

INVESTIGATING ONLINE ACTIVISM FOR SOCIAL CHANGE: CONCEPTUAL FRAMEWORK, PARTICIPATION, DYNAMICS, AND CROSS-MOVEMENT COALITIONS

BY

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General Abstract

This thesis presents a research program that explores how online activism may be effective in generating social change. Online firestorms, digitally native social movements, and crossmovement coalitions emerge as new forms of public outrage and collective action on social media. While they present emerging phenomena and quintessential manifestations of today's networked public sphere, little is known about how they occur and develop, about their nature and dynamics, and their implications for organizational fields. Established theories of social movements and collective action cannot sufficiently explain these new forms of activism and contentious activity in the realm of social media.

To address these gaps, this thesis investigates how online firestorms are triggered and evolve, how social movements harness those firestorms to advance their agendas, and how new forms of coalitions and coordination emerge between movements via social media. This thesis includes the development of an interdisciplinary conceptualization of online firestorms along with empirical in-depth studies of impactful digitally native activism and cross-movement coalitions.

This research adopts a mixed methods approach and uses large scale digital trace data generated on social media as the main source of data. The digital trace data was collected over three years using self-developed tools. Analysis of collected samples was based on a wide range of leading-edge techniques in social networks and natural language processing.

The findings of the program shed light on different aspects of online activism including emergence, organization, contentious activity, spread, participation, and field actors' relationships. It explains how public outrage changes due to technical and social aspects of social media and what makes online activism impactful.

The study provides several important contributions to research on online activism, social movements, and cross-movement coalitions, leading to a better understanding of the nature and dynamics of these phenomena. The findings of empirical studies included in this thesis demonstrate how social movements can play an important role in countering issues of hate and disinformation found on social media, and become a driving force for changes in the governance of platforms, algorithms, and policies.

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Declaration of Originality and Statement of Authorship

I declare that the thesis has been composed by myself and that the work has not be submitted for any other degree or professional qualification. I confirm that the work submitted is my own, and regarding authorship of the published materials included in this thesis I am the lead author, and I was responsible for all study conception(s), design(s), data collection, execution, analysis, write-up, and all revisions. My supervisors, Dr. Jean-Grégoire Bernard and Associate Professor Markus Luczak-Roesch contributed guidance and feedback appropriate for research undertaken under supervision at Te Herenga Waka - Victoria University of Wellington and copy-editing relevant to inter-language nuances¹.

The use of pronouns "we", "our", "us" in this thesis is mainly stylistic; and in some places indicates that supervisors provided necessary guidance and direction for the research. I confirm that appropriate credit has been given within this thesis where reference has been made to the work of others.

¹ For relevant university policy, see: <u>https://www.wgtn.ac.nz/documents/policy/research-policy/recognition-of-authorship-policy.pdf</u>

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List of acronyms and abbreviations

ADL	Anti-Defamation League
API	Application Programming Interface
CEO	Chief Executive Officer
CSV	Comma-Separated Values
HTTP	Hypertext Transfer Protocol
ICE	U.S. Immigration and Customs Enforcement
JSON	JavaScript Object Notation
LDA	Latent Dirichlet Allocation
LULAC	League of United Latin American Citizens
NAACP	National Association for the Advancement of Colored People
NHMC	National Hispanic Media Coalition
OAuth	Open Authentication
SG	Sleeping Giants
SHFP	StopHateForProfit
UA	United Airlines
URL	Uniform Resource Locator
US	The United States of America

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Chapter 1: Introduction

1.1 Motivation

The Internet and social media allowed for the emergence of online activism and transformed the practices of social movements and collective action (Bennett & Segerberg, 2012; Earl & Kimport, 2011; George & Leidner, 2019). The range of online activism categories is wide and includes both low-effort activities such as hashtag sharing or signing online petitions and more disruptive activities such as data exposure and hacktivism (Earl & Kimport, 2011; Earl, Kimport, Prieto, Rush, & Reynoso, 2010; George & Leidner, 2019). However, while some online activist campaigns are short-term and fade without any visible impact, others become powerful enough to generate social change. Protest activities and public outrage on social media may ignite an online firestorm and even lead to the emergence of new social movements. For example, the global *#metoo* movement allegedly started with a post on Twitter from the actress Alyssa Milano² who asked women to reply to her tweet with "me too" if they have been sexually harassed or assaulted (Dorking, 2017).

Digital technologies and social media transform mobilization, organization, and participation in protest activities (Brunsting & Postmes, 2002; Earl, Hunt, & Garrett, 2014; Earl & Kimport, 2011; Schmitz et al., 2020). Therefore, social science theories related to social movements, contentious activity, and collective action that were originally conceptualized for offline, pre-digital contexts may become less relevant in the online realm and their boundaries might need to be revised for social media activism.

At the same time social media opened novel opportunities for social research. Realizing the potential of large digital traces that can be collected and studied, scholars call for the synthesis of methods developed by computational scientists with social science theories (Bail, 2014; Tinati, Halford, Carr, & Pope, 2014; Whelan, Teigland, Vaast, & Butler, 2016). Indeed, large volumes of user generated content can be analyzed to provide important insights into existing theories and to explain newly emerging social phenomena. Moreover, researchers have advanced methods that allow to explore social media users' identity and political inclination based on the content they share (Bakshy, Messing, & Adamic, 2015; Budak, Goel, & Rao, 2016; Robertson et al., 2018), and the network structure (i.e., their friends and followers) (Barberá, 2015; Barberá, Jost, Nagler, Tucker, & Bonneau, 2015).

² <u>https://twitter.com/Alyssa_Milano/status/919659438700670976</u>, accessed 2 August 2021.

Acknowledging both the gaps in the existing theories along with the new opportunities for social research this research program investigates three aspects of social media activism generating social change: online firestorms, digitally native activism, and cross-movement coalitions.

1.2 Theoretical Foundation

1.2.1 Online Firestorms

Online firestorms present a type of public outrage on social media against an individual, group or organization (Pfeffer, Zorbach, & Carley, 2014). Despite increasing interest in this phenomenon among scholars across multiple disciplines (see Appendix 3A), their nature and dynamics still lack conceptualization. Online firestorms are conceptually different from the public outrage in pre-digital contexts due to affordances of social media that provide much higher turnover of information and spread beyond geographical borders (Lamba, Malik, & Pfeffer, 2015; Nitins & Burgess, 2014; Zimmerman, Chen, Hardt, & Vatrapu, 2014). Common information- and network-centric views of online firestorms attempt to explain their spread (Mochalova & Nanopoulos, 2014; Park, Cha, Kim, & Jeong, 2012; Pfeffer et al., 2014) but remain silent on their potential to generate social change. Other researchers focus less on the material aspects of information and instead try to explore how emotions, sentiment, and rhetoric become drivers for online firestorms initiation and participation (Chan, Lee, & Skoumpopoulou, 2019; Jansen, 2019; Johnen, Jungblut, & Ziegele, 2018; Lim, 2017; Toubiana & Zietsma, 2017).

Thus, there is a need for an interdisciplinary conceptualization which will review, extend, and integrate existing theories and miscellaneous approaches to study firestorms. Such conceptualization needs to include both information network perspective and a field-level perspective by combining the lenses of information science, social network analysis, and organizational theory. A holistic view on this complex socio-technical phenomenon will contribute to the understanding of why, when, and how online firestorms may impact organizational fields and lead to broader social changes.

1.2.2 Digitally Native Activism

While online firestorms are temporary and short-termed by their nature, they may turn into a larger-scale and long-lasting social media campaigns and online social movements. In fact,

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scholars argue that the Internet and social media have impacted social movement processes in several ways (Bennett & Segerberg, 2012; Bimber, Flanagin, & Stohl, 2005; Earl & Kimport, 2011). First, social movement activists may use social media simply as a channel to distribute information and support their offline activities (Earl et al., 2010). They may also use digital technologies to create new avenues for activism participation, such as online petitions, for instance (George & Leidner, 2019). Finally, social media allows for a new type of social movement – a so-called digitally native activism, which are not driven by existing offline campaigns or protest activities but are initiated, organized, and coordinated purely online (Earl et al., 2010; Schmitz, Dedmon, Bruno-van Vijfeijken, & Mahoney, 2020). Research on this type of social activism is still in its infancy, and is one of the focal points of this research program.

Despite a growing number of digitally native campaigns and online social movements, little is known when and how they become successful and generate social change. In particular, what are the necessary conditions that trigger collective action and facilitate the emergence and development of a digitally native movement? There is also a lack of understanding of mechanisms that allow activists to mobilize and coordinate their work in the absence of formal organization and physical infrastructure. Moreover, the tactics and repertoire of digitally native activism may be different from conventional social movements because their targets and arena of contention are often online. These areas are under-explored yet are important because they shed light on the strategies used by activists to disseminate ideas, mobilize, and gain legitimacy (Benford & Snow, 2000; Cornelissen & Werner, 2014).

1.2.3 Cross-movement Coalitions

Social media allows activists not only to initiate new movements but also to unite and join forces forming cross-movement coalitions. Coalitions enable a larger pool of resources, an expanded network, and more influence, thus increasing the chances of the movement's success (Beamish & Luebbers, 2009; van Dyke, 2003). At the same time, differences in power, resources, organization, culture, and ideology often hinder the formation and positive outcomes of offline coalitions (Bystydzienski & Schacht, 2001; Ferree & Roth, 1998; Lichterman, 1995). However, social media eliminates many of traditional barriers for coalition formation by changing the nature of resources, power relationships, mobilization opportunities and the network structure online. This enables cooperation between unlikely partners, which is an emerging phenomenon that is yet mostly unresearched (van Dyke & Amos, 2017).

Moreover, the dynamics of online cross-movement coalitions remains an under-explored area. Partners with different backgrounds and diverse identities can join coalition on social media, however, the participation and commitment of each partner remains unclear. Scholars argue that existing theories on conventional offline social movement alliances and coalitions might need to be revised for online coalitions (van Dyke & Amos, 2017). Established theories explaining factors of coalition formation and success (Staggenborg, 1986; van Dyke & McCammon, 2010) might not be relevant in the realm of social media where participating partners do not depend on physical proximity, shared membership, or resources.

1.3 Research Objectives and Research Questions

This research program aims to investigate social media activism generating social change through three studies: conceptualization of the online firestorm phenomenon, exploration of digitally native activism, and cross-movement coalitions. The project includes the following Research Objectives (ROs) and corresponding Research Questions (RQs):

RO1: Propose a conceptual framework of online firestorms' properties using interdisciplinary conceptualization of information, field actors, technology, and social relationships.

• **RQ1.1**: What are the properties of online firestorms that may generate field level change?

For the purpose of this research, we define *online firestorms* as sudden bursts of emotional and negative word-of-mouth on social media against a person, group, or organization (Lamba et al., 2015; Pfeffer et al., 2014; Rost, Stahel, & Frey, 2016). We also define *organizational fields* as a social order that underlies the interactions of field actors and is structured around common interests and meaning systems (Dimaggio & Powell, 1983; Fligstein & McAdam, 2012; Zietsma, Groenewegen, Logue, & Hinings, 2017).

RO2: To understand when and how online activism generates social change

- **RQ2.1:** What are the *opportunity structures* for the emergence of online activism?
- **RQ2.2:** What are the *mobilizing structures* (i.e., the participation, organizing, and coordinating patterns of the actors) in digitally native activism?
- **RQ2.3**: What *framing tasks* (i.e., strategic articulation, language, and rhetoric) do online activists use toward their targets?

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We derive key terms related to these RQs from the conceptual framework which describes three dimensions of [online] social movements (Garrett, 2006; McAdam, Tarrow, & Tilly, 1997): opportunity structures, mobilizing structures and framing. *Opportunity structures* refer to events and conditions that favour the emergence of collective action; *mobilizing structures* are mechanisms that support social movement by enabling participation, coordination, and leadership practices; and *framing* is language and rhetoric used to articulate sets of beliefs that embed a movement's activities with meaning.

RO3: To explore differential involvement in cross-movement coalitions on social media.

- **RQ3.1:** How is participation in an online cross-movement coalition distributed across partners?
- **RQ3.2**: How is the identity of cross-movement coalition partners, as instantiated in the social media discourse, ideological inclination, and social integration of the movements, related to their participation?

We define *cross-movement coalition* as an alliance between two or more organizations to pursue shared goals and/or join forces against mutual foes (Staggenborg, 1986; van Dyke & McCammon, 2010; Zald & Garner, 2017). *Identity* is a broad concept, with the focus of this research being on the ideological part of identity, defined as a system of beliefs that justifies social and political order, and economic reality (Jost, 2006; Jost, Nosek, & Gosling, 2008).

1.4 Research Design and Methodology

To explore social media activism, we used a mixed method approach (Whelan et al., 2016) with a wide range of quantitative techniques, including natural language processing, LDA topic modeling, cluster and timeseries analyses, and hashtag co-occurrence. Several self-developed tools were used for this project (see Chapter 2 for more details).

For the first part, which is the conceptual framework of online firestorm properties, we used a developmental literature review (Templier & Paré, 2015). This approach was justified by the fact that online firestorms present an emerging phenomenon and are still at the early stage of conceptualisation with several existing studies coming from different areas.

For the empirical studies on digitally native activism (Chapter 4) and cross-movement coalitions (Chapter 5) we used a large set of digital traces from social media. Twitter was used as a main source of data due to its predominant role in online firestorms and online social movements investigated in this thesis. There has been substantial research on the opportunities

and limits of Twitter content for research in the social and organizational sciences (Morstatter, Pfeffer, & Liu, 2014; Tinati et al., 2014). Collected data from social media was complemented by relevant articles, interviews, and public media posts.

Data collection was an ongoing process that was running for the period from March 2018 until April 2021. Using selected criteria (e.g., Twitter handles, hashtags, followers' ids) in total we crawled around 900 million unique tweets for this research program. To collect this data, we used self-developed Twitter Crawler (Thingnes & Li, 2021) which allows parallel tasks and is optimized for crawling large datasets.

For the empirical study on cross-movement coalitions on social media we additionally developed a "URL Expander" – a tool that allows retrieval of full weblinks from a large number of short URLs. This tool has an important practical implication for the research on social media because many URLs shared online are created through shortening services (e.g., bit.ly, tinyurl.com, bl.ink, etc.) thus need to be expanded prior to analysis.

We strongly support Open Science and advocate for the Open Access and replicability of scientific research. Thus, we share all replication materials from the empirical studies through the Open Science Framework (https://osf.io/). We provide ReadMe files for each project which explain how to reproduce analysis and generate the output (e.g., graphs, figures). In compliance with Twitter's Terms of Service, which does not allow the public sharing of raw files containing the full text of the tweets, we provide all tweet ids used in this research that can be then rehydrated. We hope that replication materials will not only ensure reproducibility of this project but also help advancing science, promote open collaboration, and be useful for other multidisciplinary researchers.

1.5 Thesis Outline Structure

This thesis presents a research program on online activism and consists of six chapters with integrated publications (Mason & Merga, 2018). These include Introduction (Chapter 1), Engineering considerations with regards to social media data collection (Chapter 2), three original articles each of which constitutes a chapter (Chapters 3, 4 and 5), and Conclusion (Chapter 6) (see Thesis Summary in Table **1.1**).

Introduction

Table 1.1 : Thesis summe	arv
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Chapter	Title	Relevance to ROs & RQs / Outcomes
Chapter 1	Introduction	Motivation, theoretical foundation, overarching methodology, research questions and objectives.
Chapter 2	Engineering Considerations of Social Media Data Collection	Description of the self-developed tools to collect large samples of social media data.
Chapter 3	Unpacking Online Firestorms in Organizational Fields: An Interdisciplinary Conceptual Framework	Addresses RO1 and RQ1.1. Proposes theoretical framework that provides holistic view and combines multiple lenses to study online firestorms.
Chapter 4	Beyond Clicktivism: What Makes Digitally Native Activism Effective? An Exploration of the Sleeping Giants Movement	Addresses RO2 and RQ2.1, 2.2 & 2.3. Empirical study of a digitally native activism campaign using a revelatory case of a successful digitally native online movement.
Chapter 5	Explaining Differential Involvement in Cross-Movement Coalitions on Social Media: the #StopHateForProfit Campaign	Addresses RO3 and RQ3.1 & 3.2. Empirical study of a cross-movement coalitions on social media using the #StopHateForProfit campaign.
Chapter 6	Conclusion	Summary of the findings, contributions, limitations, and future research.

Chapter 2 describes tools that were developed for this research program to collect large samples of social media data (i.e., Twitter Crawler) and to process short URLs from social media posts (URL Expander).

Chapter 3 addresses the first Research Objective (RO1) and Research Question (RQ1.1), exploring the phenomenon of online firestorms and conceptualising the properties of online firestorms that may generate field level change. The earlier version of this study was accepted and presented at the 79th AOM Annual Meeting conference in August 2019 (Boston, US). The current version was submitted to the peer-review journal "Information and Organization" (on February 18, 2020) and was invited for resubmission with major revision (November 7, 2020). Due to time constraints we had to withdraw from that revision process and are currently looking for a good peer-review venue for this study.

