

SPECIAL SECTION: ANTI-GOVERNMENT EXTREMISM

The Not-So-Silent "Majority": An Automated Content Analysis of Anti-Government Online Communities

Bethany Leap,^{*} Michael H. Becker

Volume XVII, Issue I March 2023

ISSN: 2334-3745

The United States is facing an ongoing threat of political violence due to widespread antigovernment sentiment that has proliferated across social media platforms. Most saliently, these violent sentiments manifested in the January 6, 2021, attack on the US Capitol during the certification of the 2020 general election. This research extends prior work on the online mobilisation to offline violence by analysing the text of online discussions leading up to the January 6 attack. We focus this examination on two central questions. First, what are the key themes and topics discussed within and across two social media platforms? Second, how did these themes and topics change over time? Focusing on two far-right anti-government online communities, we explore how support for political violence, disinformation, and electoral outcomes emerge and change over time. Our findings provide insight into possible strategies to counteract misinformation and the temporal trajectory of escalating violent sentiment within and across online communities. Further, this study highlights the importance of collecting data prospectively and demonstrates the value of automated content analysis and text data in understanding anti-government extremist sentiments.

Keywords: social media, political violence, content analysis, text analysis, computational social science

^{*}Corresponding author: Bethany Leap, American University, email: bethanyjleap@gmail.com

Introduction

The attack on the US Capitol on January 6, 2021, while shocking, was not surprising. Despite congressional testimony by law enforcement shortly after the attack, there was ample evidence that violent anti-government sentiment had been brewing online in the weeks before and after the 2020 election in both public-facing and insular online communities.¹ As journalistic reporting,² congressional hearings,³ and courtroom documentation have shown,⁴ online communities in recent years have served as an important platform for the polarisation of individuals sympathetic to anti-government violence. On extremist web forums, these communities took shape over time and fuelled the January 6 attack as well as others.⁵ The evolving role of online communities has highlighted an important shift in the threat landscape for political violence and extreme anti-government sentiment alike.⁶ Since the January 6 attack, extreme anti-government attitudes have continued to manifest in online spaces, contributing to the so-called "freedom convoys" in Canada and the United States, and the violent attack on the federal government in Brazil.⁷

Though Telegram channels and other online gathering spaces have seen increasing use by social movements and political extremists alike,⁸ the January 6 attacks were most widely (and openly) discussed on two public web forums—Reddit, and TheDonald.win (hereafter, TheDonald).⁹ Prior research has identified these and similar web forums as sources of anti-government sentiment, as well as the proliferation of violent rhetoric linked to acts of extremist violence.¹⁰ While important prior research has focused on individual-level risk and posting behaviours,¹¹ few studies have examined broader patterns of online community rhetoric, and in particular, how rhetoric may shift before and after an incident of anti-government political violence.

Given the importance of online communities in forming collective identities and shaping attitudes and behaviours,¹² it is crucial to consider how community-level trends may shape views towards political violence. Analysing these communities using automated content analysis, specifically the Structural Topic Model (STM), allows us to identify prevalent topics of discourse in these communities and describe how these topics change over time. Likewise, describing shifts in how online communities discuss violent anti-government topics may yield insights for moderation on more closely monitored platforms, and suggest avenues for de-escalation or off-ramping resources on less restrictive platforms.

To better understand how users experienced the escalating sentiment leading up to the January 6 attack, we focus on answering two questions here. Firstly, what were the key themes and topics discussed within and across relevant communities on Reddit and on TheDonald? And secondly, how did these themes and topics change over time?

This study aims to expand this literature by exploring the key themes and topics discussed on two social media platforms home to individuals who hold anti-government views. To do so, we examine original data collected on more than 1.3 million posts across three discrete time periods. After conducting an automated content analysis of the user-generated posts, we draw comparisons of the key thematic findings over time. During this 122-day period, we identified several commonalities between the online communities; however, over time the rhetoric in these communities diverged. Key topics revealed included assertions of voter fraud, references

to the veracity of news media, conspiratorial claims, and discussion about a possible civil war. These findings yield insights into possible strategies to counteract misinformation and serve as a study of the temporal trajectory of escalating violent sentiment within and across online communities. Further, this study highlights the importance of collecting data prospectively and demonstrates the value of automated content analysis and text data in understanding anti-government extremist sentiment.

Background Literature: Extremist Use of the Internet

Since the widespread adoption of the Internet, extremist groups and violent social movements have exploited the newfound enhanced connectivity. For decades, extremists have coordinated members, entangled interested individuals, and mobilised to action.¹³ In the United States, this set of strategies was famously adopted by neo-Nazis, white supremacists, and anti-government extremists on the website "Stormfront".¹⁴ Like other shifts in the adoption of technology since the 1980s and 1990s, the use of the Internet has spread across movements that endorse violence and researchers have continued to examine the role of the Internet in extremist violence.¹⁵ To wit, extremist movements of diverse ideological milieu have taken advantage of the anonymity and ease of communication that the Internet offers.¹⁶

Scholars studying the overlap between extremism and the Internet have made significant progress in recent years.¹⁷ Studies have examined not only how the online activity of violent extremists may systematically differ from non-violent extremists,¹⁸ but computationally advanced tools have been developed to systematically analyse individual user activity for specific violent sentiment.¹⁹ Still other studies have examined user behaviour on forums associated with violent political and social movements.²⁰

Research has shown that extremist movements have already taken significant steps to find a place in more conventional online, and real-world spaces.²¹ As Miller-Idriss states, ²² the extreme has 'gone mainstream'. Not only have anti-government views proliferated on forums dedicated to violent movements, but also within communities on mainstream platforms such as Reddit.²³ Moreover, Gaudette and colleagues found that Reddit's algorithms that facilitate user engagement (indicated as sharing and endorsing posts and content) were leveraged to promote extreme views and content directed at perceived outgroups.²⁴ In other words, extremist views are present and popular on mainstream sites.

In addition to the value of studying extremist forums, we suggest that the significantly greater traffic observed on mainstream platforms presents an important opportunity to understand the process of socialisation to violent anti-government extremist beliefs.²⁵ To a large extent, web traffic on password-protected communities is limited, and those communities 'select out' individuals who do not already hold extreme views.²⁶ To this end, the process of socialisation and the adoption of extremist attitudes has yet to be captured. While prior work has yielded important contributions to our understanding, it presents a logical point of departure to examine how public online communities collectively form environments that facilitate the production of anti-government political violence.

Publicly accessible forums provide an 'introductory course' in anti-government sentiment and the far right, sensitising users to the arguments that form the ideological basis of these movements—an essential step in forming communities that endorse political violence.²⁷ Accordingly, shifts observed in the focus of these communities may demonstrate the process of collective identity formation, rather than the consolidation of already-held views.²⁸ To this end, research has yet to examine the ways that salient anti-government themes permeate an online community's discourse and how these communities react to the perpetration of anti-government violence.

