Rundfunk. <https://www.br.de/nachrichten/wirtschaft/ludwig-hartmanns-aussagen-zum-windrad-recycling-im-check-faktenfuchs,TqrfKBw>;
- n.a. (2024). Schattenwurf. Landesanstalt für Umwelt Baden-Württemberg. <https://www.lubw.baden-wuerttemberg.de/erneuerbare-energien/schattenwurf>
- 87 Miriam, S. (2019). #Faktenfuchs: Wenig CO2, große Wirkung. Bayerischer Rundfunk. <https://www.br.de/nachrichten/deutschland-welt/faktenfuchs-wenig-co2-grosse-wirkung,R-WwDmXy>
- 88 Kreienkamp, F. et al. (2021). Attributionsstudie: Klimawandel machte die Starkregenfälle wahrscheinlicher, die zu Überschwemmungen in Westeuropa führten;
n.a. (2023). Extremwetter durch Klimawandel - Mehr Hitze, Starkregen und Stürme. ARD-alpha. <https://www.ardalpha.de/wissen/umwelt/klima/wetter-meteorologie-hitze-starkregen-extremwetter-klimawandel-100.html>
- 89 Statista Research Department (2023). CO₂-Emissionen: Größte Länder nach Anteil am weltweiten CO₂-Ausstoß im Jahr 2022. Statista. <https://de.statista.com/statistik/daten/studie/179260/umfrage/die-zehn-groessten-co2-emittenten-weltweit/>;
Urmersbach, B. (2024). Anteile der 20 Länder mit der größten Bevölkerung an der Weltbevölkerung im Jahr 2023. Statista. <https://de.statista.com/statistik/daten/studie/381888/umfrage/anteile-der-laender-mit-der-groessten-bevoelkerung-an-der-weltbevoelkerung/>
- 90 Lamb WF, Mattioli G, Levi S, et al. (2020). Discourses of climate delay. Global Sustainability. 3 (17). doi:10.1017/sus.2020.13
- 91 King et al. (2022). Deny, Deceive, Delay: Documenting and Responding to Climate Disinformation at COP26 and Beyond. Institute for Strategic Dialogue. [Deny, Deceive, Delay: Docu-](https://www.instituteforstrategicdialogue.org/research/deny-deceive-delay)

- menting and Responding to Climate Disinformation at COP26 and Beyond - ISD
- 92 Breher, N. & Huth, K. (2019). Nein, Deutschland beeinflusst nicht 0,00004712 Prozent des CO₂-Anteils in der Luft. Correctiv. <https://correctiv.org/faktencheck/2019/07/30/nein-deutschland-beeinflusst-nicht-000004712-prozent-des-co2-anteils-in-der-luft/>
- 93 Wolf, A. (2019). Die Fragen des Robert I. an die Klimaschützer. Mimikama. <https://www.mimikama.org/die-fragen-des-robiert-i/>;
Stumpfe, M. (2019). #Faktenfuchs: Wenig CO₂, große Wirkung. Bayerischer Rundfunk. <https://www.br.de/nachrichten/deutschland-welt/faktenfuchs-wenig-co2-grosse-wirkung,R-WwDmXy>
- 94 Nicolaus, K. (2023). Nein, Deutschland beeinflusst nicht nur 0,000028 Prozent des weltweiten CO₂-Ausstoßes. Correctiv. <https://correctiv.org/faktencheck/2023/07/07/nein-deutschland-beeinflusst-nicht-nur-0000028-prozent-des-weltweiten-co2-ausstosses/>.
- 95 Ibid.
- 96 n.a. (2019). Die Sonne steuert unser Klima nicht, das CO₂. Für eine stabile, bezahlbare und sichere Energieversorgung – Gegen Ökodiktatur und pseudowissenschaftliche Untergangspanik. WerteUnion in Bayern. Abgerufen am 20.09.2024 von <https://konservativeraufbruch.de/klima-manifest-2020>, archiviert unter <https://archive.ph/kXI1F>
- 97 Göhring, A. (2020). Die NASA gibt zu, dass der Klimawandel natürlich ist und von der Sonne verursacht wird. <https://eike-klima-energie.eu/2020/02/10/die-nasa-gibt-zu-dass-der-klimawandel-natuerlich-ist-und-von-der-sonne-verursacht-wird>
- 98 n.a. (2020). Die Nasa schließt die Sonne als Ursache des Klimawandels aus. <https://www.presseportal.de/pm/133833/4507955>
- 99 n.a. (2023). Wenn Hass zu Gewalt wird. Deutschlandfunk. <https://www.deutschlandfunk.de/gewalt-gegen-klimaschuetzer-100.html>
- 100 n.a. (n.d). Art. 34 DSA – Risikobewertung. EU Digitalstrategie. [Art. 34 DSA - Risikobewertung \(eu-digitalstrategie.de\)](https://www.eu-digitalstrategie.de/artikel/34-dsa-risikobewertung)
- 101 Ibid.
- 102 n.a. (2024). MITTEILUNG DER KOMMISSION AN DAS EUROPÄISCHE PARLAMENT, DEN RAT, DEN EUROPÄISCHEN WIRTSCHAFTS- UND SOZIALAUSSCHUSS UND DEN AUSSCHUSS DER REGIONEN. Europäische Kommission. <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52024DC0091>
- 103 n.a. (2024). Underperforming & Unprepared. How have platforms responded to EU legislation to online safety so far? Climate Action Against Disinformation (CAAD). <https://caad.info/wp-content/uploads/2024/04/CAAD-Underperforming-and-unprepared-report-3.pdf>
- I <https://www.facebook.com/100045688904640/posts/5901933783201592/>
- II <https://www.facebook.com/100044312205419/posts/10159995453387752/>
- III <https://www.facebook.com/100064739677569/posts/2534543933488884/>
- IV <https://t.me/evahermanoffiziell/83392>
- V <https://www.facebook.com/100063523248173/posts/486780153040010/>
- VI <https://t.me/silberjungeoffiziell/687>
- VII <https://web.archive.org/web/20200308204516/https://konservativer-aufbruch.bayern/klima-manifest-2020/>

Appendix I: Search words

Climate, global warming, environment, Letzte Generation, Last Generation, XR, Extinction Rebellion, FFF, Fridays for Future, Luisa Neubauer, Greta Thunberg, Greenpeace, Just Stop Oil, Paris Agreement, Eco.

Either the respective platform's own search functions or analysis platforms were used to access the individual platforms. Queries were formulated according to the respective syntax. Searches were restricted to posts in the German language wherever possible.

CrowdTangle, an analysis platform operated by Meta was used for Instagram and Facebook. However, this is no longer in operation. At the time of data collection, Twitter (now X.com) still provided privileged data interface access for research work. This provided search access to the platform's entire archive. This access was also revoked as part of Elon Musk's takeover of Twitter. The Telegram data comes from a data collection tool established as part of the project. This continuously recorded 2,100 German-language channels from 2019 onward and fulfilled the role of a keyword search, which Telegram itself did not have. The channels were recorded in a data-driven manner using network-based analyses of redirects between channels.