Chapter 4 presents an exploratory case of a digitally native activism campaign called Sleeping Giants. This empirical study explores in depth the Sleeping Giants case from three dimensions and addresses the RO2 and RQ 2.1, 2.2 & 2.3, demonstrating when and how online activism generates social change. This study was published under the Creative Commons License in the Open Access peer-review journal "Social Media + Society". The primary intellectual property for the article belongs to the researcher.

Chapter 5 presents an empirical study of the *#StopHateForProfit* cross-movement coalition on social media, which was organized by nine different organizations. This study addresses RO3 along with RQ3.1 and RQ3.2, shedding light on the distribution of work and the identity of the coalition partners related to their participation in the cross-movement activity. This revised version of the chapter was submitted as a paper to "Socius: Sociological Research for a Dynamic World" journal in December 2021 and is currently under revision.

Finally, Chapter 6 summarises the findings in relation to the research objectives and research questions; and covers contributions, limitations, and future work.

We start the following chapter by explaining engineering considerations of data collection used in this research program. The chapter provides an overview of existing tools, their limitations and thus the justification for self-developed tools. We used these self-developed tools to collect and process data for both empirical studies that address RO2 and RO3 (i.e., studies on digitally native activism and cross-movement coalitions). We then move to the exploration of three manifestations of online activism for social change (Chapters 3, 4 and 5).

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Chapter 2: Engineering Considerations of Social Media Data Collection

Large digital traces from social media data have been increasingly used for social research. Among various social media platforms Twitter allows collection of its data through dedicated APIs, which has resulted in the popularity of Twitter data for analysis among scholars in different disciplines (Zimmer & Proferes, 2014). Relatively easy access and availability of Twitter data also led to the development of different tools and libraries for data crawling (e.g., tweepy, streamR, rtweet)³ as well as desktop and web-based applications that allow importing Twitter data (e.g., NodeXL, NVivo, SocioViz). However, these tools come with various limitations related to their functionality, crawling process, and resulted output. Therefore, to collect data for the empirical studies on digitally native activism (Chapter 4) and cross-movement coalitions (Chapter 5) we developed our own Twitter crawler (Thingnes & Li, 2021). In addition, we developed a "URL Expander" tool that allows efficient retrieval of full weblinks from short URLs. URLs created through shortening services are common on Twitter and other social media platforms. Thus, the URL Expander solves a common issue allowing researchers to process a large number of URLs from collected social media data.

This chapter presents an overview of these two tools. We start with the Twitter crawler by describing the limitation of existing tools, the logic of our crawler, and its main advantages. Next, we explain the need, purpose, and functionality of the developed URL Expander.

2.1 Twitter Crawler

Existing tools that enable the collection of Twitter data have several common limitations which motivated us to develop our own Twitter crawler. First, existing solutions are usually limited to only one type of API working either with Streaming API for live data or with Search API for historical tweets. Many tools would also include only a few selected endpoints limited to the search of tweets by keywords or selected user accounts. Another limitation is related to the rate limits imposed by Twitter for different endpoints. Most libraries do not allow parallel tasks and do not provide settings for the most efficient use of rate limits. This affects the speed of the data collection and can become a real hurdle when collecting large samples or performing a large number of queries. Lastly, the resulted output returned by these tools often presents a

³ See the list of Twitter API tools and libraries for different languages:

https://developer.twitter.com/en/docs/twitter-api/tools-and-libraries (accessed 2 August 2021)

higher level object thus providing only selected information or attributes. Some tools do allow to return full Twitter results in its original form (i.e., JSON format), however this creates another challenge of flattening the nested structure, parsing JSON, and extracting necessary attributes.

Unlike existing packages for collecting Twitter data, our crawler includes sophisticated logic that allows us to respect rate limits imposed by the API while allowing parallel tasks and optimizations for faster crawling. We share the code for the crawler on GitHub⁴ with supporting documentation.⁵ The crawler can be installed either as a Python package or using a Docker image. In addition, we developed an exporter to ingest crawled raw JSON data into a database with separate tables for tweets, users, hashtags, URLs, mentions, and other media. This allowed structured storage, easy access, and analysis of the collected data.

Twitter rate limits and two types of authentication. Getting access to Twitter API is done through OAuth (Open Authentication), which can be either as a *user* (using OAuth 1.0a) or as an *app* (using OAuth 2.0 Bearer Token). Any endpoint comes with rate limits that are applied based on the authentication method.⁶ Rate limits are applied separately for each user or app access token for a specified time window (usually 15 minutes). Therefore, by having two authentication methods we can benefit from the combined number of requests. For example, endpoint *statuses/user_timeline* has a rate limit of 900 requests/15-minutes for users and 1,500 requests/15-minutes for apps, so we could use up to 2,400 requests over any 15-minute interval. When rate limits are exceeded, an error is returned.

2.1.1 Twitter APIs and Endpoints

Our crawler uses Streaming and Search APIs to collect both real-time and historical tweets. This allowed us to have a complimentary dataset. We performed robustness checks and cross-comparisons on the sample of collected data for Streaming and Search and found that Streaming had 12% of unique tweets, while Search accounted for 8% of additional unique tweets for the same period. It is impossible to crawl 100% of tweets matching selected criteria due to Twitter's own "black box" sampling algorithms (Morstatter, Pfeffer, & Liu, 2014; Morstatter, Pfeffer, Liu, & Carley, 2013). Several endpoints were used to collect tweets, crawl

⁴ Our code is available on <u>https://github.com/thimic/twicorder-search.</u>

⁵ Note: our crawler is based on Twitter API 1.0. On August 2020 Twitter announce the launch of new

Twitter Developer API 2.0 for Academic Research: <u>https://developer.twitter.com/en/products/twitter-api/early-access/guide</u> (accessed 2 August 2021). While API 1.0 has not yet been deprecated, it will likely be replaced by API 2.0 in the long-term.

⁶ See details on the rate limits: <u>https://developer.twitter.com/en/docs/twitter-api/v1/rate-limits</u> (accessed 20 August 2021).

timelines, and user information. Finally, to optimize the crawler for collecting a large number of timelines we introduced the logic of task generators. Below is the description of the endpoints used and the logic of the crawler.

Statuses/filter. This endpoint uses the Streaming API to filter real-time tweets. The crawler is listening to a filtered stream of tweets in real time based on selection criteria: specified Twitter handle(s) and/or keyword(s). This endpoint allowed to use up to 400 keywords and up to 5,000 user ids. In a nutshell, the streaming API presents an "all you can eat" buffet receiving all related tweets in a single query, only limited by the rate limits and Twitter's sampling process. However, Twitter announced that they would stop supporting Streaming API 1.0 in August 2018 (Johnson, 2018; Perez, 2018)⁷, thus we decided to develop an additional crawler based on the Twitter Search API endpoints.

Search/tweets. This endpoint from the Search API returns a collection of relevant tweets matching a specified query (e.g., keyword(s), hashtag(s), specific language or location) for up to the last seven days in reverse chronological order.

Statuses/user_timeline. This endpoint allows to crawl the 3,200 most recent tweets of a given account and is not restricted to seven days.

It is important to note that the results of both *search/tweets* and *statuses/user_timeline* endpoints are returned in pages with a limited number of results per page and the option to request "next page", which requires another query. The maximum limit of results per page varies per endpoint. Therefore, for instance, if a *search/tweets* request finds a total of 5,000 relevant tweets with up to 100 results per page, then it will take 50 queries (i.e., 50 pages) to crawl all results.

Considering the above limitation, we had to be strategic about how often we wanted to send requests. For the empirical study on digitally native activism (Chapter 4) we were crawling multiple accounts (see Appendix 4A) of the Sleeping Giants movement. We had to ensure that we always crawl all recent tweets for the last seven days while also acknowledging low Twitter activity related to certain accounts (i.e., including own tweets, and replies, retweets, mentions of the account) thus making requests too often will not result in getting any new information. Therefore, to ensure optimal use of the rate limits, we specified in the crawler settings different time intervals for repeated queries on different accounts depending on their Twitter activity. For example, the query to retrieve new tweets associated with the main

⁷ Even though the API 1.0 was still running in 2021, and for the full duration of data collection for this research.

@slpng_giants account ran every hour, @slpng_giants_oz every four hours, and @slpng_giants_eu every 12 hours.

Users/lookup. The results of the requests for tweets and timelines also contain detailed information about the user who authored a tweet (note: for retweets we get full information about both the author of the original tweet and the author of the retweet). This information includes among others: name, id, location, verified status, language, profile look (e.g., colours, theme, background), friends and followers count, number of liked tweets, profile image and description, creation date, etc. This data is useful as it can be used for various analyses related to users' characteristics, network, and activity.

However, if a tweet contains a @mention, we only get basic information about that user (i.e., screen name and id). Therefore, to get detailed information about the mentioned account we used a dedicated endpoint *users/lookup*. This endpoint allows lookups of a maximum 100 user ids or screen names in a single request and has rate limits of 900 requests /15 min per user and 300 requests/15 min per app.

Considering the high volume of tweets containing @mentions it is easy to exhaust these rate limits. At the same time, there are often cases of the same @mention in a short time span (e.g., multiple retweets of the same tweet containing a @mention) leading to inefficient use of queries for lookups of the same information. Therefore, we introduced a two-pronged optimization for retrieving full user information for @mentions. First, every time the crawler encounters a user with full information (i.e., from tweet search and timelines) we store that user in a list in the application memory for 15 minutes. Now, whenever the crawler encounters a @mention, it first checks whether this user is in the list, meaning we recently⁸ collected full information from the temporary list and replace the limited user object information in the result. In case the encountered @mention is not in the list, we add it to the list of @mentions that require lookup. Once the list reaches 100 entries, the crawler performs one lookup request instead of spending queries for each user.

2.1.2 Task Generators for Followers' Timelines

The original crawler utilized a config file with specified criteria to crawl (e.g., selected accounts and hashtags) as shown in Figure **2.1**. However, when collecting data for the study

⁸ We used 15 minutes intervals to ensure we always had the most recent information while also assuming that a user's profile does not change significantly in 15 minutes.

on cross-movement coalitions (Chapter 5) we needed to crawl timelines of more than a million unique users (i.e., followers of the coalition partners), which was not feasible to implement through the established config system and presented another challenge for optimization of speed, rate limits, and memory.

<pre>user_timeline: - frequency: 60 output: "mozilla/timeline" kwargs: screen_name: "mozilla" - frequency: 120 output: "naacp/timeline"</pre>	Config defines the queries to run and
<pre>kwargs: screen_name: "NAACP"</pre>	where to store the output data, relative
<pre>free_search: - frequency: 60 output: "mozilla/mentions" kwargs: q: "@mozilla" frequency: 60 output: "mozilla/replies" kwargs: q: "to:mozilla"</pre>	Frequency is given in minutes and defines how often a new scan will be triggered for the given query.

Figure 2.1: Example of tasks from the config file⁹

To address this challenge we introduced *Task Generators*, a generalizable plugin architecture for generating crawling tasks based on a set of input parameters (Figure 2.2). The plugins run independently, which made it possible to preserve previous crawler results (based on the config file) and add subsequent tasks for looking up a large number of followers' ids and timelines. Moreover, we made yet another optimization by *parallelizing tasks* which enabled running multiple queries at the same time instead of sequentially. The main components of the Task Generators are described below.

⁹ See more examples and detailed documentation on <u>https://github.com/thimic/twicorder-search.</u>



Figure 2.2: Task generators

Task Generator presents a blueprint to conduct a Twitter query. For example, what endpoint to use (e.g., timeline), what user to lookup, how often (once or repeating at a specific interval), how many pages of results to return, etc. The task spawns queries and tracks them in order to know when they are fulfilled.

We created three Task Generators: "Config", "Followers' ids", and "Timelines". *Config* plugin is used for crawling data based on a manageable number of parameters that are specified manually (as shown in Figure 2.1). These parameters include keywords or user accounts with options to crawl them repeatedly at certain intervals. *Followers' ids* is a task generator that takes a list of accounts as an input and returns followers' ids of these accounts using the *followers/ids* endpoint. *Timelines* is a task generator that takes a list of users as input and

requests the most recent tweets from the timelines of these users. An example of using multiple Task Generators for data collection is shown in Table **2.1**.

		Tasks	
	1. Config	2. Followers' ids	3. Timelines
Purpose	To crawl all tweets related to the coalition partners and the #StopHateForProfit hashtag	To get IDs of all followers of each coalition partner	To get timeline tweets for the followers
Input	 Twitter handles of nine coalition partners; #StopHateForProfit keyword 	- Twitter handles of nine coalition partners	- The list of followers' ids (>1 million total)
Main endpoints	 search/tweets statuses/user_timeline users/lookup (for mentions) 	- followers/ids	- statuses/user_timeline
Output	Partners' timeline tweets, as well as replies, retweets and mentions of these accounts. Any tweet with #StopHateForProfit in the text	A list of all followers' ids per each partner (>1 million total)	Timeline tweets (we limited to 1,000 most recent tweets per user) for followers. Total 857 million tweets from 1.8 million users

Table 2.1: Example of utilizing different tasks for data collection in the study on crossmovement coalitions (Chapter 5)

Task Manager receives tasks from a Task Generator and processes them in a sequential order (First In, First Out). *Controller* receives tasks from Task Manager and turns them into queries that are then sent to *Query Exchange*. Query Exchange makes requests to Twitter. The result goes back to Controller which saves the raw JSON data to files.

Controller limits the size of the queries queued up, allowing each endpoint to have a maximum of 100 queries pending. This was done to avoid issues with extremely large queues (e.g., a queue to get timelines of millions of followers) which negatively affects the speed and memory use.

Another important optimization is the introduction of *Workers* for parallelizing tasks. Originally the Query Exchange had only one queue per endpoint. This led to inefficiencies where we did not always exhaust maximum Twitter rate limits. For example, the

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statuses/user_timeline endpoint allows up to 2,400 requests over any 15-minute interval (i.e., 900 requests per user and 1,500 per app). However, because we were running queries in a sequential order, and each query took time to process (e.g. waiting for a Twitter response, opening file, writing to disk, etc.) we were not able to use all 2,400 queries in 15 minutes. Now, instead of one Worker, we have four Workers each processing one queue (the number of Workers can be specified in the config file). This enables processing multiple queries in parallel, increasing crawling speed. An endpoint dispatches queries to its Workers, each Worker processes one query (i.e., talking to Twitter API). Once the Worker returns a result it asks for the next query to perform and accepts new inputs.

2.1.3 Exporter

Twitter's APIs for the tweet and user objects return data encoded using JavaScript Object Notation (JSON)¹⁰. Each object contains a set of attributes. For example, each Tweet object contains a unique ID, a timestamp, the tweet text, the author, etc. Meanwhile each User object has a screen name and id, information about followers, account bio, etc.

While JSON is easy for machines to generate and read, its semi-structured format is not well-suited for data analysis because a JSON object presents an unordered set of key-value pairs, and the nested structure might be cumbersome to flatten out. Therefore, we developed an *Exporter* to ingest crawled raw JSON data into an SQL database with separate tables for Tweets, Users, Mentions, Hashtags, URLs, Symbols, and Media.

Each table consists of multiple columns that contain different attributes about the Twitter object. For example, the Tweets table has 35 columns including not only basic attributes (e.g., tweet id, type, timestamp, text) but also language, coordinates, the presence of hashtags, URLs, and media, and whether the tweet is withheld in certain countries due to Digital Millennium Copyright Act requests (see details on all tables in Appendix 2A).

The resulting database allows a high degree of organization of structured data that is easily accessible and well-suited for data analysis. The database and associated tables can be read in many languages and are convenient to work with. Individual tables also allow working with specific Twitter objects independently, providing multiple ways of using the data. For example, one can conduct a separate analysis of mentions, users, or hashtags while still preserving the

¹⁰ See more detailed explanation about JSON format: <u>https://www.json.org/json-en.html</u> (accessed 22 August 2021)

relationship between all tables (e.g., locate the original tweet the hashtag is coming from, filter all users who used specific URLs, etc.).

In summary, our developed crawler presents a useful tool for the collection of live and historical Twitter data. The crawler provides fast and efficient crawling using multiple endpoints and several optimizations that maximize the use of allowed rate limits. The plugin architecture for generating crawling tasks (i.e., Task Generators) makes it easy to configure the crawler for different purposes. Finally, the Exporter ingests crawled JSON data into a structured database with rich information about each Twitter object thus streamlining the processing of collected data and providing various opportunities for analysis.