The present study aims first to understand the key themes and topics discussed within, and across relevant communities on Reddit and TheDonald. Secondly, we describe how these themes and topics changed over time.

Automated content analysis is a valuable tool for accomplishing such tasks. Described in Grimmer and Stewart,²⁹ automated content analysis refers to the machine analysis of the content of texts. Briefly, in lieu of manual examination of documents and coding of salient themes, automated content analysis allows researchers to analyse documents, extract themes based upon the frequencies of key terms as well as the proximity of key terms and phrases in each document, and classify those documents using their linguistic similarities to other documents.³⁰ While automated content analysis does not fully replace human coding of topics, it is an extremely useful tool for topic experts to summarise large amounts of text without the costs associated with traditional content analysis.

Data Data Sources and Extraction Methods

To address these two questions, we use data that were collected in real time from two web forums known for hosting incendiary and violent anti-government views (namely, Reddit and TheDonald). These data were collected prospectively beginning October 14, 2020, and continuing across three distinct phases: (1) in the weeks leading up to the 2020 US presidential election (October 2020–November 3, 2020), (2) the period between election day and the January 6 insurrection at the US capitol (November 3, 2020–January 6, 2021), and (3) the period following the insurrection through the first days of the Biden presidency (January 6, 2021–January 31, 2021).

Reddit

Reddit is one of the most popular websites on the Internet, reporting more than four billion site visits in March 2022 according to a third-party digital advertising firm.³¹ The website is structured as a collection of individual communities, or *subreddits*. Users can choose to subscribe to subreddits, and they interact with the forums by posting links to images/videos/news stories/ websites, commenting on the content posted by others, and by 'upvoting' or 'downvoting' links

and comments of other users.³² The site is home to over 100,000 active subreddit communities ranging in interest from political engagement to sports, food, and entertainment.³³

The data for this project include text scrapes from four subreddits communities that, at the time of scraping, held politically conservative, conspiratorial, and anti-government political viewpoints related to the 2020 US presidential election (r/Conservative, r/Donald_Trump, r/ DonaldTrump, r/Trump). Specifically, the data collected included the front-page posts of each subreddit, and user comments associated with each of those posts. This constituted 24–30 posts and thousands of comments per day. In total across the period, we collected 6,085 posts and 420,902 comments. Collectively, these data provide an initial impression of how modal users experienced the subreddit communities on a day-to-day basis.

TheDonald

By comparison, TheDonald is a smaller, more insular, and more ideologically extreme community than Reddit.³⁴ Structured as a link-aggregator (like Reddit), TheDonald was originally founded as the off-Reddit forum for individuals who were members of the r/The_Donald community and found Reddit's moderation and policies too restrictive.³⁵ As with the Reddit community data, data from TheDonald were automatically scraped daily from October 14–January 31 and include the posts that appeared on the front page of the website and all associated comments.³⁶ Across the period, this amounted to 6,062 posts and 928,759 comments.

In total, our data represent more than 1.3 million comments across the two web forums. In this study, we focus on aggregate trends in user comments using automated content analysis and generating longitudinal structural topic models (STMs).

Methods

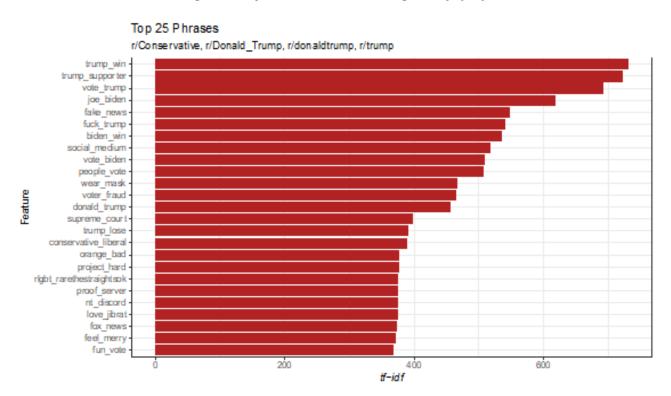
Before analysing user comments, we applied pre-processing steps to the data to ensure standardisation among the documents. This pre-processing is necessary to satisfy the Bag-of-Words (BoW) assumption that underlies all unsupervised text classification methods; mainly, each document is composed of a set of words, where the order and structure of those words are not as important as the words themselves.³⁷ The pre-processing steps include: tokenisation, which breaks each text into a string of individual words; transforming all words to lowercase; removing punctuation and stop words, or common words which can negatively impact the classification process; and lemmatisation, which reduces each word to its linguistic root.³⁸ After the texts have been pre-processed, we created a document-term matrix (DTM), which is a sparse matrix representation of the word frequencies within *each* document, using the dictionary of words found across *all* documents. Because analysing documents at the "word" level omits valuable context information on the relationships between words, we tokenised words into bigrams (two-word pairs).

For the analysis of these data, we use the structural topic model (STM) originally developed by Roberts, Stewart, Tingley, and Airoldi.³⁹ STMs allow researchers to include metadata as co-variates, which helps to explain topic prevalence and content;⁴⁰ this is particularly useful in our

case as it allows us to account for changes in topic content and topic importance over both the sampling period and original data source. All pre-processing and data analyses were conducted in R using the quanteda and STM packages, respectively.⁴¹

Results *Descriptive Results*

Figures 1 and 2 present the top twenty-five bigram phrases for the four subreddit communities and TheDonald respectively. Unsurprisingly, during this period both forums focused on the 2020 general election and the electoral prospects of Donald Trump. Likewise, the phrase "fake news" was present on both forums hinting at a shared lexicon among users across websites. While these figures show the similarities across the top bigrams of the two corpora, they remain a coarse tool for analysis. To examine the higher-order themes within each community and over time, we conducted a series of longitudinal STMs.





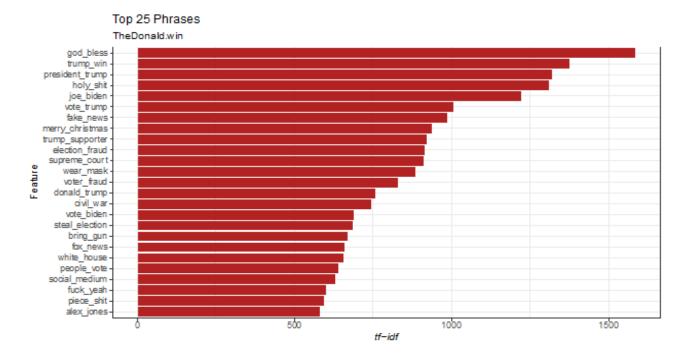


Figure 2. Top 25 TheDonald Phrases, weighted by tf-idf

Topic Model Results

The research questions in this study focus not only on specific terms, but on broader topics discussed on the respective forums and shifts in those topics across the three periods. After running preliminary diagnostic analyses on the number of topics to include for the STM, the best values of metrics associated with model fit (held-out likelihood and residuals) and topic quality (semantic coherence and exclusivity) were achieved for both data sources when K = 10. Models for each data source reached convergence, and topic content was stable across several iterations.

Reddit

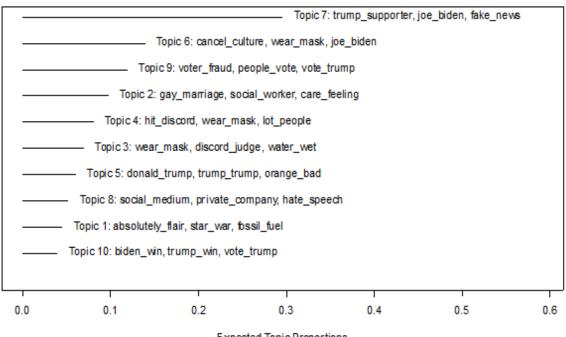
Table 1 shows the contents of the ten topics found in the Reddit data,⁴² and Figure 3 shows the average topic proportions of the corpus. Topic 7, labelled Election (Pro-Trump), is the most prevalent topic, expected in nearly 30 percent of the corpus. Given that the data sources making up the corpus are conservative subreddits, it makes sense that the largest proportion of texts would fall into this category.

Topic	Label	Key Words
1	Environment	absolutely_flair, star_war, fossil_fuel, gender_program, solar_wind, lot_money, white_house
2	Social Policies	gay_marriage, social_worker, care_feeling, project_hard, vote_american, marriage_legalize
3	Covid Restrictions	wear_mask, discord_judge, water_wet, white_privilege, public_school, strip_club, son_bitch
4	Democrat Rule	hit_discord, wear_mask, lot_people, middle_east, trump_supporter, climate_change, white_house
5	Left's Obsession with Trump	donald_trump, trump_trump, orange_bad, mail_ballot, election_day, vote_trump, trump_win
6	Cancel Culture	cancel_culture, wear_mask, joe_biden, lot_people, read_article, supreme_court, ted_cruz
7	Election (Pro-Trump)	trump_supporter, joe_biden, fake_news, support_trump, trump_win, white_supremacist, fox_news
8	Social Media Censorship	social_medium, private_company, hate_speech, freedom_speech, twitter_facebook, facebook_twitter, medium_company
9	Voter Fraud	voter_fraud, people_vote, vote_trump, supreme_court, trump_win, vote_biden, biden_win
10	Election (General)	biden_win, trump_win, vote_trump, people_vote, wear_mask, vote_biden, voting_machine

Table 1. Reddit Topics, Themes, and Keywords

Figure 3. Average Topic Proportions of Reddit Data

Top Topics: Reddit



Expected Topic Proportions

Topic 6, labelled Cancel Culture, has the second-highest average topic proportion, albeit at 15 percent, which is roughly half the prevalence of the leading topic. Cancel Culture is followed by Topic 9, Voter Fraud, which is expected in around 13 percent of the comments.

Topic 2, labelled Social Policies, and Topic 4, labelled Democrat Rule, were the fourth- and fifth-

most prevalent topics, each expected in roughly 10 percent of the corpus. These two topics appear similar on the surface; without additional context, terms related to same-sex marriage could plausibly fall into a topic about society under a Democrat-controlled government. However, the comments focused on gay marriage almost exclusively referred to the nomination and confirmation of Amy Coney Barrett to the Supreme Court and the hope that a conservative supermajority would overturn the precedent set by Obergefell v. Hodges. Conversely, the terms in Democrat Rule were overwhelmingly used in a fearmongering context, with comments threatening mask mandates, criminalising red meat, gun control leading to anarchy, and weak foreign policy if the Democrats gained power. The remaining five topics and labels are outlined in Table 1.

Figures 4 and 5 show the popularity of the identified trends over time. For all figures, the first vertical line indicates the 2020 general election, and the second vertical line indicates the January 6, 2021, attack.

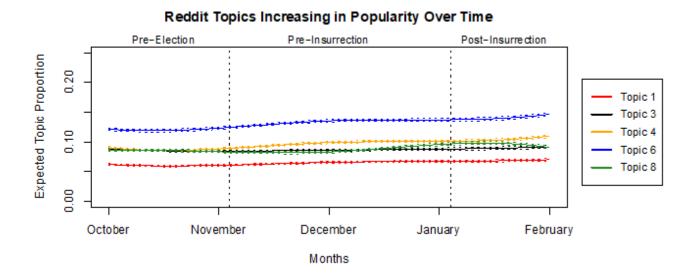
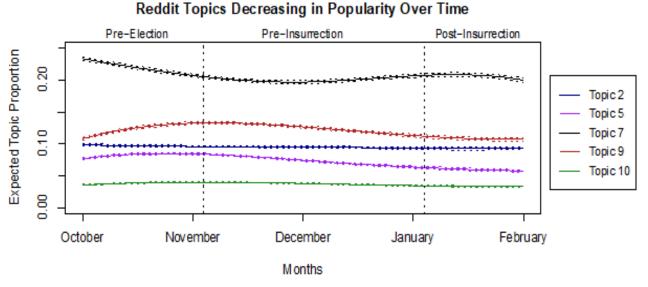


Figure 4. Reddit Topics Increasing in Popularity Over Time

As expected, Topic 7 (Election (Pro-Trump)) peaks in the month of October, dips in the weeks following the election, and increases slightly in the leadup to the January 6 insurrection. Topic 8 (Social Media Censorship) also trends how we anticipated, reaching its highest expected topic proportion value immediately following the mass removal of accounts believed to have contributed to the January 6 attack. In contrast, Topic 6 (Cancel Culture) steadily increases over the three periods, reaching its peak at the end of the sample period. This echoes several statements made by Republican politicians in the period following the January 6 insurrection, namely Congresswoman Marjorie Taylor Greene, Congressman Jim Jordan, and Senator Ted Cruz. Voter Fraud (Topic 9) was a very popular theme in the weeks leading up to and following the 2020 election, but its popularity tapered off towards the end of December.



Addit Tanias Dassassing in Danulasity Over Time

Figure 5. Reddit Topics Decreasing in Popularity Over Time

TheDonald Results

Table 2 and Figure 6 show the detailed content makeup and average proportion of the corpus for each topic on TheDonald, respectively.