2.2 URL Expander

URLs are an essential part of the content shared on social media. The presence of a URL in a tweet may affect a post's retweetability (Bruns & Stieglitz, 2012; Suh, Hong, Pirolli, & Chi, 2010) and can be used to predict popularity of newly emerging hashtags (Ma, Sun, & Cong, 2013). Scholars use URL analysis to track the spread of epidemics (Adar & Adamic, 2005), to explore the propagation of misinformation and discover alternative media ecosystems (Benkler, Faris, & Roberts, 2018; Starbird, 2017; Starbird, Maddock, Orand, Achterman, & Mason, 2014). Moreover, URLs can be used to understand characteristics of social media users who share them, namely, to measure their political inclination and partisan bias (Conover, Gonçalves, Ratkiewicz, Flammini, & Menczer, 2011; Robertson et al., 2018).

Many URLs shared on social media present short URLs due to visual appeal and limitations on post length (Boyd, Golder, & Lotan, 2010). Such URLs present shortened proxy URLs (i.e., through shortening services like bit.ly) that get redirected to the full URL of the actual content. This means that despite their usefulness and importance for research, additional steps are required to first expand short URLs and retrieve the actual content.

Several packages exist to expanded short URLs (e.g., longurl¹¹, urlshorteneR¹²) however there are two common interrelated issues: speed and rate limits. They may work only with a small number of URLs, and/or the speed of URL expansion is low because it may apply several rate limits to avoid being blacklisted as a potential DOS attack due to multiple requests in a short period of time. Moreover, some packages work as a wrapper for only selected shorteners (e.g., 'urlshorteneR' for bit.ly and is.gd) and may require additional authentication/

¹¹ https://cran.r-project.org/web/packages/longurl/longurl.pdf (accessed 16 August 2021).

¹² https://cran.r-project.org/web/packages/urlshorteneR/urlshorteneR.pdf (accessed 16 August 2021).

authorization mechanisms such as OAuth2 access tokens or API keys, which can further limit its use.

Meanwhile, large datasets may have millions of URLs from hundreds of URL shorteners that need to be expanded in adequate time. Therefore, we developed "URL Expander" – an application that allows us to retrieve full weblinks from a large number of short URLs.

The Expander is a macOS application written using Swift internal framework for URL requests called URLSession¹³. The Expander allows performing 25 concurrent lookups, constantly adding new URLs to the pool every time a URLs is expanded. The optimal number of concurrent lookups (i.e., 25) was defined after multiple tests for two reasons. First, a larger number of parallel tasks may inadvertently act as a DOS attack, sending too many requests to the same domain. Second, certain services may have rate limits, thus stop serving data and instead returning the HTTP "429 Too Many Requests" error when those limits are reached.

Figure **2.3** shows the screenshot of the URL Expander interface. The application does not require any login or authentication and takes a CSV file with a list of short URLs to expand as an input. URL Expander automatically strips leading and trailing whitespaces and performs sanitization related to the encoding and decoding (i.e., for URLs with punctuations and special symbols that may cause issues when reading and writing a CSV file). In this example, we opened a CSV file containing 20,000 short URLs and ran the application for 32 seconds, resulting in 263 expanded URLs and an estimated remaining time of 40 minutes. The Expander returns a table with the following information: Short URL, Host URL (i.e., domain level), Long URL (i.e., expanded URL), Response Code (HTTP response status code¹⁴), and Response Message. The result can be saved as a CSV file.

¹³ <u>https://developer.apple.com/documentation/foundation/urlsession</u> (accessed 16 August 2021).

¹⁴ See details on the five classes of HTTP response status codes: <u>https://www.w3.org/Protocols/rfc2616/rfc2616-sec10.html</u> (accessed 16 August 2021).

••		urls_to_expand_2.csv	– URLExpander		•
Shortened URLs 20,000	Expanded URLs		Elapsed 32S Remainin	g 40m 1s	263
https://cnn.it/3db7zOm			Table CSV		
https://bit.ly/32FjrGd	Short URL	Host URL	Long URL	Response Code	Response Messge
https://bit.ly/2R0i7qX	http://shar.es/SKiLU	snar.es	http://snar.es/bAiL0	404	not round
http://dlvr.it/RSLV5v	https://t.co/QKCQKixire	twitter.com	https://witter.com/paperionnystatus/127624	200	no error
https://cnn.it/2xVmYTJ	http://youtu.be/pGu2jmCzzGk	m.youtube.com	https://m.youtube.com/watch?v=pGu2JmCzz	200	no error
https://t.co/QKCQKixIfE	http://ti.me/Rn24QD	nealtniand.time.com	https://neartnland.time.com/2012/10/24/are-e	200	no error
https://bit.ly/2MPBjFd	https://tinyuri.com/y4cropew	m.youtube.com	https://m.youtube.com/watch?v=1Q1h28iOaR	200	no error
https://bit.ly/3eRLB3T	https://bit.iy/2R0i/qX	www.instagram.com	https://www.instagram.com/p/B-2odGFhqt9/	200	no error
https://bit.ly/31ghlbj	http://youtu.be/hHo26ri/VbY	m.youtube.com	https://m.youtube.com/watch?v=nHo26ri/vb	200	no error
https://tinyurl.com/y4cr6pew	https://cnn.it/3db7zOm	edition.cnn.com	https://edition.com/2020/05/04/entertain	200	no error
http://bit.ly/TtcXeK	http://youtu.be/wvZuLEhkRa0	m.youtube.com	https://m.youtube.com/watch?v=wvZuLEhkRa	200	no error
http://ow.ly/eKtSx	http://bit.ly/P8wrdi	www.etcetera.com	https://www.etcetera.com.mx/articulo.php?ar	404	not found
http://ti.me/Rh24QD	http://ow.ly/eKtSx	www.etcetera.com	https://www.etcetera.com.mx/articulo.php?ar	404	not found
http://bit.lv/TBrndi	http://bit.ly/WiGASz	www.etcetera.com	https://www.etcetera.com.mx/articulo.php?ar	404	not found
http://bit.lv/RA1BXi	http://dlvr.it/RSLV5v	www.boxingscene.c	https://www.boxingscene.com/pacquiao-not	200	no error
http://bit.lv/OrcBoW	https://bit.ly/32FjrGd	www.fairvote.org	https://www.fairvote.org/maine_to_make_hist	200	no error
http://ow.ly/ee2Wk	https://bit.ly/2MPBjFd	www.revolt.tv	https://www.revolt.tv/2020/6/12/21289089/iil	200	no error
http://bit.lv/P8wrdi	http://youtu.be/wDKIGIzz1Nc	m.youtube.com	https://m.youtube.com/watch?v=wDKIGIzz1N	200	no error
http://voutu.be/nGuZimCzzGk	http://bit.ly/QrcBpW	www.reforma.com	https://www.reforma.com/estados/articulo/67	403	forbidden
http://tiovurl.com/cxabf87	http://bit.ly/TBrndi	news.blogs.cnn.com	https://news.blogs.cnn.com/2012/10/19/break	200	no error
http://shar.es/5XII.0	http://bit.ly/13qRkRW	laprimeraplana.com	http://laprimeraplana.com.mx/2013/05/16/gru	404	not found
http://bit.lv/13gRkRW	http://ow.ly/xTOy8	www.radioformula.c	http://www.radioformula.com.mx/notas.asp?l	403	forbidden
http://bit.lv/WiGASz	https://goo.gl/nau8iQ	goo.gl	https://goo.gl/nau8iQ	404	not found
http://bit.lv/LIEWIDa	http://bit.ly/UTt5gk	internacional.elpais	https://internacional.elpais.com/internacional	200	no error
http://bit.ly/SCA7ly	http://bit.ly/1FN5Nhx	etcetera.com.mx	http://etcetera.com.mx/articulo/preocupante	404	not found
http://wit.iy/solivity	http://goo.gl/56MkdQ	goo.gl	https://goo.gl/56MkdQ	404	not found

Figure 2.3: URL Expander screenshot

Additional information provided as an output, rather than just expanded URLs, allows performing various analyses and checks for rigorous research. For example, for the empirical study of the cross-movement coalition (Chapter 5) we expanded 2,836,597 URLs from 872 existing shorteners.¹⁵ We then performed an additional check on the distribution of bad URLs (i.e., URLs with resulted response status codes of categories *4xx client error* or *5xx server error*) to see if such bad URLs were randomly distributed or came from the same users in the network.

Considering the increasing use of large social media data for scientific research and the multiple ways URLs can be used for analysis, the developed ULR Expander has an important practical implication and is potentially useful for many researchers and scholars across different disciplines.

¹⁵ See replication materials for the list of used 872 URL shorteners: <u>https://osf.io/2jyvc/.</u>

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Chapter 3: Unpacking Online Firestorms in Organizational Fields: An Interdisciplinary Conceptual Framework¹⁶

Abstract

Online firestorms are a new form of public outrage and collective attention on social media. Most firestorms are ephemeral and local, their scope limited only to specific field actors, without any destabilization of field structures and dynamics. A few online firestorms appear to generate global, field level changes by focusing collective attention on field issues, thus revealing opportunity structures for field change. Yet, while online firestorms are a quintessential manifestation of today's networked public sphere, little is known about how different firestorms emerge and co-evolve, and about their implications for organisational fields. This paper contributes to theories of digital activism by proposing a conceptualization of online firestorms in organizational fields that draws from concepts in information science, social networks, and organization theory. The proposed conceptual framework identifies properties grounded in the materiality of information and technology, as well as the social construction dynamics that constitute organizational fields. The paper concludes by discussing the implications of the framework for future studies on digitally-mediated outrage and their associated methodological challenges.

3.1 Introduction

The Internet and the global adoption of social media introduced a new form of public outrage – so-called *online firestorms*, characterized by sudden bursts of emotional and negative word-of-mouth on social media against a person, group, or organization (Lamba, Malik, & Pfeffer, 2015; Pfeffer, Zorbach, & Carley, 2014; Rost, Stahel, & Frey, 2016). Online firestorms are an emergent phenomenon that is becoming increasingly common across different industries and societies (Baccarella, Wagner, Kietzmann, & McCarthy, 2018; Hansen, Kupfer, & Hennig-Thurau, 2018; Rost et al., 2016). Due to their explosiveness and visibility, online firestorms focus the collective attention of field actors on field issues, thus potentially triggering or catalysing changes in organizational fields.

Despite the growing body of literature about online firestorms in recent years (Hansen et al., 2018; Hauser, Hautz, Hutter, & Füller, 2017; Johnen, Jungblut, & Ziegele, 2018; Pfeffer et al., 2014; Rost et al., 2016), little research has been done to explain how online firestorms emerge and co-evolve through the interactions between various field actors; and how the

¹⁶ The early version of this paper was accepted and presented at the 79th AOM Annual Meeting, August 9-13, 2019 (Boston, US).

attention generated by firestorms can expand beyond the boundaries of a single organization, thus leading to changes in an organizational field.

The question if firestorms have any effects in destabilizing the status quo in organizational fields is embedded in the broader question of whether social media are effective in generating any social, economic, and political change. Two confronting views on this question involve technological sceptics and technological optimists. The former argue that the role of social media in recent social protests and movements is overblown (Gladwell, 2011; Morozov, 2011, 2013). The latter praise social media and believe that the Internet transforms both the environment and participants who drive those changes (Castells, 1996; Mirani, 2010; Shirky, 2008)

Sceptics often use the term "slacktivism" to describe active participation in online protests and movements despite its little to no real-life impact (Bozarth & Budak, 2017; Gladwell, 2011; Morozov, 2011). Some researchers compare online firestorms with a tempest in a teacup, arguing that firestorms are just short-term flares with no long-lasting changes in social networks (Lamba et al., 2015). On the contrary, technological optimists believe that the affordances of social media, such as low cost and fast speed of communication, allow new forms of group organization and mobilization, have potential to reach many people with minimal effort, and, thus, play an important role in social and political changes (Cardoso, Boudreau, & Carvalho, 2019; Earl & Kimport, 2011; Shirky, 2008)

These opposing stances about online firestorms indicate the complexity of the phenomenon and therefore the need to pay attention to its conceptualization to make progress in disambiguating the material impacts of social media. While the construct of online firestorms has face validity because of its intuitive appeal and the significant coverage of its instances in the news media, it lacks a formal conceptualization and the properties of online firestorms have not yet been studied extensively.

The goal of this paper is to propose a conceptual framework of online firestorms properties, which will drive future inquiries into online firestorms and add theoretical rigor to the debate between social media sceptics and technological optimists. We investigate online firestorm dynamics at the field level by combining the lenses of information science, social network analysis, and organization theory (field theory in particular). The framework acknowledges both the material and symbolic aspects of information that is conveyed on social media networks, as these aspects provide complementary perspectives from which to study online firestorms and their impacts. The framework also recognizes that ties between actors on social media networks can be conceptualized as information conduits or as relationships. Our

framework thus highlights the importance of studying the socio-technical dynamics of online firestorms using interdisciplinary conceptualization of information, field actors, technology, and social relationships. Our analysis reveals several promising future lines of inquiry.

This paper makes several contributions. First, it extends important previous work on online firestorms (e.g. Pfeffer et al., 2014) and provides a novel conceptualization of their properties, derived from social, cultural and technological changes in the networked public sphere introduced by social media. Second, the paper highlights why and how online firestorms are different from past conceptualizations of public outrage, which were proposed in times when digital technology wasn't as pervasive or constitutive of the public sphere as today. Lastly, the developed framework will set a research agenda and provide a platform for programmatic research on online firestorms.

The paper is structured as follows. We first describe what we consider a typical case of an online firestorm that destabilized the legitimacy of established practices in an organizational field. While we acknowledge that firestorms are complex phenomena that differ in their empirical manifestations, this vignette illustrates one possible instance of how a firestorm may destabilize the social order of a field, and then evolve in a way that leads to field-level changes. We then review the burgeoning literature on online firestorms and organize it by proposing a conceptual framework which can be used to unearth the various instances of online firestorms and stimulate their comparative study. The paper concludes with a discussion of the implications of our framework for future research on firestorms and related forms of digital activism.

3.2 An Online Firestorm that Led to Field Changes: the United Airlines Flight 3411 Incident

On April 9, 2017 a video showing a passenger being violently removed from an overbooked flight was extensively shared on social media, resulting in worldwide public outrage, causing reputational, legal, financial damages to United Airlines (UA), and ultimately challenging overbooking practices in the global airline industry.

Early witness videos appeared on Twitter even before the flight took off, and in less than 24 hours ignited a firestorm on social media. These videos were viewed millions of times and mentions of UA across Twitter, Facebook and Instagram exceeded 1.5 million within the first day after the incident (Joyce, 2017). News media were fast to pick up the story, and the incident made headlines in national media.

Despite happening on a domestic flight, the incident quickly went global. Within days the story became a number one trending topic on Chinese social media where outraged users accused UA of discrimination, believing that the victim was targeted because of his Asian origin (Griffiths & Wang, 2017). The graphic footage of a passenger with a bleeding face and the dismissive demeanour of airlines employees raised a wave of consternation and online discussions with highly negative sentiment even among those who were not familiar with UA (Joyce, 2017).

The initial statement by UA's chief executive with a mere apology for the need to "reaccommodate" passengers intensified the outrage and was widely mocked. A follow-up statement sent as an internal email to employees was leaked online, igniting further outrage and derision against UA (McGregor, 2017). Even UA's competitors engaged in the firestorm, trolling UA with "anti-dragging" puns, such as: "We are here to keep you #united. Dragging is strictly prohibited" by Royal Jordanian (Farber, 2017). Online users published countless memes, mocks, and other creative forms of user generated content under the hashtag #NewUnitedAirlinesMottos. Other hashtags, including "#BoycottUnitedAirlines" and "#NeverFlyingUnitedAgain", were heavily used to initiate and promote online protests against the airlines (Zorthian, 2017).

The incident provided opportunities for the recurrence of UA's previous public embarrassments. For example, the Internet community quickly circulated a song called "United Breaks Guitars" from 2009, written by the musician Dave Carroll about his real-life experience of how his guitar was broken by UA. The song, originally posted on YouTube, had been a firestorm itself back in 2009 (Barnett, Henriques, & Husted, 2018), and the music video and a hashtag #UnitedBreaksGuitar started trending again on social media, compounding the airline's 2017 crisis. Moreover, what became known as the "Flight 3411" firestorm became a resource in future episodes of contention. When UA experienced further incidents, such as a toddler's seat revocation or the killing of a pet (Matousek, 2018), social media users would bring up the Flight 3411 incident as a rhetorical resource to disparage the company's poor practices.

As the firestorm evolved, the online discourse shifted to the issue of overbooking, a common practice in the airline industry. Various stakeholders, including customers, state bodies and the public started questioning industry practices, pressing airlines to change their policies on overbooking and involuntarily passenger displacement (Lazo, 2017). The incident stirred some change in the airline industry's practices: subsequent reports showed that airline bumping dropped to their lowest rate in over a decade (McCarthy, 2017). The virality of social

media also drew attention to this issue across the globe: motivated by the UA incident, Canada adopted the Air Passenger Protection Regulations (SOR/2019-150) prohibiting removal due to overbooking (BBC, 2017).