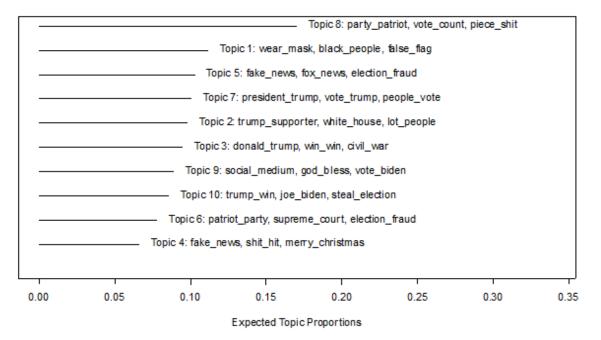
Topic	Label	Key Words
1	Pre-Election	<pre>wear_mask, black_people, false_flag, electoral_college, people_people, chris_wallace, vote_election</pre>
2	Trump Mobilization	trump_supporter, white_house, lot_people, vote_vote, white_people, election_night, change_mind
3	Civil War	civil_war, donald_trump, win_win, trump_trump, trump_vote, trump_president, white_supremacy
4	Anti-MSM	fake_news, shit_hit, merry_christmas, laugh_loud, fox_news, answer_question, bag_dick
5	Fake News	fake_news, fox_news, election_fraud, supreme_court, pay_attention, voter_fraud, presidential_election
6	Voter Fraud	patriot_party, supreme_court, election_fraud, voter_fraud, upvote_upvote, win_election, trump_fight
7	Election (Pro-Trump)	president_trump, vote_trump, people_vote, election_day, biden_win, holy_shit, american_people
8	Election Conspiracies	party_patriot, vote_count, piece_shit, fight_trump, alex_jones, lin_wood, voting_machine, american_people
9	Qanon	social_medium, god_bless, vote_biden, trust_plan, trump_lose, time_time, absentee_ballot
10	Election (General)	<pre>trump_win, joe_biden, steal_election, white_supremacist, electoral_vote, china_virus, vice_president</pre>

Table 2. TheDonald Topics, Themes, and Keywords

As expected, the topics found in the TheDonald corpus were more extreme than those in the Reddit corpus. Topic 8, labelled Election Conspiracies, had the highest average topic proportion

at around 17 percent. Although this finding was expected, it is concerning that content centred around spreading disinformation from Alex Jones and Lin Wood, two well-known conspiracy theorists who both propagated the "Big Lie." Topic 1, labelled Pre-election, had the second-highest average topic proportion at 12 percent. These posts consisted of comments ranging from Chris Wallace's handling of the Presidential Debates, tasteless jokes about questions related to the Black Lives Matter movement, and forecasting the impact of various state election results on the overall electoral college count.

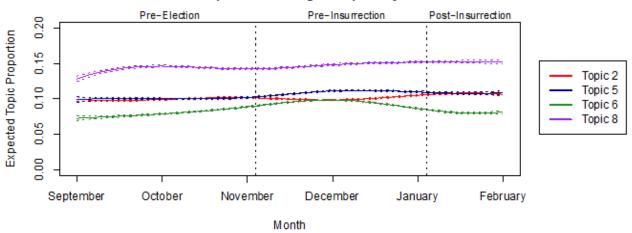
Figure 6. Average Topic Proportions of TheDonald Data



Top Topics: The.Donald

Topic 5 (Fake News), Topic 7 (Election [Pro-Trump]), Topic 2 (Trump Mobilization), and Topic 3 (Civil War) all had average topic proportions hovering around 10 percent. Again, it is alarming to see comments calling for a civil war upon a Trump loss hold as much weight as those simply expressing support for President Trump. Equally as worrying is the prevalence of Topic 9, labelled QAnon; although its average topic proportion is not within the top five, comments belonging to this theme can still be found in around 10 percent of the corpus.





TD Topics Increasing in Popularity

Other than a small decrease in the immediate lead-up to the 2020 election, Election Conspiracies (Topic 8) sees a steady rise in average topic proportion across the temporal domain. This trend makes sense given Trump's and his supporters' refusal to accept the results of the election, which resulted in the violent attempt to overturn the election. Topic 5 (Fake News) peaks in the period between the 2020 election and the January 6 insurrection, which again is supported by the Trump campaign's refusal to concede the 2020 election. Notably, Voter Fraud (Topic 6) reaches its peak expected topic proportion values in the pre-insurrection period, which was fuelled by the accusations from the Trump campaign of widespread voter fraud.

Naturally, Topics 1, 7, and 10 (Pre-election, Election (Pro-Trump), and Election (General), respectively) all reached their peaks in the pre-election period, then gradually decreased over the remainder of the time frame. Interestingly, the topic that would make the most sense to reach its peak in the Pre- or Post-insurrection periods saw its highest expected topic proportion in the Pre-election period (Topic 3, Civil War).

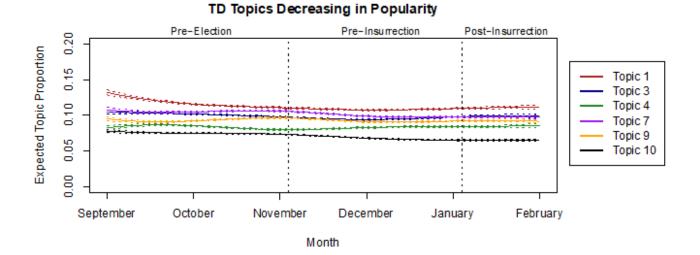


Figure 8. TheDonald Topics Decreasing in Popularity

Discussion

This study presents novel empirical evidence on the key themes discussed across communities on two widely used social media platforms that endorsed violent anti-government rhetoric leading up to the January 6, 2021, insurrection. These findings suggest that there remains a great deal to be learned from examining how online communities discuss events, the degree to which they are responsive to news, rhetoric from elites, and the pervasive reach of disinformation. In this study, we applied an underutilised strategy to a novel data set of user comments across two web forums representing online communities that endorsed anti-government extremist attitudes and violence.

Key Themes and Topics

Overall, we found a mixture of convergence and divergence in the core themes observed across Reddit and TheDonald. Within the Reddit communities, we identified ten core themes, with the greatest focus on support for Donald Trump in the 2020 election. This tracked closely with salient issues online over the period of study and was also present among the top five themes on TheDonald. Moreover, we find that both communities had at least one core theme regarding Voter Fraud; however, rhetoric on TheDonald extended to conspiratorial allegations of systematic election fraud, whereas the Reddit communities expressed a tamer form of scepticism towards the election.