3.3 Properties of Online Firestorms in Organizational Fields

Two central concepts need to be defined at this point. First, we adopt Pfeffer et al.'s (2014, p.118) definition of *online firestorms*: "the sudden discharge of large quantities of messages containing negative [word of mouth] and complaint behavior against a person, company, or group in social media networks." Online firestorms have also been referred to by colloquial terms such as "shitstorms" (Einwiller, Viererbl, & Himmelreich, 2017; Hansen et al., 2018), social media storms (Rydén, Kottika, Hossain, Skare, & Morrison, 2019) and "Twitterstorms" (Lamba et al., 2015). The global pervasiveness of social media platforms such as Facebook, Twitter, Instagram, Whatsapp, and Weibo, have made online firestorms a common way through which collective moral outrage is expressed in the networked public sphere.

Second, our analysis focuses on how online firestorms affect the evolution and change of organizational fields. DiMaggio and Powell (1983, p. 148) initially proposed that fields consist of "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products." Conceptually, a field is fundamentally a meso-level social order that underlies the interactions of a set of actors (Fligstein & McAdam, 2012, p. 9). Since then, this definition has been extended to encompass fields beyond the commercial realm that are grounded not only in the exchange of goods and services, but also in contestation around issues that affect the legitimacy of practices and the ordering of actors (Zietsma, Groenewegen, Logue, & Hinings, 2017). Zietsma et al. (2017, p.394) propose that fields have four fundamental attributes: (1) fields are composed of actors who are in relationship with each other and those relationships are structured around common meanings and common interests; (2) fields have boundaries that are established both through common meaning systems and the intensity of relationships within a field compared to outside of it; (3) fields have hierarchies of status and influence; and (4) because of variations in power, influence, and status among actors, fields are arenas of contestation, competition, and struggle.

Due to their explosiveness and focusing effect on a field's patterns of collective attention, online firestorms provide occasions to destabilize not only the relationships among actors, but also its boundaries and its status hierarchy. The instability creates opportunity structures that can be exploited by actors to set agendas, frame issues, mobilize support, and challenge the social order.

Since online firestorms are a relatively new socio-technical phenomenon, there are no mature theories that can account for online firestorms' manifestations and their effects in organizational fields. While being intuitively comprehensible online firestorms present a socalled "I recognize it when I see it" phenomenon, and their nature and dynamics are not yet fully conceptualized. In order to advance theorization about this emergent phenomenon we first conducted a developmental literature review (Templier & Paré, 2015), which is appropriate for early-stage inquiry and includes both conceptual and empirical studies with diverse methods. Using Google Scholar¹⁷ we found relevant papers that have "firestorms" or colloquial terms¹⁸ in their title or abstract. In addition, we made a forward reference search for Pfeffer et al.'s (2014) original paper, selecting articles that mainly focus on the online firestorms phenomenon and deliberately excluding papers that focus on related themes like online activism, online communities, or social media in general as these topics have already been well covered and discussed in the literature (George & Leidner, 2019). This exploratory search resulted in 22 papers (see Appendix 3A) about/around online firestorms. Our review isn't intended to be a systematic, exhaustive review of all evidence that pertains to online firestorms, but rather to provide new conceptual influx into their study, by identifying connections and blind-spots among the various approaches that can be used to study these.

We found that existing streams of literature on online firestorms are diverse and originate from disciplines beyond information systems (e.g., information science, marketing, tourism, crisis communication, etc.), indicating an interdisciplinary interest in the topic and an opportunity to combine multiple lenses to theorize this new phenomenon. Pfeffer et al. (2014) made an important contribution to the conceptualization of online firestorms by identifying seven properties of their dynamics. The properties were derived from a conceptual analysis of how the technology affordances of online social networks amplified the dynamics of traditional interpersonal communication networks. Despite being a foundational contribution, Pfeffer et al.'s (2014) framework is silent on the matter of when and how social media firestorms might generate field-level changes, as it pertains primarily to characterizing how and why information spreads on social media networks, and how the spread pattern can be distinguished as a

¹⁷ We have used Google Scholar because it indexes diverse scholarly literatures including not only peerreviewed academic journals, books and conference papers, but also theses and dissertations, preprints, reports, etc.

¹⁸ Keywords used: shitstorms, social media storms, twitterstorm, digital outcry, social media outrage

firestorm. It is also grounded in mostly information- and network-centric views of firestorms, thus neglecting issues of social order and meaning that are fundamental to understanding changes in organizational fields (c.f. Zietsma et al., 2017).

Researchers in information science tend to explain the spread of firestorms by investigating mostly the network structure and sentiment of social media posts (Herhausen, Ludwig, Grewal, Wulf, & Schoegel, 2019; Lamba et al., 2015; Mochalova & Nanopoulos, 2014), while not accounting much for the organizational context of online firestorms. In the organizational disciplines in comparison, scholars explore field actors' motives and willingness to participate in online firestorms (Hauser et al., 2017; Johnen et al., 2018; Rost et al., 2016) and discuss how social media provide online firestorms participants with new organizing opportunities (LeFebvre & Armstrong, 2018; Nitins & Burgess, 2014) but are less concerned with the network structure that shapes information spread during online firestorms. Finally, some studies focus on how social proof and the rhetorical form of discourse affect firestorm development (Lim, 2017; Salek, 2016), in addition to recognizing sentiment and emotions as the key driver and characteristic of online firestorms (Chan, Lee, & Skoumpopoulou, 2019; Jansen, 2019; Johnen et al., 2018; Rydén et al., 2019; Toubiana & Zietsma, 2017).

The need to further expand Pfeffer et al.'s (2014) framework is justified by the observation that multiple conceptual lenses have been used to explain and research online firestorms (Appendix 3A). Interestingly, some online firestorms cases have been investigated multiple times from different theoretical perspectives (see column "Online firestorm case(s) used / mentioned" in Appendix 3A for more details), indicating the complexity of this phenomenon. For example, the 2014 Copenhagen Zoo firestorm was the basis of both a comparative discourse analysis between local and international media (Zimmerman, Chen, Hardt, & Vatrapu, 2014), and a tourism study on consumer empowerment though social media (Rydén et al., 2019). Likewise, infamous hijacked hashtags #McDStories and #QantasLuxury (see Appendix 3B) have been used in various studies to illustrate diverse aspects of firestorms, such as speed and volume of information, how online firestorms involve two-way communication between field actors, and the role of emotions and issue framing in their dynamics (Nitins & Burgess, 2014; Pfeffer et al., 2014; Stieglitz & Krüger, 2011).

Based on the review of existing studies and our observations of an illustrative sample of online firestorms based on Pfeffer et al.'s (2014) definition (Appendix 3B), we identified 16 properties (Table **3.1**), which together provide a conceptual framework of the firestorm phenomenon in organizational fields. Following Pfeffer et al.'s (2014) approach we derived each property in an abductive fashion with relevant fundamental theories (second column of

Table **3.1**) and recent studies focused on this property (last column). The table also illustrates how each property signifies a departure from pre-digital form of public outrage (columns four and five).

Further analysis led to the clustering of the properties, presenting them in a framework of four broad categories (i.e., quadrants) with four properties in each category (Figure **3.1**).

Following the classic socio-technical duality (Orlikowski, 1992), in the horizontal axis we distinguish between *technological* (Quadrants 1 & 2) and *social* properties (Quadrants 3 & 4). Technological properties pertain to how the affordances and algorithms of social media platforms affect the creation and transmission of information, and how these same affordances and algorithms are also constitutive of the conduits through which information spreads in a field's network of actors. In comparison, social properties pertain to field issues that are at play during online firestorms (e.g., status, power, framing, institutional complexity).



Figure 3.1: Framework of online firestorms properties

Table 3.1: Properties of online firestorms

	Observation	Theoretical origin	Properties	Online firestorm	Outrage in pre- digital context	Illustrative recent studies
Information: material encoding & transmission	A high turnover of information and a short information half-life	Burton & Kebler (1960)	Speed and volume of communication	High	Low	Wu & Huberman (2007)
	Spread beyond geographical borders	McLuhan (1962)	Spatial boundaries	Absent	Exist	Cataldi et al. (2010), González- Bailón & Wang (2016)
	Low cost of firestorm initiation and participation	Peckham (1998)	Cost of initiation and participation	Low	High	Bimber et al. (2005)
	Information persistence due to digital footprints	Castells (1996)	Opportunities for recurrence	High	Low	Cheng et al. (2016)
Field actors: networks of conduits	Clustering allows information spread through multiple connections	Heider (1946)	Network clusters	Dense	Sparse	Centola (2010)
	Information spreads in multiple directions through weak and strong ties	Granovetter (1973)	Restraint of information flow	Unrestrained	Restrained	Bakshy et al. (2012)
	Limited information caused by filter bubbles and majority illusion	Simon (Simon, 1972), McPherson et al. (2001)	Information diversity	Low	High(er)	Bakshy et al. (2015), Lerman et al. (2016)
	Network dynamics influence decision making and opinion formation	Rogers (1995)	Network-triggered decision processes	Strong	Weak	Centola et al. (2018)
Information: meaning & interpretation	A plurality of issue framings that may change over time	Hoffman (1999)	Issue framing	Multiple	Unilateral	Furnari (2017), Einwiller et al. (2017)
	Interplay between news media and social media	a Key (1966)	Cross-media dynamics	High	Low	Russell Neuman et al. (2014)
	Emotions and sentiment affect information diffusion, virality and sharing behaviour	Jasper (1998)	Emotional amplification	High	Low	Berger & Milkman (2012), Stieglitz & Dang-Xuan (2013)
	Absence of gradualist opinions and limited choices that form opinions online	Schelling (1973), Daft & Lengel (1984)	Complexity of choices	Simple	Complex	Gabielkov et al. (2016)
Field actors: networks of relationships	Self-organizing structures and new forms of leadership	Ayres (1999)	Organization and leadership	Absent, self- organized	Planned, coordinated	Johnson et al. (2015), Earl & Kimport (2011)
	Demand for transparency and accountability	Power (1997), Pearson (1989)	Communication symmetry	Symmetrical	Asymmetrical	Macnamara & Zerfass (2012)
	Volatile status online, expressed in new forms and indicators.	Bourdieu (1986), Podolny & Phillips (1996)	Status hierarchy	Volatile	Stable	Levina & Arriaga (2014)
	Absence of formal authority and new forms of governance online	Johnson & Post (1996)	Regulatory complexity	Socio- technical	Institutional control	Gillespie (2017), Müller-Birn et al. (2013)

Note: Grey shaded properties are adapted from Pfeffer et al.'s (2014).

On the vertical axis, we distinguish between properties related to *information* (Quadrant 1 & 3) and *field actors* (Quadrant 2 & 4). Information has long been considered to have both a material aspect (i.e., information as bits, as a "thing") and a symbolic aspect (i.e., information as socially constructed meaning). The spread of information on social media during firestorms is often studied through the properties of its material encoding and transmission (Quadrant 1), such as its speed and volume, its diffusion through space and across geographical boundaries, its initiation and participation cost, its opportunities for recurrence. In comparison, when information is considered from a social constructionist paradigm, online firestorms become occasions for discursive struggles over definitions of reality that are subject to framing, interactions between media systems and platforms, emotional amplification, and polarization because of the low complexity of choices available to actors for expressing their stance (Quadrant 3).

The connection between field actors can be also considered from two complementary lenses. The information and network science lenses consider that the connections between field actors consist of conduits, or "pipes", through which information flows, and that the distribution of these conduits between actors constitute the network structure (Quadrant 2). This lens highlights how structural attributes of these conduits, such as clustering, network restraints on information flow, diversity of information, and network-triggered decision processes affect the dynamics of online firestorms. Alternatively, organizational scholars tend to consider connections between field actors as social relationships through which support, resources, and culture flows in addition to information (Quadrant 4). Connections between field actors involve organizational, hierarchical, and affiliation ties, and thus express the distribution of power and status that affect the dynamics of firestorms. Also, because field actors hold a plurality of values and logics, those connections can also be characterized by how they contribute to the institutional and regulatory complexity of the fields in which firestorms emerge.

Therefore, our proposed framework adapts and extends previous information- and network-centric views of firestorms (i.e., Pfeffer et al., 2014) by making explicit the socially constructed field contexts in which they occur while acknowledging the materiality of information and technology. By paying attention to the underlying social and structural field dynamics and not just patterns of information virality in firestorms, a richer picture emerges of how they may (or fail to) generate field change.

We will now discuss each quadrant with their corresponding set of properties, starting with technological properties and then moving to social ones.

3.3.1 Information: Material Encoding and Transmission (Quadrant 1)

The four properties in Quadrant 1 are concerned with material encoding and transmission of information, in other words how social media content is created and diffused during online firestorms. These properties consider the material aspect of information "as a thing", as it travels and spreads on social media networks. Properties in Quadrant 1 are inherited from the affordances brought by the Internet and social media, including the fast speed of communication and the vast volume of information created and transmitted over the course of a firestorm. Ubiquitous access to broadband and social media has changed the ways people create, transmit and share information, making the cost of initiation and participation in online firestorms cheaper and easier compared to pre-digital area. Moreover, once published information remains persistent online, due to digital footprints, and has the potential to be retrieved in the future causing multiple firestorm outbreaks and crisis recurrence.

Speed and Volume of Communication

A high turnover of information and a short information half-life during online firestorms are driven by a constant flow of information created online (Pfeffer et al., 2014). With the advent of the Internet in the 1990s and social media in the last decade, what used to take days or weeks to break can now be broadcasted within seconds to millions around the globe. An outrage may start with a single post on social media and grow unpredictably into a firestorm within just a few hours (Veil, Sellnow, & Petrun, 2012)

Analog media channels, such as television news or periodic newspapers, used to follow schedules and cycles regulated by editorial checks, which together may have restrained the speed of information release. Social media, on the contrary, do not have such bounds and present a space where millions of people instantly create and share information (Murthy, 2011). Moreover, access to social media through various technologies and devices allow people to consume digital information faster than through printed counterparts.

The speed of communication on social media also results in the short half-life of information – the period during which half of the content related to an event or issue is being published (Burton & Kebler, 1960). While the speed of news stories' propagation on social media is fast, the novelty of an item reportedly decays within hours (Wu & Huberman, 2007). Likewise, firestorm related activities, such as online petitions, may rapidly gain popularity, but decay fast without achieving any real-life effect (Yasseri, Hale, & Margetts, 2017).

Information produced on social media is also great in volume, with millions of messages being posted online just within seconds (Desjardins, 2018). User generated content may be

interactive and present in various forms and formats (e.g., audio, video, animation). In addition, social media is an unfiltered medium, allowing information that is otherwise prohibited, censored or does not meet the standards of the news media (Mei, Bansal, & Pang, 2010).

During firestorms, the speed and volume of information can be a two-edged sword. Social media present an important channel for field actors to diffuse information quickly, yet the technology also facilitates the creation of "noise" – unnecessary or false information – so that a specific message can be lost or unheard. As the signal-to-noise ratio decreases in the large volume of information public attention is difficult to sustain, since the surfacing of posts that may grow into field issues becomes harder (cf. Hoffman & Ocasio, 2001). Consequently, the large volume and high speed of information make institutional fields more complex and volatile because of the heterogeneity of views that can be circulated (Zietsma et al., 2017). Due to the limits of organizational attention, field actors have only selective and transient focus on social media content and may miss incidents that can trigger institutional or social change (Hoffman & Ocasio, 2001; Ocasio, 1997). Yet what is characteristic of firestorms is their ability to focus field attention because of their explosiveness, and the online firestorm's potential to generate changes hypothetically increases with its duration.

Spatial Boundaries

Online firestorms may easily transcend spatial boundaries and have no geographical restraints. McLuhan (1962) coined the term "global village" to describe how people are now closely interconnected through communication technology. Information from one geographical location may spread internationally due to its global importance (Cataldi et al., 2010), relevance to other countries (González-Bailón & Wang, 2016), shared preferences and interests (Van Alstyne & Brynjolfsson, 2005). Social media has linked people across the globe and made information diffusion potentially easier than ever (Castells, 1996).

Online firestorms, therefore, may facilitate the emergence of new "issue fields" (Hoffman, 1999; Zietsma et al., 2017) which are not based on the physical proximity but rather on shared ideas, norms, and beliefs. Such issue fields 'become centers of debates in which competing interests negotiate over issue interpretation' (Hoffman, 1999, p. 351), with social media providing a platform for these negotiations. Connecting various people with shared interests and mindset despite their geographical remoteness allows for new issue emergence, new interpretations, and a spin-off from a firestorm.