Unsurprisingly, themes identified on TheDonald trended towards more extreme and conspiratorial events and news coverage over the period. Notably—user comments and replies focused on conspiracy theories and the primary news sources cited included Project Veritas and Gateway Pundit—sources of disinformation.⁴³ Interestingly, the spread of average topic proportions was much tighter across TheDonald than Reddit, with only a 10 percent difference between the most prevalent and least prevalent topics. With topic labels like Election Conspiracies, Civil War, and QAnon, this suggests that a large amount of content found on TheDonald could espouse extremist rhetoric containing anti-government sentiment and disinformation. Moreover, the similarities in terms found between benign topics, like Election (Pro-Trump), users rallying behind their leader (Trump Mobilization), and comments calling for anti-government violence (Civil War), are cause for concern. Together, this highlights the importance of studying a wide range of online communities, and in particular, communities that may appear to hold less-extreme attitudes. As prior work has shown, the mainstreaming of extremist ideas and the funnelling of users from more populated and closely monitored platforms to progressively more concerning content is a deliberate and strategic choice.⁴⁴

In addition to meaningful differences observed across platforms, we also identified important thematic variation over time—largely tracking with salient events for each period. Themes related to the 2020 presidential election across both platforms reached their peaks in the pre-election period, while themes associated with mobilization for Trump, voter fraud, and election conspiracies increased in the period between the 2020 election and the January 6 insurrection. Topics related to social media censorship also followed trends in broader media discourse, reaching its peak in the post-insurrection period after thousands of users were suspended from Twitter, Facebook, and Reddit.⁴⁵

We found that the distribution of the most extreme topic in TheDonald, Civil War, showed two identifiable peaks within these data; that is, it increased leading up to the 2020 election, decreased immediately following the election, and increased again. This suggests that calls for anti-government violence increased in the lead-up to both the 2020 presidential election and the January 6 insurrection. Despite seeing an increase in the prevalence of Civil War comments before January 6, the topic never reached its peak prevalence value achieved in mid-October. This is an interesting observation given the increasingly hostile political climate through the pre- and post-insurrection periods; thus, future work should explore this puzzling trend.

Limitations

Though this study provides a step forward in understanding trends and differences across online communities that traffic in anti-government rhetoric, we acknowledge important limitations to our findings. Firstly, due to the inherent user anonymity of the platforms studied, we recognise that there is some risk associated with 'big talk' on web forums. As a result, users both on Reddit and TheDonald may have felt emboldened to endorse more extreme views than they held. This has implications for the naïve assessment of 'risk' on these platforms since absent context it may be nigh impossible to determine whether a post reflects genuine violent intent, escalatory showboating, trolling, or sarcasm. All the same however, we assert assessing aggregate trends remains important, particularly as users form impressions of the ideological stance of the community writ large based on what they observe—regardless of the veracity of those opinions.

Likewise, this study was restricted to two publicly facing (non-password-protected) web forums. As prior research and reporting from non-government organiations has shown, evidence of attitudinal and behavioural radicalisation abounds on private platforms that require users (and indeed, observers) to access content with specific credentials.⁴⁶ Though that is the case, these private sites tend to be smaller and represent more ideologically homogeneous and extreme communities. Accordingly, our findings reflect the broader experience of individuals that are first being introduced to anti-government extremist attitudes. Much of what we know about radicalisation indicates that such individuals do not go on to participate in extremist behaviour (violent or otherwise), and thus our findings yield important background information for others who investigate why some may 'turn away' from extremist movements.

Next, while our analyses captured themes, and demonstrates when shifts in those themes occurred, we did not capture granular or more ephemeral points of focus in the communities. As a result, we do not suggest individual trajectories of attitudinal radicalisation on the forums, but broader trends on the sites. As noted above, prior research has made important steps in examining individual posting behaviour,⁴⁷ and though outside the scope of this study, future research should explore these data for similar trends.

Finally, we recognise that the online environment leading up to the January 6 attack represents a distinct socio-political moment in the history of the United States. Since the attack, the online communities that facilitated and perpetrated the violence have shifted their behaviour, and in many cases, observed political and legal sanctions.⁴⁸ As such, this study represents sentiment from a uniquely incendiary period online in the United States, and not necessarily a generalisable pattern of facts to other anti-government extremist online movements in other countries or contexts.

Practical Implications, and Future Directions

Despite these limitations, this study yields practical knowledge into anti-government extremism on publicly accessible web forums. First, while Reddit has been critiqued for the light-handed moderation (and poor infrastructure of moderation) on the platform,⁴⁹ we observed instances of enforcement of community and site rules (via the removal of posts). By contrast, no moderator actions to enforce the limited community standards on TheDonald were observed across the entire period.⁵⁰ Taken in conjunction with the findings above, this hints at the role that rules of conduct and community guidelines may have in shaping user behaviour, and the possible specific or general deterrence benefits of the visible enforcement of these rules.⁵¹

Secondly, the shared lexicon and crossover of major topics (and linked sources) between the two platforms suggests that members of these communities may 'travel in the same circles' online. Accordingly, we suggest that research explore whether anti-disinformation and violence-prevention interventions on one platform may yield a diffusion of benefits in associated or networked communities. Critically however, any such interventions should bear in mind the existing body of research on digital and community-based violence prevention and P/CVE work.⁵²

Beyond these general pieces of guidance, the identification of key themes on both Reddit and TheDonald provides a logical point of departure for subsequent research in this area. Firstly, researchers should continue to explore how individual sentiment shifted across the periods leading up to January 6 as well as drawing comparisons to other relevant acts of anti-government extremism. Moreover, future work should examine how rhetoric online shifted in response to specific communication by political elites; that is, how do online communities respond to solicitations for protests, and does community response vary depending on the characteristics of the platform and users? Additionally, while this piece sought to describe shifts over time, more work should consider specific temporal cut points that produce statistically reliable shifts in topics or community rhetoric. Finally, given the disparity in the anti-government rhetoric and trends observed across these two platforms, future research should consider the impact of moderation on web forums, and how enforcement of community norms may shape the sanctioning or endorsement of violent views.

In closing, recent events have shown that there is significant power in the ability of online communities to shape a social movement and direct it to violent ends. Explicit calls to violence were observed in this study. however they represented a distinct minority of the topics observed even among the more extreme of the two online communities studied. However, the spread of violent anti-government rhetoric online remains an evolving risk, and just as communities rally around leaders in the real world, the risk posed by a minority of violent voices online should not be discounted.

Bethany Leap is a doctoral student at American University in the Department of Justice, Law and Criminology. Her research focuses on developing and improving the methods and data used to understand and predict radicalisation to violent extremism, specifically in the areas of missing data and text analysis.

Michael H. Becker is a doctoral student at American University in the Justice, Law and Criminology department. His research examines individual and group factors associated with support for, and participation in violent extremism, process and outcome measures in P/CVE programming, and novel strategies of data collection. His work has been featured in the Proceedings for the National Academy of Science, the European Journal of Criminology, Terrorism and Political Violence, and Studies in Conflict and Terrorism.

Endnotes

1 Atlantic Council's DFRLab, "#StopTheSteal: Timeline of Social Media and Extremist Activities Leading to 1/6 Insurrection," Just Security, February 10, 2021, https://www.justsecurity.org/74622/stopthesteal-timeline-of-so-cial-media-and-extremist-activities-leading-to-1-6-insurrection/; Aaron C. Davis, "Warnings of Jan. 6 Violence Preceded the Capitol Riot," Washington Post, October 31, 2021, https://www.washingtonpost.com/politics/inter-active/2021/warnings-jan-6-insurrection/.