During firestorm, the absence of spatial boundaries has two implications. On one hand, firestorm may be initiated and propagated by participants who are physically separated. On the

other hand, permeable geographical borders mean that people online can easily migrate across fields and between field environments (Fligstein & McAdam, 2011), resulting in more firestorm participants. Thus, the threshold required for a critical mass of support and participation in an online firestorm can be achieved much faster than in past, pre-digital outrages. Consequently, in a globalized world, local issues may become global issues through social media and affect other locations as well.

Cost of Engagement and Initiation

Compared to outrages in pre-digital contexts, online firestorms are characterized by low cost of initiation and participation. Unsatisfied stakeholders or concerned activists do not need to go on the streets or prepare costly and time-consuming protests: on social media one can start a boycott campaign with a single hashtag. An individual or group can create an online petition or publicly shame an organization using social media, which may spark an online firestorm. Shirky (2008) highlighted how online environments decrease people's cost to engage in collaborative activity that was previously enabled only by institutions that controlled key organizing resources.

Indeed, studies of social movements and collective action show that the role of resources, previously considered a key factor for successful mobilization (McCarthy & Zald, 1977), has now diminished due to the low cost of online activism (Bimber et al., 2005). Social media provide new "virtual resources" (Peckham, 1998), which are not expressed in monetary value but are powerful enough to allow successful groups mobilization and participation in so-called "e-activism". The use of the Internet has changed social movement processes and introduced significant differences to traditional participation resulting in a variety of new forms of online activism (Earl, Kimport, Prieto, Rush, & Reynoso, 2010).

The low cost of firestorm initiation also increases the risk of false information, deliberate disinformation, and rumour. Computerized activism, also known as "hacktivism", along with other forms of electronic civil disobedience (Wray, 1998) are becoming part of the common rhetoric of contention. Creating a fake site, parody content, or a hoax video can be easily perpetrated by a single individual given the ready availability of editing technology and low knowledge barriers to their use. The ease of spreading misinformation or low-credibility content give leeway to various field actors, such as activists, NGOs, corporate and state-backed actors, to trigger a firestorm pursuing their own goals (Bradshaw & Howard, 2018; Shao et al., 2018). For organizations, this type of new digital threats may have much more widespread and

destructive effects than traditional crisis triggers and physical demonstrations (Veil et al., 2012).

Opportunities for Recurrence

While information on social media platforms has a short half-life (Pfeffer et. al., 2014), the information that they have amassed remains persistent because it is indexed and searchable, to be retrieved well beyond its original publication time. Online activity thus leaves digital footprints that have the potential to be visible to millions of users, who can discover, share, reformat, and mix these footprints to create new digital content (Castells, 1996). The persistence of information online has already raised privacy concerns and heated discussion about the right to be forgotten (Mantelero, 2013), but it also plays an important role in firestorms' development and recurrence (Cheng et al., 2016; Salek, 2016) because the Internet makes it easier to resurface past events around similar issues.

Firestorms sometimes occur after the Internet community scour digital footprints and surface some unappealing facts about an organization or an individual's past, such as provocative comments, controversial affiliations, or connection to some form of bigotry. Phenomena that are initially perceived as positive but quickly lose fame online after some flawed past is revealed are known as "Milkshake Duck," following the 2016 meme (Hathaway, 2017).

In addition, the persistence of digital content may potentially lead to multiple firestorm outbreaks around the same issue. Social media makes distancing oneself from past controversial events and tainted ties harder. Firestorm-related content may appear among top results in search engines and social media for a long time after it has receded, which may harm an organization's reputation and relationship with stakeholders (Veil et al., 2012). Once a "bashtag" (i.e., a hashtag to criticize, troll or mock something) is created it can be used again and again long after the initial crisis; a scandalous YouTube video can keep getting views years after its release; a message or link can be reposted or shared by millions over time. Ideas are diffused online and are "actively transferred and translated in a context of other ideas, actors, traditions and institutions" (Sahlin-Andersson & Wedlin, 2008). Thus, social media allow past crises to recur or reinforce another firestorm, when issues causing the original firestorm rise again, even if the circumstances and the actors are different.

3.3.2 Field Actors: Networks of Conduits (Quadrant 2)

The four properties in Quadrant 2 of the framework describe field actors as the networks of conduits, in other words how field actors are connected through network ties on social media and the influence those ties have on the information dissemination and complex contagions such as adoption of views and beliefs during online firestorms. Network structure and tie configuration on social media allow for unrestrained information flow, but may also restrict information diversity resulting in biases such as the majority illusion and filter bubbles. Network dynamics, created by both humans and algorithms, also affect individual's decision to consume and react to certain information during online firestorms. While network ties are important in spreading information, they may also act as social reinforcement making individuals change their opinions, behaviour or ideas.

Network Clusters

The "small world" phenomenon (Karinthy, 1929) suggests that all people are connected through "a friend of a friend" chain-links, with, on average, not more than six links between any two individuals (Travers & Milgram, 1969). With the proliferation of social media people become interconnected with even shorter path-lengths. For example, Facebook's average degree of separation is only 3.5 (Bhagat, Burke, Diuk, Filiz, & Edunov, 2016), while on Twitter the average distance between users has been found to vary between 3.4 and 4.7, depending on the sample of users examined (Bakhshandeh & Samadi, 2011; Sysomos, 2010). Social media sites provide friends suggestions based on transitive links (Heider, 1946; Holland & Leinhard, 1971) and overlapping friendship circles, thus potentially enabling greater connectivity and further reducing the degree of separation between users.

Examinations of small world networks show that network structure affects dynamics of information diffusion online (Watts & Strogatz, 1998). While there is support for the idea that homophily prevents information spread beyond a cluster, and that weak ties are important for propagating information in the network (Granovetter, 1973), a rival hypothesis argues that denser clusters and strong ties are essential for information spread (Centola, 2010; Watts & Strogatz, 1998). Centola & Macy (2007) explain that both strong and weak ties are important but for different types of contagion: simple and complex. Weak ties are mostly efficient in simple contagions: passing factual information, news, spreading rumours and infections (Centola, 2010; Weng, Menczer, & Ahn, 2013). And even though simple contagions do not require dense clusters, small world networks make simple information spread even faster. Complex contagions usually involve the adoption of practices, opinions or behaviours, and thus

require strong ties that span clusters of individuals for diffusion. Communities with strong local clustering and homophily facilitate information diffusion as those properties enable social reinforcement and affirmation from multiple sources (Centola, 2010, 2015; Centola & Macy, 2007). Therefore, closely connected structures and local clustering play an essential role in the spread of opinions and beliefs on social media (Romero, Meeder, & Kleinberg, 2011; Weng et al., 2013).

During an online firestorm, clusters may affect public awareness of an issue in a similar way. Weak ties are useful for spreading initial information about a disruptive event, campaign or a new social movement, while consolidation within the network is required in order to promote further collective action. Network clusters enable social reinforcement from multiple connected neighbours and allow complex contagions that may lead to field-level changes as they affect cultural practices, norms and behavioural change (Centola, 2015; Centola & Macy, 2007).

Restraint of Information Flow

Network connections and weak ties, in particular, are important for the diffusion of information which would not otherwise propagate (Bakshy et al., 2012; Granovetter, 1973). However, the role of ties' strength and network density in information propagation is different in offline communications and on social media.

In offline communications, one can maintain stable social relationships (i.e., strong ties) with only limited number of people, which commonly does not exceed 150 social ties (Hill & Dunbar, 2003). Contacts that do not have frequent interactions with each other are considered as weak ties, with information flow between such ties and their influence on one another being limited. In comparison, on social media, one individual may have hundreds of "friends" and the difference between strong and weak ties is often blurred (Pfeffer et al., 2014). Facebook, for example, allows up to 5,000 connections per account, with an average user having 338 friends (Smith, 2014). Meanwhile, Twitter and Instagram do not have any restrictions on the number of connected users may not experience the trust and knowledge benefits of strong ties, but they have an opportunity to be exposed to each other's content, so a single message may appear on the news feeds of thousands of weakly connected individuals, deepening its network reach.

¹⁹ https://en.wikipedia.org/wiki/List of most-followed Twitter accounts (accessed 10 January 2020).

Unrestricted information flow implies that issue related information may spread quickly through loosely connected individuals on social media. From an institutional field-level perspective, actors with bridging ties overcome cultural holes (Pachucki & Breiger, 2010) by occupying interstitial field positions that are exposed to a plurality of institutional logics and issues (Oberg, Korff, & Powell, 2017), thus having the potential to affect field discourse during critical field events. Yet, unrestrained information flow may also increase field volatility and complexity as institutional logics may circulate more widely among field's actors, leading to greater opportunities for conflict.

Information Diversity

Social media present an online public sphere, characterised by high interactivity with a wide range of voices and a low barrier of entry (Edgerly et al., 2009; Hauser, 1999). Social media evangelists hail the technology's potential to facilitate information access and progress toward an "open society" (Popper, 1945). Still, critics argue that the structure of social media networks and platform algorithms may restrict information diversity because the information presented to individuals depends on the configuration and nature of their online connections (Lee, Karimi, Jo, Strohmaier, & Wagner, 2017). The "majority illusion" and "filter bubbles" are two phenomena contributing to the lack of information diversity on social media. Both create an overestimated impression that everyone talks about the same thing and in the same way, but their mechanisms are driven by different network structures.

The majority illusion occurs in heterophilic networks when "the minority underestimates their own size and the majority overestimates the size of the minority due to high connectivity of minority to majority" (Lee et al., 2017, p. 3). A case in point would be journalists, celebrities and public figures: while being a minority group on social media they have a high degree of connectivity, their opinions are often over-represented, and the rest of the network may perceive this group's views as those of the majority. As a result, the majority illusion can lead to social contagions altering public opinion and collective behaviour (Lerman, Yan, & Wu, 2016).

In comparison, filter bubbles are present in highly interconnected clusters which tend to be homogeneous and homophilic, when like-minded people group together and adopt similar ideas (McPherson et al., 2001). From a bounded rationality perspective (Simon, 1972), filter bubbles lead to cognitive biases because clustered communities tend to overestimate their size and presume their opinions are universal while having limited or incomplete information about

alternatives (Lee et al., 2017). Dense clusters may also result in highly balkanized communities, where certain information may not find its way outside a given community (Centola, 2015).

The majority illusion and filter bubbles are cognitive biases that filter information on social media, and may originate from algorithms as well as humans. Social media platforms may deploy algorithms that intensify filter bubbles by increasing or decreasing the visibility of certain information, providing recommendations, and prioritizing content that a system considers more relevant for a user (Messing & Westwood, 2014; Olmstead, Mitchell, & Rosenstiel, 2011).

Apart from algorithms, individuals themselves may create filter bubbles, by discounting content that span cultural holes (Bakshy et al., 2015). People connect online with similar others, as in "birds of a feather," based on the shared similarities (e.g., political views, interests, hobbies). A lack of information diversity is fuelled by confirmation bias and cognitive blind spots when individuals seek out information which reinforces rather than opposes or challenges their existing views (Bakshy et al., 2015).

During the tumult of a firestorm, such cognitive biases may influence opinion formation among those who would otherwise be open to competing viewpoints. The lack of information diversity may hinder open discourse about an issue, and instead fuel the circulation of "alternative facts," fake stories and conspiracy theories. During disruptive events filter bubbles and homophily can divide the public sphere, creating islands of segregated opinions.

Network-triggered Decision Processes

Pfeffer et al. (2014) argue that the adoption of opinion online is similar to the innovation diffusion process (Rogers, 1995) but in which cognitive processes may be replaced by network-triggered decision processes, in large part due to the above-mentioned properties (e.g., filter bubbles and echo chambers). In broader terms we suggest that network-triggered decision process may be explained by threshold models of collective behaviour (Granovetter, 1978) which can be reinforced by social media algorithms. Threshold models depict situations when each individual makes decisions based on the choices of others, and are also known as informational cascades (Bikhchandani, Hirshleifer, & Welch, 1992; Watts, 2002).

Information cascades are based on the notion of a critical mass – the amount of people that is necessary to support an idea or adopt a practice so that the adoption rate becomes selfsustaining (Granovetter, 1978). The dynamics of informational cascades are complex and depends on a network's structure and level of heterogeneity (Watts, 2002). More dense and tightly interconnected communities allow fast initial spread but slow information propagation when exposed to unconnected users, while less dense networks allow slower but deeper and steadier spread (Lerman, Ghosh, & Surachawala, 2012).

Online algorithms may contribute to cascade dynamics by increasing content visibility (e.g., by suggesting "Most Popular" or "Trending" content). The algorithmic intervention of prioritizing information in a users' social feed interacts with their cognitive limits for the amount of information they can pay attention to. For instance, the visibility of novel items may actually decrease faster for individuals with many social ties as they deal with a high influx of information from multiple connections (Lerman, 2016). Therefore, network dynamics, created by both humans and algorithms, may affect an individual's decision to consume certain information.

Along with simple information consumption, network dynamics may also trigger complex contagion processes (Centola & Macy, 2007). Simple contagions have a minimum threshold of one, meaning it is enough to have one already activated contact in the network to trigger a chain reaction and a "domino effect." Complex contagions depend on social reinforcement, and therefore require more activated network connections as social proof to make an individual participate in collective behaviour (Centola & Macy, 2007; Lim, 2017). Complex contagions, such as the online diffusion of opinion that characterises most online firestorms, depend on network clusters and a critical mass of influenced individuals (Ghobadi & Clegg, 2015; Watts & Dodds, 2007). Recent experimental evidence indicates that it requires approximately 25% of a social group to adopt an opinion in order to tip the remaining majority's opinion due to created peer pressure in the network (Centola et al., 2018).

Past research thus suggests that online firestorms are facilitated by specific network structures, as the configuration of social ties may trigger collective action and affect an individual's decision to participate in a social movement or campaign associated with the firestorm issue (Centola & Macy, 2007; Lim, 2017; McAdam & Paulsen, 1993).

3.3.3 Information: Meaning and Interpretation (Quadrant 3)

In Quadrant 3 we combine properties dealing with information meaning and interpretation, expressed in the ways people interpret and frame certain events, issues and information. Within these properties we discuss the plurality of issue framings during online firestorms and a constant interplay between social media and public news media, which affects firestorms discourse and framing. We show how emotions may ignite a firestorm as well as accompany firestorm development, while social media act as an echo-chamber for emotional amplification

and massive-scale emotional contagion. Finally, low complexity of choices impacts interpretation of firestorm related information when people express binary rather than gradualist opinions and when information is presented in short or truncated forms on social media.

Issue Framing

Firestorms are episodes of contention between field actors about field issues. Incidents act as catalysts for public outrage on social media, and bring field issues to the fore (Rost et al., 2016). Different types of issues, including controversial practices, organizational incompetence, and misconduct may have different impact on the strength, length and breadth of a firestorm (Einwiller et al., 2017; Hansen et al., 2018). Issues are subjective, change over time, and are socially constructed by actors through framing (Furnari, 2017; Hoffman, 1999). Social media allow for a plurality of issue framings and affect how such framings change over time.

First, the subjective nature of issues means that the same information can be interpreted differently by different actors. Actors who share a collective identity usually come up with collaborative issue frames, while those who have little in common may end up with competing frames (Furnari, 2017; Polletta & Jasper, 2001). During firestorms the same content is exposed to many people with diverse opinions, backgrounds, and motives; so an issue may be framed in various ways, including opposite, competing views, or a combination of ideas.

Second, an online firestorm is a continuous process during which various actors interact and frame firestorm related issues. Social framing is an evolving process that may change over time through actors' actions and interactions (Litrico & David, 2017). Social media, which facilitates users' interactions, may enhance coordination between actors with similar issue framings, as well as have an impact on firestorm discourse, changing issue frames over time. For example, in the above-mentioned UA Flight 3411 incident, the initial trigger of the firestorm was the violent removal of a passenger, thus focusing on the issue of customer service and corporate rights. However, as the firestorm progressed, the issue of overbooking emerged, eventually leading to changes in the airline industry.

As framing conflicts evolve issues tend to have periodic prominence. A field issue, that would otherwise remain dormant and settled, might surface during a firestorm, and attract collective attention in the public sphere. For example, in April 2017 Pepsi was forced to remove a new advertisement just within one day, after an online firestorm and intense backlash on social media. In the video the celebrity Kendal Jenner joins a demonstration, before handing a

can of Pepsi to a police officer as a peace offering. Pepsi was accused of borrowing imagery from recent protests against police brutality and of trivializing the Black Lives Matter movement (Victor, 2017).

Cross-media Dynamics

Cross-media dynamics consist of the interaction between social media and the public news media. These dynamics can generate echo chambers (Key, 1966) that worsen online firestorms because content can rebound between social media and news media (Pfeffer et al., 2014). These dynamics are complex and include the role of social media as a mediator for news consumption, as a source for news reports, and the interplay between news and social media.

First, people increasingly use social media, rather than television and print media to consume news nowadays (Bruns, 2017; Olmstead et al., 2011). Significant part of the overall traffic for many public news sites come from redirected links shared on social media (Olmstead et al., 2011). In addition, recommender systems and personalization algorithms of many social media platforms curate content to individuals' online feeds replacing the function of the traditional news editor (Bakshy et al., 2015).

Second, professional journalists increasingly use "media catching", the practice of relying on social media as sources for news generation (Waters, Tindall, & Morton, 2010). Online content produced by citizen journalists and eyewitnesses may be used to break news and often becomes the main source for live data because it is more instant than news media (Murthy, 2011). Moreover, an increasing number of public figures start using social media to express ideas and make statements, making such posts a news topic in itself (Landers, 2017).

Finally, not only do social media transform how news is aggregated and disseminated, but public media affect social media as well. Much of the content shared on social media include external links to public media sites (Myers, Zhu, & Leskovec, 2012). Publications in news media may become a framing resource for controversial topics and debates, thus affecting how truth is constructed online (Russell Neuman et al., 2014).

A reciprocal relationship between news and social media plays an important role during online firestorms. An increase in media coverage of a disruptive event may raise public concerns with an issue, leading to more discussions online and vice versa (Russell Neuman et al., 2014). While discourse and framing of an issue may be different on social media and news media, these frames may affect each other, align or de-align over time, resulting in the multiplicity of public opinions (Van Der Meer, Verhoeven, Beentjes, & Vliegenthart, 2014).

Emotional Amplification

Online firestorms along with other forms of public outrage and protests involve emotionally charged content and communications. Emotional outcomes are believed to be one of the biggest drivers for participation in different forms of digital activism including online firestorms (George & Leidner, 2019; Johnen et al., 2018). Emotions not only accompany firestorms development, but may also ignite a firestorm (Jasper, 1998), while social media act as an echo-chamber for emotional amplification (Toubiana & Zietsma, 2017; Zimmerman et al., 2014).

Toubiana & Zietsma (2017, p. 946) argue that "emotions can be central to institutional dynamics, both as causes and effects of institutional activity," resulting in destabilization and further resettlement of a field. Moreover, emotions are inextricably linked with any collective action and may act as a driver of recruitment, bringing the sense of collective identity, goals, and motivation for participating individuals and organizations (Jasper, 1998; Jasper & Poulsen, 1995a). Many firestorms incidents can be seen as "moral shocks" (Jasper & Poulsen, 1995b) where emotions are coupled with people's beliefs and perceptions of what is right or wrong. Moral shocks may make people engage in collective action regardless of their personal involvement or the participation of their social network in a firestorm (Jasper, 1998).

In addition, social media allow massive-scale emotional contagion, which does not require non-verbal clues or in-person interactions between individual (Kramer, Guillory, & Hancock, 2014). While in real-life communication non-verbal signs are important for emotional transfer, on social media just seeing the textual status or "overhearing" emotions through one's news feed is reportedly sufficient for emotional contagion (Kramer et al., 2014).

Studies of the relationship between emotions and information diffusion on social media show that emotion-laden content is shared more often and spreads faster than neutral content (Berger & Milkman, 2012; Fan, Xu, & Zhao, 2018; Stieglitz & Dang-Xuan, 2013). Because unpleasant experiences and bad impressions are quicker to form, easier to recall and are more resistant to disconfirmation than positive ones (Baumeister, Bratslavsky, Inkenauer, & Vohs, 2001), stakeholders' expression of negative emotions during a firestorm may have a long-term negative effect for an organization. And the information resulting in negative emotions does not even need to be true: a recent study shows how junk news is often accompanied by fear, disgust and surprise, and are likely to be shared more than true stories (Vosoughi, Roy, & Aral, 2018).

Emotion intensity and richness on social media can be in part explained by the disinhibiting effect of mediated online communication (Ott, 2017; Suler, 2004). Because of the

online disinhibition effect, communications on the Internet may thus be highly emotional, including aggressive behaviour, criticism, online bullying, and mocking. Moreover, online communications provide additional opportunities for emotional expression and enable new forms of emotionally-loaded content including creative drawings, songs, etc. (Hauser et al., 2017).

Complexity of Choices

Pfeffer et al. (2014) argued that on social media variegated, sophisticated opinions are difficult to form because people are materially constrained to simple choices expressed in actions such as "like" or "dislike". Many choices on social media are presented to the users in the form of "binary choices," which compel decision-making processes of simple "either-or situations" (Schelling, 1973). Extending Pfeffer et al.'s (2014) notion of binary choices, we recognize that binary choices present themselves in two ways: as the result of material constraints in the *expression* of opinion, and as poor *input richness* in opinion formation (Daft & Lengel, 1984).

On the one hand, user interface design of social media platforms nudges users' behaviour and provides material constraints that simplify the decision to pass on information. For instance, "like" and "dislike" buttons incentivise users to express "binary" rather than gradualist opinions. In addition, the possibility to "share" information without any requirement for prior comprehension and actual consumption of the content potentially increases the easiness of information propagation.

On the other hand, the limits on information availability and richness influence opinion formation on social media. Compared to news media, content online is often presented in short forms which take less time to comprehend and are easier to share. For instance, Twitter, with its limited number of characters per tweet, discourages lengthy posts, blurring the differences between important and trivial information (Ott, 2017; Pfeffer et al., 2014). Moreover, users tend to make judgements about what is important or interesting based on simple proxies such as number of views, likes or retweets. More than half of online users express a natural bias against long posts, spending fewer than 15 seconds actively on a page (Haile, 2014). There is also evidence that while the presence of URLs may increase "retweetability" (Suh, Hong, Pirolli, & Chi, 2010), almost 60% of all links shared on social media aren't actually clicked on at all (Gabielkov, Ramachandran, Chaintreau, & Legout, 2016). This implies that people may share articles without reading them but simply due to eye-catching headlines (DeMers, 2016). Platforms may contribute to this tendency by mediating how content is displayed in a way that

may obscure the relayed content. Lengthy posts are often minimized or collapsed, so that by default users see only limited information.

During online firestorms this property of social media contributes to information propagation, since the decision to share information does not require much effort anymore. For this reason, e-petitions and boycotts proliferate on the Internet: it is much easier to sign with a click, or use a hashtag, than to collect real votes. Simple individual decisions to "like" or "share" make content more visible for others, especially on platforms where topics are rated by users and selected on public landing pages based on a tally of votes (e.g., Digg, Reddit).

Binary choices may also affect firestorm dynamics because short messages on social media often do not consider context and the complexity of a firestorm issue. Factual statements, lengthy exposés, and public releases may remain in background, while the online community cherry-picks single quotes, shares an arousing, emotion-triggering video, or retweets decontextualized facts and interpretations. Critics thus argue that platforms like Twitter increasingly level public discourse into one that is simple, impulsive and often uncivil (Ott, 2017). The technical limitations of social media platforms may also limit field actors in how they can communicate or defend themselves during a disruptive event. Organizations may struggle to have a constructive dialogue online or accurately interpret stakeholders' opinions, when they are expressed in a binary way on social media.

3.3.4 Field Actors: Networks of Relationships (Quadrant 4)

The last four properties in our conceptual framework (Quadrant 4) are dealing with field actors as networks of relationships. In other words, these properties describe how the social structure of relationships of field actors, expressed in such notions as status, leadership, power and control, affect online firestorms dynamics. Online firestorms usually do not have any formal organization or leadership. We discuss how multiplicity and volatility of online status and two-way symmetrical communication between field actors online allow for a shift in the power relations and provide new opportunities for field challengers. Finally, socio-technical regulatory complexity on social media in the absence of centralised control has several consequences for online firestorms development.

Organization and Leadership

Social movements and protests in the pre-digital era usually required formal leadership and cohesive organizational structures. The Internet, however, has significantly changed activism and decreased the importance of formal organization and leadership (Ayres, 1999).

Unpacking Online Firestorms in Organizational Fields

Online mobilization, unlike traditional models of collective action, is notable for its bottom-up open organization in absence of formal structure, physical membership or coordinating body (Earl & Kimport, 2011). The contemporary media environment offers new ways of recruitment and coordination (Bimber et al., 2005). For instance, instead of assigning a physical location for gatherings or a dedicated place for sharing related information, people may use special hashtags to indicate their affiliation with certain context, movement or event as well as to search relevant content across the Internet (Bruns & Burgess, 2011; LeFebvre & Armstrong, 2018). Thus, social media enables simple and fast formation of new groups, including large-scale decentralized coordination of protests (Steinert-Threlkeld, Mocanu, Vespignani, & Fowler, 2015).

Online leadership also emerges in new forms. Scholars argued that the shared nature and dyadic relationship of leadership is intrinsic for online communities, where everyone can be a leader and a follower at the same time (Johnson et al., 2015). Many recent e-mobilizations proclaim themselves "leaderless": coordination may emerge chaotically and come from any member of the community at any given time. However, even when online leaders are identifiable, they are sometimes described as reluctant and soft (Gerbaudo, 2012). Anonymity in online environments allows them to conceal their real identities and share much less risk and responsibility than those leading crowds on the streets. Moreover, while being central in information dissemination online (González-Bailón, Borge-Holthoefer, & Moreno, 2013), leaders of online communities sometimes lose their influence and visibility once the movement goes offline and turns into physical protests (Gerbaudo, 2012).

For an organization facing an online firestorm, identification of leaders and emergent groups might be challenging since much communication online happens simultaneously without prior planning. When posting information on social media people not only share ideas or express their views but also evoke reaction and entail responses, creating a space for collective action (Gerbaudo, 2012). Faced with thousands of emotional voices and no specific leader, organizations may struggle to identify a counterpart for dialogue and conflict negotiation.

Communication Symmetry

Communication symmetry is present when source and receiver "are equal participants in a communication process that seeks mutual understanding and balanced, two-way effects" (Pearson, 1989, p. 71). Traditionally communications during a field crisis were unidirectional: an organization would publish its statement, use news media and other formal channels to

express its position, leaving little opportunity for people to directly reply or engage in a dialogue. Social media, however, is changing the practice of public relations and strategic communications for many organizations (Macnamara & Zerfass, 2012; Nitins & Burgess, 2014). Online interactions allow two-way communication between organizations, field actors, and the public, thus providing an opportunity for various stakeholders to directly confront organizations, expect responsiveness, and hold them accountable for their actions and statements. Social media provide consumer watchdogs with new tools for fact-checking and stimulate greater demand for transparency. Power's (1997) logic of audit now applies to almost all aspects of organizational fields, which have become evaluative landscapes, putting pressure on organizations and field actors to be "auditable" and transparent.

Communication symmetry is expressed in the "status equalization" of social media since online communications can be devoid of social cues that prevail in face-to-face interactions, including others' organisational position, age, appearance (Sproull & Kiesler, 1986). Such communication symmetry along with the demand for transparency allow for a shift in the power relations in organizational fields in the online environment: social media provide platforms for field challengers to raise issues and confront incumbents (Fligstein & McAdam, 2011), potentially enabling social change in firestorms episodes (Earl & Kimport, 2011).

Status Hierarchy

Online firestorms are also embedded in the status dynamics at play in an organizational field. Status is considered as a part of cultural capital (Bourdieu, 1986) based on the possession of socially valuable attributes, and the degree of respect and admiration by others (Magee & Galinsky, 2008). Social status also depends on the relationships one has with others in the network (Podolny & Phillips, 1996) and is defined as an actor's relative position in a social hierarchy (Sauder, Lynn, & Podolny, 2012). While the logic of online status in large resembles the logic of traditional social status, we argue that online status is more volatile and has some new attributes.

First, traditional status is usually accumulated over substantial period and, thus, is relatively stable. However, in the online world users may not only easily migrate within networks making status volatile, but also be simultaneously a member of numerous groups and communities possessing different corresponding status in each of them (Levina & Arriaga, 2014). Status multiplicity is greater in more fragmented audiences (Kovács & Liu, 2016) which is particularly true online where many communities with diverse and polarized logics are present.

Second, interactions between people with different social statuses tend to be limited in the real world due to certain status constraints or unwillingness to risk status position when interacting with participants of different statuses (Sauder et al., 2012). On social media, however, limitations of status hierarchies are virtually absent, allowing horizontal communications between various participants (Johnson et al., 2015). For instance, mentions and tagging empower individuals to address their posts directly to users with high social status and vice versa.

Status indicators online may be different as well. Digital status often depends on "virtual" markers such as number of subscribers, followers, views or shares (Levina & Arriaga, 2014). Differences in status criteria lead to a phenomenon when an individual's online status may be at odds with offline social status or status in other communities of the same social network. Many social media platforms provide their own tools to accumulate status and assign different ranking systems, contributing to status volatility across online communities (Levina & Arriaga, 2014).

There are several implications of online status volatility and multiplicity on online firestorms dynamics. Assessing social status without consideration of online status may bring a risk of missing important participants who are able to propagate crisis and influence a crisis' narrative (Etter, Ravasi, & Colleoni, 2019). Social media platforms empower individuals and create a new type of influential stakeholders who can compete and challenge field actors with disproportionally greater status than their own (Bernoff & Li, 2008). At the same time one's network position may not be a predictor of a user's influence and information spread (Cha, Haddai, Benevenuto, & Gummadi, 2010). Failing to recognize differences between offline and online statuses as well as the differences between multiple statuses one may possess in different audiences may also lead to underestimation of actors' moves, since participants' actions are driven by local rather than global status (Kovács & Liu, 2016).

Regulatory Complexity

Despite changes in online platform regulations over time and debates around net neutrality (Hern, 2016) the Internet remains substantially different from offline communication in its lack of formal, central authority and governance (Johnson & Post, 1996). On social media regulations are complex and present a new form of socio-technical governance, driven by the interplay of online users, moderators and platforms. This socio-technical governance apparatus mediates the evolution and impact of online firestorms in organizational fields.

Social media platforms define and enact rules that govern the kinds of activities that they permit. Such rules may emerge as a result of community collaboration in the form of group self-management and participatory governances (Kittur, Suh, Pendleton, & Chi, 2007). Many platforms may also rely on a hierarchical approach by setting regulations in their private capacity, while still using the help of specially assigned "guardians" (e.g., moderators, site managers) to oversee compliance with the rules and maintain order (Gillespie, 2017). In addition, many platforms use the crowd as a distributed enforcer of rules, by making monitoring and reporting tools available for all users. Such tools, along with other mechanisms that allow users to rate content, have a strategic value as they reflect community preferences and concerns, and provide rhetorical legitimation for platforms to decide how to treat contentious content (Crawford & Gillespie, 2016; Gillespie, 2017).

In addition, platforms rely on algorithms to monitor and regulate users' activities. Some platforms may automatically detect and prohibit certain content (e.g., hate speech, violent and graphical images, adult content, spam), thus preventing online users from publishing it. Software robots (i.e. bots) may revert noncompliant changes to preclude online vandalism (Müller-Birn, Dobusch, & Herbsleb, 2013). Online algorithms are capable of restricting access for unregistered and unauthorised users, or block individuals who have violated platform rules. Bots and other forms of algorithmic governance, while initially created by humans, may work automatically and their enforcement may stay unknown or unnoticed by users (Müller-Birn et al., 2013).

Regulatory complexity on social media may have several consequences for online firestorms in organizational fields. In the absence of centralised control and formal authority, firestorm development may be less predictable with more opportunities to weave in various directions as diverse views and debates arise during crisis. Many social media sites claim to be impartial and "hands-off safe harbour" for diverse opinions and ideas (Gillespie, 2017). Thus, the public discourse of a firestorm's focal issue on social media may vary from its coverage in news media, as the latter have to comply with professional standards and practice (Etter et al., 2019). The complexity of the gatekeeping and the "publish-then-filter" approach (Shirky, 2008) also contribute to the firestorm propagation, because information may be published, seen, and shared through the network before any control happens. This context favours the spread of rumours, hoaxes, and untrustworthy information which may cause or intensify a firestorm.

3.4 Online Firestorms in Organizational Fields: Towards a Research Agenda

Our framework highlights various aspects of online firestorms, thus providing an opportunity for a programmatic approach to the empirical study of how online firestorms vary in their consequences for organizational fields. Past studies have already been using combination of various properties to investigate online firestorms (see last column in Appendix 3A) but the relationship between these properties remains mostly unknown. Thus, our framework could provide the basis for the comparative and configurational study of online firestorms, helping to understand when and how a firestorm will have a field-level impact or lead to social changes (cf. Fiss, 2011).