2 Dan Barry and Sheera Frenkel, "Be There. Will Be Wild!': Trump All but Circled the Date," *The New York Times*, January 7, 2021, sec. US, https://www.nytimes.com/2021/01/06/us/politics/capitol-mob-trump-supporters. html; Philip Bump, "Analysis | Unpacking How Trump Primed Jan. 6's Most Dangerous Weapon: The Mob," *Wash-ington Post*, March 21, 2022, https://www.washingtonpost.com/politics/2022/03/21/unpacking-how-trump-primed-jan-6s-most-dangerous-weapon-mob/; Davis, "Warnings of Jan. 6 Violence Preceded the Capitol Riot"; Craig Timberg, "Gallows or Guillotines? The Chilling Debate on TheDonald.Win before the Capitol Siege.," *Wash-ington Post*, April 15, 2021, https://www.washingtonpost.com/technology/2021/04/15/thedonald-capitol-at-tack-advance-democracy/.

3 Mark Satter, "Hearing on Extremism in the Military Prompts Partisan Broadsides," Roll Call, October 13, 2021, https://www.rollcall.com/2021/10/13/hearing-on-extremism-in-the-military-prompts-partisan-broadsides/.

4 Program on Extremism, "Capitol Hill Siege Cases," July 3, 2022, https://extremism.gwu.edu/capitol-hill-siege-cases.

5 Timberg, "Gallows or Guillotines?"; Craig Timberg and Drew Harwell, "TheDonald's Owner Speaks out on Why He Finally Pulled Plug on Hate-Filled Site," *Washington Post*, February 5, 2021, https://www.washingtonpost.com/technology/2021/02/05/why-thedonald-moderator-left/.

6 Moonshot, "From Shitposting to Sedition - a Report on the 2020 US Presidential Election.," Moonshot, February 1, 2021, https://moonshotteam.com/from-shitposting-to-sedition/. Dustin Jones, "What Is the 'great Replacement' and How Is It Tied to the Buffalo Shooting Suspect?" *NPR*, May 16, 2022, sec. Race, https://www.npr.org/2022/05/16/1099034094/what-is-the-great-replacement-theory; Ellie Silverman and Peter Hermann, "Freedom Convoy' Spinoff Aims for D.C. Region This Weekend. Here's What You Need to Know.," Washington Post, March 3, 2022, https://www.washingtonpost.com/dc-md-va/2022/03/03/dc-peoples-convoy-beltway-protest/; Paul Vieira, "What Is the Freedom Convoy? Trucker Protests in Canada Explained," WSJ, February 24, 2022, https://www.wsj.com/articles/freedom-convoy-canada-trucker-protest-what-11644441237.

7 Joshua Goodman, "Brazil Rioters Plotted Openly Online, Pitched Huge 'Party," *AP NEWS*, January 12, 2023, https://apnews.com/article/jair-bolsonaro-technology-brazil-government-b330b374f679f5e5f993d0f5e92f9434.

8 Raphael Gluck, "Islamic State Adjusts Strategy to Remain on Telegram," *GNET* (blog), February 6, 2020, https://gnet-research.org/2020/02/06/islamic-state-adjusts-strategy-to-remain-on-telegram/; Massimo La Morgia et al., "Uncovering the Dark Side of Telegram: Fakes, Clones, Scams, and Conspiracy Movements" (arXiv, November 29, 2021), https://doi.org/10.48550/arXiv.2111.13530; Ernie Piper, "New Telegram Research Shows QAnon 'Largest Extremist Group' Online," July 28, 2021, https://www.logically.ai/articles/new-telegram-research-shows-qanon-largest-extremist-group-online.

9 Bump, "Analysis | Unpacking How Trump Primed Jan. 6's Most Dangerous Weapon"; Timberg, "Gallows or Guillotines?"; Timberg and Harwell, "TheDonald's Owner Speaks out on Why He Finally Pulled Plug on Hate-Filled Site."

10 Tiana Gaudette et al., "Upvoting Extremism: Collective Identity Formation and the Extreme Right on Reddit," *New Media & Society*, September 12, 2020, https://doi.org/10.1177/1461444820958123; Ryan Scrivens et al., "Triggered by Defeat or Victory? Assessing the Impact of Presidential Election Results on Extreme Right-Wing Mobilization Online," *Deviant Behavior*, August 12, 2020, https://doi.org/10.1080/01639625.2020.1807298; Ryan Scrivens et al., "Detecting Extremists Online: Examining Online Posting Behaviors of Violent and Non-Violent Right-Wing Extremists," September 16, 2021, https://resolvenet.org/research/detecting-extremists-online-examining-online-posting-behaviors-violent-and-non-violent.

11 Kurt Braddock et al., "Engagement in Subversive Online Activity Predicts Susceptibility to Persuasion by Far-Right Extremist Propaganda," *New Media & Society*, February 10, 2022, 14614448221077286, https://doi.org/10.1177/14614448221077286; Gabriel Hine et al., "Kek, Cucks, and God Emperor Trump: A Measurement Study of 4chan's Politically Incorrect Forum and Its Effects on the Web," *Proceedings of the International AAAI Conference on Web and Social Media* 11, no. 1 (May 3, 2017): 92–101, https://arxiv.org/abs/1610.03452; Ryan Scrivens, "Exploring Radical Right-Wing Posting Behaviors Online," *Deviant Behavior*, April 26, 2020, 1–15, https://doi.org/10.1080/01639625.2020.1756391; Scrivens et al., "Detecting Extremists Online." few studies have provided empirical evidence to this effect. To redress this gap, we performed two studies in which we explored the relationship between subversive online activities and susceptibility to persuasion by far-right extremist propaganda. Study 1 (N = 404)

12 Lorraine Bowman-Grieve, "Exploring 'Stormfront': A Virtual Community of the Radical Right," Studies in Conflict

& *Terrorism* 32, no. 11 (October 30, 2009): 989–1007, https://doi.org/10.1080/10576100903259951; Lorraine Bowman-Grieve, "The Internet & Terrorism: Pathways toward Terrorism & Counter-Terrorism," in *Psychology, Terrorism and Counterterrorism*, ed. Andrew Silke (Routledge, 2011), 76–88; Gaudette et al., "Upvoting Extremism."

13 Kathleen Belew, Bring the War Home: The White Power Movement and Paramilitary America, Bring the War Home (Harvard University Press, 2018), https://doi.org/10.4159/9780674984943; Bowman-Grieve, "Exploring 'Stormfront'"; Gaudette et al., "Upvoting Extremism"; Phyllis B. Gerstenfeld, Diana R. Grant, and Chau-Pu Chiang, "Hate Online: A Content Analysis of Extremist Internet Sites," Analyses of Social Issues and Public Policy 3, no. 1 (2003): 29–44, https://doi.org/10.1111/j.1530-2415.2003.00013.x; Joni Salminen et al., "Developing an Online Hate Classifier for Multiple Social Media Platforms," Human-Centric Computing and Information Sciences 10, no. 1 (January 2, 2020): 1, https://doi.org/10.1186/s13673-019-0205-6; Scrivens, "Exploring Radical Right-Wing Posting Behaviors Online."