Our conceptualization of online firestorms can also stimulate the development of a measurement framework to compare and evaluate the role of the various properties. The development of measurements is a challenging task because online firestorms have fuzzy temporal and spatial boundaries. Some promising ways to study firestorm properties and investigate the role of social media in organizational fields include combining methods developed in the computational sciences with organizational theories (e.g., Bail, 2014; Golder & Macy, 2014). As phenomena that primarily take place online, scholars can leverage large datasets and digital trace data produced by online firestorms on social media platforms (Tinati, Halford, Carr, & Pope, 2014; Whelan, Teigland, Vaast, & Butler, 2016). While augmenting digital trace data with qualitative and behavioural data from surveys, interviews, or netnographic observations appears particularly suitable for the study of online firestorms (Berente, Seidel, & Safadi, 2019; Johnson, Gray, & Sarker, 2019), there are several challenges associated with such approach. First, platforms may control the sampling process and impose rate limits on the amount of data one can obtain, resulting in selection bias and jeopardizing sample representativeness (Morstatter, Pfeffer, Liu, & Carley, 2013). The availability of social media data presents another challenge due to the increasing access restrictions imposed by platforms on their Application Programming Interfaces (APIs) since the Cambridge Analytica scandal (Freelon, 2018; Walker, Mercea, & Bastos, 2019). Finally, even if relevant data is available, the explosiveness and ephemeral nature of firestorms make these hard to track in real time, in a way that captures their emergence.²⁰ Human ethics committee and institutional

²⁰ For instance, firestorms that occur on Twitter can be studied by collecting digital traces through its APIs. The free APIs provide two endpoints which differ in the amount of data that can be collected. As of February 2020, the Search API is limited to 7 days and 3,200 tweets per keyword, whereas the Streaming API practically allows researchers to tap into Twitter's firehose for up to 400 keywords and 5,000 users. The Search API limitations severely restricts researchers' ability to investigate firestorms retrospectively, and researchers need to identify

review boards could also present challenges for securing timely approval for the collection of data about firestorms when they break out.

Our framework also has implications for other social media phenomena that are conceptually close to online firestorms. It is hard to clearly identify the position of online firestorms in the hierarchy of digital activism activities (George & Leidner, 2019), because online firestorms are often accompanied by other forms of Internet activism, such as online social movements, hacktivism, and Internet vigilantism (Cardoso et al., 2019). For example, some scholars refer to online petitions as part of online firestorms (Rost et al., 2016) but not all firestorms necessarily involve digital petitioning or align with organizational social movement. Interestingly, some social movements may leverage a firestorm (e.g., activists of the Black Lives Matter Movement against Pepsi commercial), while other may emerge as a result of a firestorm (e.g., #MeToo movement). We therefore see an important need for further inquiries on questions such as: what is the relationship between firestorms and other forms of digital activism, how online firestorms may contribute to the formation of, recruitment and engagement with social movements, and how grassroots movements and non-governmental organizations may leverage firestorms to promote their agendas. Research on such interplay will not only inform further conceptualization of online firestorms but also contribute to broader literature on social movements and digital activism, and ultimately how social media is used to enact changes in organizational fields.

Apart from the need for further conceptualization and definition of the online firestorms phenomenon from other constructs, below we also suggest three broad research areas: the role of social media platforms during firestorms, an attention to the agency of field actors, and the cross-cultural and field boundaries of social media outrage.

First, a majority of studies use Twitter and Facebook as the main source of social media data about firestorms. However, our framework highlights that the spread, discourse and issue framing of a firestorm may actually vary depending on affordances and algorithmic design of the platform, including its type of ties, curation and recommendation systems, constraints (e.g., limited length of posts), while acknowledging that those platforms are embedded in a cultural and institutional context of their own. For example, while the UA firestorm trended both on the Chinese microblogging website Weibo and on Twitter, different framing apparently took place on these platforms: Weibo users were reportedly outraged by alleged racial

breaking firestorms quickly to use the Streaming API to avoid missing out on valuable data about the incubation of a firestorm. Premium paid APIs offered by Twitter alleviate this issue but doesn't fully solve it. https://developer.twitter.com/en/docs/basics/rate-limits (accessed 1 August 2020)

discrimination, while Twitter users were reportedly more outraged by the violent treatment of a passenger and the legitimacy of overbooking as practice in the airlines industry. Therefore, questions to be asked are how information transmission happens through these platforms and what role do social media platforms play on the meaning and interpretation of the same information and overall dynamics of online firestorms.

Platforms not only affect the dynamics of online firestorms but may also become the target of a firestorm. For example, Facebook found itself in the middle of a firestorm, when it removed an iconic Pulitzer prize-winning photograph of a Vietnamese girl fleeing napalm bombs. The firestorm led to heated debates in the broader platform organizational field about the limits of free speech online, the practice and governance of content moderation by platforms, and the regulation of platforms (Levin, Wong, & Harding, 2016; Scott & Isaac, 2016). In addition, some platform affordances, such as live streaming services that are available on Facebook, YouTube, and Twitter, can make platforms the target of firestorms when they are used for nefarious and sinister ends (Gunia, 2019; Stewart & Littau, 2016). Such online firestorms are not yet studied but present an interesting phenomenon where the motivation for a firestorm is also a medium for its development.

Second, multiple field actors, including individuals, groups and organizations may be involved in a firestorm. Arguably, our framework shows that the conception of field actors needs to be broadened to include non-humans because of the important role algorithms and bots play in the spread of information online (Shao et al., 2018). It is still an empirical question whether social media bots can become central actors in coordinating attempts to circulate certain information in order to manipulate public opinion and alter discourse during episodes of field contention (Salge & Karahanna, 2016; Stella, Ferrara, & De Domenico, 2018)

A promising area for research is to investigate actors that drive online firestorms and the interplay between them. Johnen et al. (2017) have investigated the factors that motivate users' participation in an online firestorm "in terms of moral concern, consensus, hostility, disproportionality, and volatility" (Johnen et al., 2017, p. 2). We suggest that further work in this direction should be considered for actors on different levels of analysis because online firestorms may have a spill-over effect across multiple levels and field actors. Currently little is known about how an individual's actions affect firestorm dynamics and when a firestorm against a single actor might taint associated organizations and turn into a field-level movement, such as the firestorm against American film producer Harvey Weinstein that turned into the worldwide "#MeToo" movement against sexual harassment. Another question to be asked is

whether online firestorms against individuals would have temporal, structural and other differences compared to firestorms against organizations.

Our framework also shows that firestorms are process-based phenomena, making longitudinal approaches that track events and actions over time rather than cross-sectional approaches better suited to identify the social changes driven by online firestorms. The continuous nature of the phenomenon suggests that the definition of the boundaries of a firestorm in time and space is paramount, but in reality this is a particularly challenging task. How to pinpoint its start and end? How long should the time frame be for observing changes? Given the possibility that firestorms might involve field interlopers that challenge its boundaries, which actors and issues involved in the firestorm development to consider?

Finally, because values, language and geographical distance affect the structure and dynamics of protest campaigns emerging and coordinated through social media (Gelfand et al., 2011; González-Bailón & Wang, 2016; Zimmerman et al., 2014), firestorms are also subject to those cross-cultural considerations. Therefore, a promising area for investigation is: how different are the public discourse and issue framing across different cultural and field boundaries, when a firestorm spreads beyond one nation or crosses over many adjacent fields? We should note that research on cross-cultural firestorms may present certain technical and methodological challenges. Finally, there is a need for more cross-language computational tools that will allow to investigate firestorms across cultural and geographical boundaries.

3.5 Conclusion

This paper conceptualizes online firestorm dynamics through 16 properties that describe the critical aspects related to information and field actors during online firestorms. These properties present a conceptual framework acknowledging both the material aspects of technology and the social construction at play in firestorms. The framework distinguished between: 1) *technological* versus *social* properties; and 2) properties related to *information* versus properties related to *field actors* during online firestorms. Our conceptual framework takes into account both information network perspective and a field-level perspective, and four groups of properties provide multiple future lines of inquiry about this quintessential aspect of the networked public sphere.

We explain how public outrage changes due to technical and social aspects of social media. Compared to outrage in the pre-digital era, online firestorms are characterized by high speed and large volume of information. This information is often emotionally charged and spreads quickly through ties of various strength and network clusters. The low cost of firestorm initiation and participation, along with symmetrical communications online, allow a large amount of people with various backgrounds and statuses to participate in the public outrage, resulting in the multitude of issue framings and mashup of institutional logics. Social media allow unrestricted information flow and provide the possibility for firestorm recurrence because of the digital footprints they leave. At the same time, online information available to field actors might be limited by filter bubbles and the majority illusion, while platform affordances constrain opinions to low complexity choices. Cross-media dynamics along with network dynamics influence individual's decision making. New forms of coordination, leadership and governance are also conducive to online firestorms.

Our proposed framework makes explicit the socio-technical complexity of online firestorms, shedding light on how firestorms may occur, evolve, and eventually result in social change. Considering the growing prevalence of firestorm instances in today's digital world, with often unpredictable evolution and consequences, the investigation of this phenomenon should be of special interest for both scholars and practitioners. This paper provided an encompassing conceptualization of the firestorm's phenomenon, yet many unanswered research questions and methodological challenges remain. We hope that our work will contribute to clarifying the construct of online firestorm and its measurement, stir discussion about their properties and connection to field level changes, and provide impetus to further inquiries on this topic. Given the ubiquity of social media in organizational and social life nowadays, it is critical that scholars bring theoretical rigor to the unresolved debate around the utopian or dystopian potential of social media. The complexity of online firestorms demonstrates that the answer might be far from simplistic or definitive.

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Chapter 4: Beyond Clicktivism: What Makes Digitally Native Activism Effective? An Exploration of the Sleeping Giants Movement²¹

Abstract

This paper explores how successful digitally native activism generates social change. Digitally native movements are initiated, organized, and coordinated online without any physical presence or pre-existing offline campaign. To do so, we explore the revelatory case of Sleeping Giants – an online movement that led more than 4,000 organizations to withdraw their programmatic advertising spend from Breitbart, a far-right publisher. Analysing 3.5 million tweets related to the movement along with qualitative secondary data, we used a mixed method approach to investigate the conditions that favoured SG's emergence, the organizing and coordinating practices of the movement, and the strategic framing practices involved in the tuning of the movement's language and rhetoric toward its targets. Overall, we contribute to research on online movements, and shed light on the pivotal role of peer production work and of language in leading an impactful online movement that aimed to counter online disinformation and hate speech.

4.1 Introduction

In November 2016, shortly after Donald Trump was elected as President of the United States of America, an anonymous Twitter handle called "Sleeping Giants" (SG) started publicly notifying organizations whose ads appeared on Breitbart News, an online publisher known for spreading far-right narratives (Benkler, Faris, & Roberts, 2018). With the aim "to make bigotry and sexism less profitable,"²² SG leveraged social media to encourage users to pressure organizations to withdraw their ads from Breitbart (Hao, 2017; Ingram, 2017). The SG movement shed light on the opacity of programmatic advertising, and incited more than 4,000 organizations to blacklist Breitbart, allegedly reducing its ads revenue by more than 90% (Embury-Dennis, 2019). Along with the Women's March and other online movement like MoveOn, VideoLab, and #GrabYourWallet, SG was part of the larger "Resistance" movement against the Trump presidency (Meyer & Tarrow, 2018). Initially gaining recognition for its anti-Breitbart campaign, over time the target of SG's activism expanded towards advertisers

²¹ This paper was accepted on June 22, 2021 to Social Media + Society journal and was published on August 4, 2021 (<u>https://journals.sagepub.com/doi/full/10.1177/20563051211035357</u>); Open Access License CC BY-NC 4.0 (Creative Commons Attribution-Non Commercial 4.0 International).

²² From SG Twitter profile: <u>https://twitter.com/slpng_giants</u>, February 2021: <u>https://web.archive.org/web/20210225155421/https://twitter.com/slpng_giants</u>

on Fox News, contractors for the Trump administration's family separation policy, and online platforms that allowed the monetisation of disinformation and hate speech.

As a case of online activism (Freelon, Marwick, & Kreiss, 2020), SG stands out in several ways. First, SG represents an emerging yet not well understood type of *digitally native activism*, with the tactical repertoire of the movement being initiated, organized and coordinated online, making SG a fully online "e-movement" without any physical presence, pre-existing offline campaign, or significant offline mobilization components (Earl, Kimport, Prieto, Rush, & Reynoso, 2010; Schmitz, Dedmon, Bruno-van Vijfeijken, & Mahoney, 2020). Moreover, the digitally native quality of SG and its original target (the far-right publisher Breitbart) distinguishes SG from other social movements that have significant offline mobilization components, such as the human rights, environmental, animal welfare, and Black Lives Matter movements for instance.

Secondly, social media movements are often criticized for "slacktivism" or "clicktivism," because of the little to no change in political and social structures they appear to generate (Bozarth & Budak, 2017; Couldry, 2015; Gladwell, 2011; Morozov, 2011). SG, in contrast, can be considered a successful case of online activism, given its tangible impacts on Breitbart's revenues and on large advertisers' blacklisting, the diffusion of the SG movement globally, and the adoption of SG's tactical repertoire by similar movements (e.g., #StopFundingFakeNews).

Finally, the SG case provides insights into how online movements transform and sustain once they have reached their immediate goals. While some online movements have had staying power, partly by branching out into offline mobilization (#MeToo, Black Lives Matter), online movements tend to be rather ephemeral and short-lived (Alaimo, 2015). Over time, SG's focus evolved toward broader agendas, targets, and tactics. SG's targets shifted beyond Breitbart to include online platforms, conservative media, and the Trump administration.

The objective of this paper is to explore SG as a revelatory case of a successful digitally native online movement, to understand *when and how online activism generates social change*. We use an exploratory case study approach (Yin, 2009) and mixed methods (Whelan, Teigland, Vaast, & Butler, 2016) shed light on three dimensions of the movement: 1) *opportunity structures*, the conditions that favoured SG's emergence; 2) *mobilizing structures*, the participation, organizing, and coordinating patterns of the actors that compose SG's online presence on Twitter; 3) *framing tasks*, the strategic articulation and tuning of the movement's language and rhetoric toward its diversity of targets.

The paper is structured as follows. In the background section, we explain the issue of programmatic advertising and the theoretical framework that underpins our analysis. We then

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describe the mix of quantitative and qualitative methods that we relied upon for this exploratory case study. With regards to the three dimensions listed above, our findings respectively show (1) how SG exploited current events to generate peaks of attention to the movement and pressure its targets, (2) how it relied on a novel form of crowdwork driven by a tiny core of dedicated workers that was amplified by a large mass of movement participants, and (3) how SG used diagnostic, prognostic, and motivational framing in strategically differentiated ways towards its targets. Put together, these dimensions shed light on the factors that characterized the online activism of SG and made it particularly effective.

The paper concludes with a discussion of several implications of our findings for research on online activism. In particular, we highlight how the tactics employed by SG constitute an innovation in the repertoire of contention used by corporate activists (Briscoe & Gupta, 2016; King & Pearce, 2010) by going beyond hashtag activism (Jackson, Bailey, & Welles, 2020) and relying upon peer production (Kittur et al., 2007); how episodes of emotional intensity affect the commitment of participants to online activism (Jasper, 1998); how the Internet and its infrastructure has become not only an arena in which contentious activity takes place, but also a target in itself (Ayres, 1999; Marantz, 2020; Nagle, 2017); and how social media allows online movements to hold persuasive and confrontational stances simultaneously. We also raise questions about the viability of online activism, as a form of private politics, to influence platform self-regulation toward issues of disinformation and hate speech.

4.2 Background

4.2.1 Programmatic Advertising

Programmatic online advertising via ad brokers, such as the Google Display Network and Facebook's Audience Network, has become an intrinsic part of the web's fabric nowadays. Programmatic advertising uses "real-time bidding" – an auction technology, where advertisers submit bids for an impression, which is triggered when a user visits the website of a publisher that is monetized via advertisements. The process is fully automated and happens in milliseconds before the page is loaded for the user (UK Information Commissioner's Office, 2019). Bidding decisions are governed by algorithms, which leverage various digital media data (e.g., page content, user profile data) to automatically place ads across a large range of websites (Sinclair, 2016). For example, Google's Display Network covers over two million websites and apps (Braccialini, 2020). This omnipresent technological infrastructure thus

captures the traces of user flows to control and shape users' experience on the web. In essence, it embeds what van Dijck & Poell (2013) call the connectivity, programmability, datafication, and popularity principles of the logic that underlies how social media restructure social interactions. The interactions that users encounter on social media and the web more generally (connectivity) are determined by a bundle of auction and ad allocation algorithms that are tweaked by designers over time (programmability) as more user traces are captured and processed (datafication) about the actors, channels, and experiences that users seek and interact with (popularity). In contrast to mass media advertising, programmatic advertising leverages the power of these principles to fundamentally alter how corporations and other actors connect with specific users, via micro-targeting and real-time algorithmic decisions.