14 Belew, Bring the War Home; Bowman-Grieve, "Exploring 'Stormfront."

15 Belew, Bring the War Home; Gerstenfeld, Grant, and Chiang, "Hate Online."

16 Gerstenfeld, Grant, and Chiang, "Hate Online"; Gluck, "Islamic State Adjusts Strategy to Remain on Telegram"; Moonshot, "From Shitposting to Sedition - a Report on the 2020 US Presidential Election."; Piper, "New Telegram Research Shows QAnon 'Largest Extremist Group' Online."

17 Mehmet F. Bastug, Aziz Douai, and Davut Akca, "Exploring the 'Demand Side' of Online Radicalization: Evidence from the Canadian Context," Studies in Conflict & Terrorism 43, no. 7 (July 2, 2020): 616–37, https://doi.org/10.1080/1057610X.2018.1494409; Bowman-Grieve, "The Internet & Terrorism: Pathways toward Terrorism & Counter-Terrorism"; Braddock et al., "Engagement in Subversive Online Activity Predicts Susceptibility to Persuasion by Far-Right Extremist Propaganda"; Maura Conway, "Determining the Role of the Internet in Violent Extremism and Terrorism: Six Suggestions for Progressing Research," Studies in Conflict & Terrorism 40, no. 1 (January 2, 2017): 77–98, https://doi.org/10.1080/1057610X.2016.1157408; Maura Conway, Ryan Scrivens, and Logan Macnair, "Right-Wing Extremists' Persistent Online Presence: History and Contemporary Trends" (International Centre for Counter-Terrorism, 2019), https://www.jstor.org/stable/resrep19623; Gaudette et al., "Upvoting Extremism"; Peter R. Neumann, "Options and Strategies for Countering Online Radicalization in the United States," Studies in Conflict & Terrorism 36, no. 6 (June 1, 2013): 431–59, https://doi.org/10.1080/105761 0X.2013.784568; Scrivens, "Exploring Radical Right-Wing Posting Behaviors Online"; Scrivens et al., "Triggered by Defeat or Victory?"; Scrivens et al., "Detecting Extremists Online."

18 Bastug, Douai, and Akca, "Exploring the 'Demand Side' of Online Radicalization"; Braddock et al., "Engagement in Subversive Online Activity Predicts Susceptibility to Persuasion by Far-Right Extremist Propaganda."

19 Isabelle van der Vegt et al., "The Grievance Dictionary: Understanding Threatening Language Use," *Behavior Research Methods* 53, no. 5 (October 1, 2021): 2105–19, https://doi.org/10.3758/s13428-021-01536-2.a psycholinguistic dictionary that can be used to automatically understand language use in the context of grievance-fueled violence threat assessment. We describe the development of the dictionary, which was informed by suggestions from experienced threat assessment practitioners. These suggestions and subsequent human and computational word list generation resulted in a dictionary of 20,502 words annotated by 2318 participants. The dictionary was validated by applying it to texts written by violent and non-violent individuals, showing strong evidence for a difference between populations in several dictionary categories. Further classification tasks showed promising performance, but future improvements are still needed. Finally, we provide instructions and suggestions for the use of the Grievance Dictionary by security professionals and (violence

20 Bowman-Grieve, "Exploring 'Stormfront'"; Scrivens et al., "Detecting Extremists Online."

21 Gaudette et al., "Upvoting Extremism"; Cynthia Miller-Idriss, The Extreme Gone Mainstream: Commercialization and Far Right Youth Culture in Germany, The Extreme Gone Mainstream (Princeton University Press, 2018), https://doi.org/10.1515/9781400888931; Cynthia Miller-Idriss, Hate in the Homeland: The New Global Far Right, Hate in the Homeland (Princeton University Press, 2020), https://doi.org/10.1515/9780691205892; Scrivens et al., "Triggered by Defeat or Victory?"

22 The Extreme Gone Mainstream.

23 Reddit Inc., "Homepage - Reddit," 2022, https://www.redditinc.com; Salminen et al., "Developing an Online Hate Classifier for Multiple Social Media Platforms."

24 "Upvoting Extremism."

25 Semrush, "Reddit Website Traffic, Ranking, Analytics [March 2022]," Semrush, April 15, 2022, https://www.semrush.com/website/reddit.com/.

26 Bowman-Grieve, "Exploring 'Stormfront"; Scrivens et al., "Detecting Extremists Online."

27 Randy Borum, "Radicalization into Violent Extremism II: A Review of Conceptual Models and Empirical Research," *Journal of Strategic Security* 4, no. 4 (Winter 2011): 37–62, http://dx.doi.org/10.5038/1944-0472.4.4.2; Donatella della Porta, "Recruitment Processes in Clandestine Political Organizations," *International Social Move-*

ment Research 1 (1988): 155-69.

28 Abraham D. Benavides, Laura M. Keyes, and Brittany Pulley, "Understanding the Recruitment Methods and Socialization Techniques of Terror Networks by Comparing Them to Youth Gangs: Similarities and Divergences," in *Countering Terrorist Recruitment in the Context of Armed Counter-Terrorism Operations*, ed. S. Ekici, H. Akdoğan, and E. Ragab (IOS Press, 2016), 40–54; Bowman-Grieve, "Exploring 'Stormfront'"; Bradley R. Wright et al., "Low Self-Control, Social Bonds, and Crime: Social Causation, Social Selection, or Both," *Criminology* 37 (1999): 479–514, https://doi.org/10.1111/j.1745-9125.1999.tb00494.x.

29 Justin Grimmer and Brandon M. Stewart, "Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts," Political Analysis 21, no. 3 (2013): 267–97, https://doi.org/10.1093/pan/mps028.

30 Grimmer and Stewart.

- 31 Semrush, "Reddit Website Traffic, Ranking, Analytics [March 2022]."
- 32 Reddit Inc., "Homepage Reddit."
- 33 Reddit Inc.

34 Timberg and Harwell, "TheDonald's Owner Speaks out on Why He Finally Pulled Plug on Hate-Filled Site."

35 See Gaudette et al., 2020 for a review.

36 Like the Reddit data, front page posts on TheDonald were identified based upon the default 'hot posts' sorting option. Sorting by 'hot' ranks posts by engagement (votes and comments) and age (time since the post was generated). Accordingly, these posts reflect ongoing and popular topics on the respective forums. This sorting algorithm is described in more detail at https://www.reddit.com/r/blog/comments/o5tjcn/evolving_the_best_ sort_for_reddits_home_feed/.

37 Christopher Manning and Hinrich Schutze, *Foundations of Statistical Natural Language Processing* (MIT Press, 1999).

38 An example of lemmatization is the reduction of the words "running", "ran", and "runs" to their common linguistic root "run".

39 Margaret E. Roberts et al., "The Structural Topic Model and Applied Social Science," *Advances in Neural Information Processing Systems Workshop on Topic Models: Computation, Application, and Evaluation* (2013): 4, https://scholar.princeton.edu/files/bstewart/files/stmnips2013.pdf.

40 Roberts et al. (2013); Margaret E. Roberts et al., "Structural Topic Models for Open-Ended Survey Responses," *American Journal of Political Science* 58, no. 4 (2014): 1064–82, https://doi.org/10.1111/ajps.12103; Margaret E. Roberts, Brandon M. Stewart, and Edoardo M. Airoldi, "A Model of Text for Experimentation in the Social Sciences," *Journal of the American Statistical Association* 111, no. 515 (July 2, 2016): 988–1003, https://doi.org/10.1080/01 621459.2016.1141684; Justin Grimmer, Margaret E. Roberts, and Brandon M. Stewart, *Text as Data: A New Framework for Machine Learning and the Social Sciences* (Princeton University Press, 2022).2022

41 Kenneth Benoit et al., "Quanteda: An R Package for the Quantitative Analysis of Textual Data," *Journal of Open Source Software* 3, no. 30 (October 6, 2018): 774, https://doi.org/10.21105/joss.00774; Margaret E. Roberts, Brandon M. Stewart, and Dustin Tingley, "Stm: An R Package for Structural Topic Models," *Journal of Statistical Software* 91 (October 31, 2019): 1–40, https://doi.org/10.18637/jss.v091.i02; R Core Team, "R: A Language and Environment for Statistical Computing," 2022, https://www.R-project.org/.

42 Due to the lemmatization step in the preprocessing of the texts, all words were reduced to their linguistic root. While most words retained their true meaning, some words were reduced to potentially confusing roots. For example, the word "media" in "social media" and "media company" was reduced to the root word "medium."

43 Yelena Dzhanova, "Twitter Suspended Far-Right Website Gateway Pundit's Founder Account," Business Insider, February 7, 2021, https://www.businessinsider.com/twitter-suspends-gateway-pundit-jim-hoft-2021-2.

44 Miller-Idriss, The Extreme Gone Mainstream; Braddock et al., "Engagement in Subversive Online Activity Predicts Susceptibility to Persuasion by Far-Right Extremist Propaganda"; Salminen et al., "Developing an Online Hate Classifier for Multiple Social Media Platforms."

45 Shannon Bond, "Kicked off Facebook and Twitter, Far-Right Groups Lose Online Clout," *NPR*, January 6, 2022, sec. Technology, https://www.npr.org/2022/01/06/1070763913/kicked-off-facebook-and-twitter-far-right-groups-lose-online-clout; Dzhanova, "Twitter Suspended Far-Right Website Gateway Pundit's Founder Account"; Gaudette et al., "Upvoting Extremism."

46 Moonshot, "From Shitposting to Sedition - a Report on the 2020 US Presidential Election"; Scrivens et al., "Detecting Extremists Online."

47 van der Vegt et al., "The Grievance Dictionary"; Braddock et al., "Engagement in Subversive Online Activity Predicts Susceptibility to Persuasion by Far-Right Extremist Propaganda." 48 Timberg and Harwell, "TheDonald's Owner Speaks out on Why He Finally Pulled Plug on Hate-Filled Site"; Timberg, "Gallows or Guillotines?"; Program on Extremism, "Capitol Hill Siege Cases."

49 J. Nathan Matias, "The Civic Labor of Volunteer Moderators Online," *Social Media + Society* 5, no. 2 (April 1, 2019): 2056305119836778, https://doi.org/10.1177/2056305119836778; Benjamin Plackett, "Unpaid and Abused: Moderators Speak out against Reddit," Engadget, August 31, 2018, https://www.engadget.com/2018-08-31-reddit-moderators-speak-out.html; Casey Newton, "Reddit Owes Its Moderators More than an Updated Hate Speech Policy," The Verge, July 2, 2020, https://www.theverge.com/interface/2020/7/2/21310135/reddit-should-pay-moderators-hate-speech-death-threats-content-policy-facebook-ad-boycott.

50 No posts were identified as 'removed' in contrast to Reddit moderator actions. This is even though several posts and comments clearly violated the community rules on TheDonald (including, but not limited to "No posts or comments that violate laws in your jurisdiction or the United States..." and "No racism, including slurs, non-factual content, and general unfounded bigotry" – see https://web.archive.org/web/20201201004141/https://thedon-ald.win/ for the full rules). For more on the characteristics of TheDonald's moderation team please see Timberg and Harwell (2021).

51 Mark C. Stafford and Mark Warr, "A Reconceptualization of General and Specific Deterrence," *Journal of Research in Crime and Delinquency* 30, no. 2 (May 1, 1993): 123–35, https://doi.org/10.1177/0022427893030002001.

52 To wit, existing research suggests the important connections between online extremism and real-world interventions; see for example Todd C. Helmus and Kurt Klein, "Assessing Outcomes of Online Campaigns Countering Violent Extremism: A Case Study of the Redirect Method" (RAND Corporation, December 10, 2018), https://www.rand.org/pubs/research_reports/RR2813.html, Tamar Mitts, "Do Community Engagement Efforts Reduce Extremist Rhetoric on Social Media?," SSRN Scholarly Paper (Rochester, NY, March 24, 2017), https://doi.org/10.2139/ssrn.2940290, and Lena Frischlich et al., "The Power of a Good Story: Narrative Persuasion in Extremist Propaganda and Videos against Violent Extremism," *International Journal of Conflict and Violence (IJCV)*, March 6, 2019, a644 Pages, 819 KB, https://doi.org/10.4119/UNIBI/IJCV.644.

Perspectives on Terrorism

Established in 2007, Perspectives on Terrorism (PT) is a quarterly, peerreviewed, and open-access academic journal. PT is a publication of the International Centre for Counter-Terrorism (ICCT), in partnership with the Institute of Security and Global Affairs (ISGA) at Leiden University, and the Handa Centre for the Study of Terrorism and Political Violence (CSTPV) at the University of St Andrews.

Copyright and Licensing

Perspectives on Terrorism publications are published in open access format and distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License, which permits non-commercial reuse, distribution, and reproduction in any medium, provided the original work is properly cited, the source referenced, and is not altered, transformed, or built upon in any way. Alteration or commercial use requires explict prior authorisation from the International Centre for Counter-Terrorism and all author(s).

© 2023 ICCT

Contact

E: pt.editor@icct.nl W: pt.icct.nl