Yet, while programmatic advertising allows organizations to have a wide reach, efficiently targeting relevant audiences or locations, it is criticized for its opacity (Yuan, Wang, Li, & Qin, 2014). Advertisers have little control over ad distribution and are thus mostly unaware of the specific websites where their ads appear. Platforms provide few affordances to audit the targeting and allocation algorithms of this technology, and those few that are available have been found deficient and incomplete (Andreou et al., 2019; Edelson, Lauinger, & McCoy, 2020; Matias, Hounsel, & Feamster, 2021). Therefore, programmatic advertising involves a reputational risk when ads appear on sites that involve not only brand-misaligned content, but also disinformation, hateful statements, or immoral content (Mostrous, 2017). This opacity has enabled hate and disinformation to spread and get monetized, potentially generating real-world harms such as discrimination, affective polarization, and deviance from public health guidance (Ali et al., 2019; Finkel et al., 2020; Silva & Benevenuto, 2021). Several avenues have been proposed to shed light on how platforms govern programmatic advertising, including regulation and policy changes (Gillespie, 2018). What has been unexplored so far is the role that social movements can play in promoting reform and greater transparency, a primary objective of Sleeping Giants' activism.

4.2.2 Theoretical Background

Due to the increasing shift of activism to the online realm (Freelon et al., 2020), there has been renewed interest in examining how the affordances of digital technology affect and change the practices of social movements, and thus theories of collective action (Bennett & Segerberg, 2012; Earl & Kimport, 2011; George & Leidner, 2019; Selander & Jarvenpaa, 2017). Studies show that activists use digital technology to engage in new types of activism (George & Leidner, 2019), develop new action repertoires (Selander & Jarvenpaa, 2017), as well as transform mobilization, coordination, and participation in collective action (Brunsting & Postmes, 2002; Earl, Hunt, & Garrett, 2014; Earl & Kimport, 2011; Schmitz et al., 2020). In parallel, scholars have examined how activists engage in private politics toward corporations, but the literature on how digital technology fits in their tactical repertoire is still nascent (Briscoe & Gupta, 2016; Luo, Zhang, & Marquis, 2016). Our analysis of the Sleeping Giants movement extends these lines of scholarly works. In particular, we rely on the framework proposed by Garrett (2006) about the emergence, evolution, and outcomes of digital social movements. Garrett's (2006) framework is based on the conceptual integration of McAdam, Tarrow & Tilly (1997), which is composed of three dimensions: opportunity structures, mobilizing structures, and framing. The framework allows us to highlight complementary aspects of the conditions that contributed to the emergence and growth of SG, how the movement harnessed social media affordances to facilitate collective action, and how the unusual tactics of Sleeping Giants' activism led to material outcomes.

Opportunity structures

Opportunity structures refer to exogenous conditions that favor the emergence of collective action (Garrett, 2006; Tarrow, 1996). Specifically, opportunity structures emerge during changes in political leadership and periods of political instability, when potential insurgents mobilize and collective actors feel inspired to join social movements and protest activities (Arzheimer & Carter, 2006; Gleditsch & Ruggeri, 2010). They also include various changes to economic, cultural and institutional conditions that may catalyse social movement activities (Arzheimer & Carter, 2006; McCammon, Granberg, Campbell, & Mowery, 2001; McCammon, Muse, Newman, & Terrell, 2007).

Moreover, opportunity structures may be *discursive* when they manifest not only in the material configurations of resources and power relationships but also in the different attitudes and cultural schemas that circulate in the public sphere (Giugni, 2009; Koopmans & Statham, 1999; McAdam, 1982). For example, women's suffrage movements that arose in the mid-19th century around the world were affected not only by events such as World War I, but also by the changing attitudes towards women's role and gender relations in society (Ferree, 2003; McCammon et al., 2001, 2007).

Mobilizing structures

Mobilizing structures refer to mechanisms that support social movement by enabling participant attraction, coordination of work, and leadership practices. Following Garrett's (2006) framework we examine three aspects of mobilizing structures: participation levels in the movement, contentious activity by participants, and organizational issues within the SG movement.

Participation levels

Compared to offline protest activities, participation and engagement in online activism is cheaper, easier, and provides more recruitment opportunities that – in contrast to what was previously suggested to be a key factor for successful mobilisation – do not always depend on institutional support or resources (Bimber, Flanagin, & Stohl, 2005; Earl & Kimport, 2011; McCarthy & Zald, 1977), although those can still matter (Schradie, 2018). While offline activism tends to require an infrastructure to sustain prolonged contention, online activism can generate impact from a small core of highly committed participants if they are embedded into a supportive network of low commitment participants (Bennett & Segerberg, 2012; George & Leidner, 2019).

In theory, social media can thus facilitate wider participation in collective action, indicating more powerful movements (Tilly, 1999). However, while online social movements may have thousands of participants, many of those may remain passive (i.e., "lurkers") by not engaging in social movement activity or interactions (Tagarelli & Interdonato, 2015). The motivation to join a campaign, the retention rate of participants within a movement, and participants' commitment may also vary depending on the drivers for their initial participation, including common interest, ideology, emotional outcomes, and moral outrage (George & Leidner, 2019; Jasper, 1998; Jasper & Poulsen, 1995).

Participation in online activism involves a variety of roles and network positions, which may not have the same activity levels. Participants differ in the human and social capital that they bring to a movement (Diani, 1997). Differences in reach, susceptibility, and influence among network participants have long been recognized as consequential for the dynamics of information diffusion processes (Himelboim & Golan, 2019; Watts & Dodds, 2007). For example, public celebrities (Wiegmann, Stein, & Potthast, 2019) may play an important role in spreading information about the movement and motivating others to participate in collective action because they act as network bridges (González-Bailón, Borge-Holthoefer, & Moreno, 2013; Himelboim & Golan, 2019; Isa & Himelboim, 2018). Given that online collective action

takes place via the linking of network clusters (Bennett & Segerberg, 2012), influencers that span structural holes (Burt, 2005) help trigger the cascades that are inherent to online firestorms (Pfeffer, Zorbach, & Carley, 2014).

Contentious activity

Digital technology has enabled new repertoires of contention, that is, the range of protest and mobilization tactics available to a movement (Earl & Kimport, 2011; Rolfe, 2005). With online tools, consumers and civil society can act as watchdogs by imposing transparency and holding organizations accountable for their actions (Lyon & Montgomery, 2013; Waldron, Navis, & Fisher, 2013). This may lead to a change in power relationships, a *reverse panopticon* of sorts (Garrett, 2006, p. 11), where citizens are able to fact-check, monitor and scrutinize organizations' activities, pressuring them toward corporate responsibility.

However, there is an ongoing debate whether these new forms of contentious activity have any real-world impact. Critics often refer to "slacktivism" (Skoric, 2012) or "clicktivism" (George & Leidner, 2019) when describing participation in contentious online activities which require little effort and commitment (e.g., signing online petitions, retweeting others, mobilizing around hashtags), arguing that such actions do not facilitate substantive change (Bozarth & Budak, 2017; Gladwell, 2011; Morozov, 2011).

Still, some form of 'hashtag activism' appears to have been effective in changing public discourse and bringing attention to movement grievances (Bonilla & Rosa, 2015; Freelon, McIlwain, & Clark, 2018). Understanding the effectiveness of online forms of contention thus requires relaxing the assumption that online activism is either universally effective or not, toward a more nuanced examination of what forms of online activism are effective, and under what conditions.

Organizational issues

Online activism differs not only in the opportunity structures and forms of contentious activity, but also in the tools and actions used for organization, leadership and coordination online (Earl et al., 2010; Earl & Schussman, 2003). Early cases of online activism used digital technologies mostly to distribute information and provide support for offline protest activities (e.g., Ayres, 1999; Rosenkrands, 2004; Tarrow, 1998). But over the last decades, activists explored new ways to mediate social activism through digital technologies (Bennett & Segerberg, 2012; George & Leidner, 2019), leading to the emergence of "online organizing" (Earl et al., 2010) or "digitally native" activism (Schmitz et al., 2020): entire movements are

initiated, organized and coordinated online, without any respective physical presence or offline component.

Social media and digital technology allowed the emergence of social movements that are decentralized, non-hierarchical, and geographically distributed (Earl & Schussman, 2003; Garrett, 2006). The role of leadership in such movement is transformed, since any participant can be simultaneously a leader and a follower (Johnson, Safadi, & Faraj, 2015), with decision making and coordination shifting between various members over time or based on evolving circumstances (Cardoso, Boudreau, & Carvalho, 2019; Tye, Leong, Tan, Tan, & Khoo, 2018). The bottom-up, open organizational structure can also be further mediated by anonymity, which allows online activists to share less risks compared to those leading protests on the streets (Fominaya, 2018; Gerbaudo, 2012). Yet, digital technology is a double-edged sword, as online activism can also enable closer monitoring of a movement's participants and activities (Earl et al., 2014).

Digital technology also has the potential to allow coalition building between movements that may pursue similar goals, unite against the same target or endorse each other and share membership (Ayres, 1999; Garrett, 2006). This may result in broad collective movements and global mobilization efforts that are based on the shared ideology or similarity of the issues of concern, and less on geographical co-location (Mendes, Ringrose, & Keller, 2018; Piedrahita, Borge-Holthoefer, Moreno, & González-Bailón, 2018). For instance, the Black Lives Matter movement relied on Facebook groups that spanned the networks of local and national organizers as well as those of allied movements, thus allowing the movement to mobilize resources and develop movement knowledge at scale (Mundt, Ross, & Burnett, 2018).

Framing tasks

In digitally native activism, framing activities take centre-stage as social media involves the dissemination of talk, images, and videos that can be manipulated in ways that shape the meaning of issues and events. Framing refers to the strategic process of interpreting reality, focusing attention to certain issues, and constructing understandings (Snow, Vliegenthart, & Ketelaars, 2019). It involves using language and cultural elements to articulate coherent sets of beliefs that embed a movement's activities with meaning. Activists use framing to disseminate ideas, mobilize, set the public agenda, and gain legitimacy (Benford & Snow, 2000; Cornelissen & Werner, 2014). Various lenses have been developed to study framing, depending on the research question and perspective adopted. For instance, studies adopting a processual perspective tend to focus on how frames change and the dynamics of alignment processes, by analysing the interplay of frame bridging, amplification, extension, transformation, and brokerage (Lee, Ramus, & Vaccaro, 2018; Snow et al., 2019).

Of interest for this study is the complementary perspective of *framing tasks*: how activists may use different framings depending on their pursued objectives (Snow et al., 1988, 2019). Core framing tasks include "diagnostic", "prognostic," and "motivational" framing (Snow & Benford, 1988; Snow et al., 2019). Diagnostic framing is used to identify problems and raise issues, as well as to define actors responsible for a social problem (Smith, 2021; Zoller & Casteel, 2021). Prognostic framing puts forward the plan of action and suggestions for how to resolve the issues (Smith, 2021; Snow, Vliegenthart, & Corrigall-Brown, 2007). Motivational framing is used to mobilize and encourage individuals and organizations to act, often appealing to their moral principles and urgency of the problem (Moss & Snow, 2016; Snow & Benford, 1988; Snow et al., 2019).

Framing is also used to influence stakeholders' and the public's perceived worthiness of a movement (Tilly, 1999, 2006). Wouters & Walgrave (2017, p. 5) argue that worthiness helps movements "gain recognition as a respectable player that should be listened to and interacted with," and helps to "avoid marginalization and criminalization." Accordingly, it is still unclear how framing that involves corporate actors vary across confrontational and persuasive stances in an online environment (Briscoe & Gupta, 2016). Confrontational stances can be effective in disrupting and delegitimizing targets, but more moderate stances have also been found to be effective at persuading targets to concede to a movement's demands (Haines, 1984; Baron, Neale, & Rao, 2016). Given that SG relies on a tactic of "naming & shaming" (Zhang & Luo, 2013), it is unknown how the relative emphasis on confrontation and persuasion played out in the framing tasks of the movement.

Summary

The three dimensions of Garrett's (2006) framework discussed above provide us with the conceptual apparatus for an in-depth study of the SG case. We explore opportunity structures via the identification of exogenous events affecting SG activism. For mobilization structures we examine who are the SG activists (participation levels), how do they contribute to the movement (contentious activity), and how does the coordination and organization happen within digitally native campaigns (organizational issues). Finally, we investigate how the movement's strategic framing tasks vary between confrontational and persuasive stances according to the issues and targets the movement is concerned with.

4.3 Methods

To examine the opportunity structures that facilitated the emergence and growth of Sleeping Giants, the mobilizing structures that drove the movement, and the framing tasks that the movement engaged in, we used a mixed method approach that combined qualitative and digital trace data (Tunarosa & Glynn, 2016; Whelan et al., 2016), summarized in Table **4.1**.

Dimension	Exploring	Main method	Data used
Opportunity structures	Exogenous events that favoured SG's emergence and activity	Time series analysis to sample peaks in activity and content analysis to explore events on those peaks.	 SG's Twitter timeline Retweets and mentions of SG Replies to SG Number of SG's followers over time
Mobilizing structures	Participation levels of SG activists	Cohort analysis and tier groups identification.	 Number of tweets per user over time Identification of celebrities (Wiegmann et al., 2019) among SG activists
	Contentious activity	k-means cluster analysis	- Tweet notifications to organizations about ads on Breitbart
	Organizational issues	Content analysis of leadership, coordination and organization practices in the movement.	 37 articles about SG in public media (Appendix 4B)
Framing tasks	SG's thematic concerns and stances toward its targets	Step 1: LDA Topic Modeling to identify themes of SG activism (Barberá et al., 2019; DiMaggio, Nag, & Blei, 2013)	- Content of tweets
		Step 2: Natural Language Processing to extract politeness features (Yeomans, Kantor, & Tingley, 2019)	- Tweets identified and coded in Step1.

Table 4.1: Summary of the methods and data used²³

²³ Replication materials can be found on: <u>https://osf.io/yr3zt/</u>

4.3.1 Data Collection

We collected 3,468,523 tweets over a 23-months period from March 2018 till February 2020 via a Twitter crawler developed in Python (Thingnes, 2019). Using the original SG Twitter handle "@slpng_giants" as a filtering rule we collected tweets from the Sleeping Giants account as well as retweets, replies, mentions and quotes of @slpng_giants. For the purpose of this study we restricted our analysis to SG's American account because the focus of this paper is on understanding the effectiveness of SG's activism toward its primary, original target: Breitbart, an American far-right media publisher. This digital trace data is complemented by qualitative data, namely interviews and articles about SG that appeared in public media²⁴ (Appendix 4B).

4.3.2 **Opportunity Structures**

To understand how exogenous events affected the social media activity of SG and how SG activists leveraged different events to promote their goals and agenda, we performed time series analyses for the number of followers, tweets by the SG main twitter account, replies to as well as mentions and retweets of SG's tweets. We computationally identified peaks in each of these time series using spans of 15 days and a threshold parameter of 0.2 (i.e., ignoring insignificant peaks that are less than 20% of the maximum value in each graph). The 15-day window means that a peak is defined when the number of observations (i.e., number of tweets, replies, retweets, mentions or followers respectively) on a particular day is greater than seven consecutive observations before and after that day.

To understand the reasons for the increased activity on those dates we then extracted tweets for the time interval of a peak date +/- 7 days. After identifying the most popular tweets (i.e., tweets with the most retweets and replies) in each given period, we qualitatively determined the main discussion topics and key events that likely led to the spike in the movement's activity.

4.3.3 Mobilizing Structures

To explore the mobilizing structures of the SG campaign we analysed participation levels, contentious activity, and organization issues among SG activists.

For participation levels we first examined overall participation rate, expressed in the number of tweets per user. We assigned all users to eight tier groups based on the number of

²⁴ We used Google Alert and Media Cloud (https://mediacloud.org/) to identify SG related articles.

tweets each user has posted (Tier 1: users with more than 1,000 tweets, Tier 2: \geq 500 tweets, Tier 3 \geq 250, Tier 4 \geq 100, Tier 5 \geq 50, Tier 6 \geq 25, Tier 7 \geq 10, Tier 8 \geq 1).

To understand short- and long-term engagement we created cohorts based on the users' "joining date" (i.e., Cohort 1 represents all the users who have at least one tweet in March 2018 onwards, Cohort 2 – users whose first tweets in our dataset is in April, etc.)

We also checked the participation of celebrities, who are influential users that can affect network spread and activity (González-Bailón et al., 2013; Kiss & Bichler, 2008). To identify such influential users in our dataset we have used a database of 71,706 celebrities (individuals with a verified Twitter account and a designated Wikipedia article) compiled by Wiegmann et al. (2019).

To explore contentious activity regarding programmatic advertising and to understand who accomplishes the work of pressuring organizations to withdraw their ads, we extracted a subset of "advertiser notification" tweets based on the templates most SG activists use (e.g. "@organization, do you know that your ads are on Breitbart? @slpng_giants can help"²⁵). We then performed a k-means cluster analysis²⁶ to identify characteristic groupings of notifiers based on the differences in their activity (i.e., number of direct notifications, notification retweets and other tweets).

To analyse organizational issues, we relied upon news reports and published interviews with the founders of Sleeping Giants. We deductively coded 37 articles about SG in the public media. Our coding scheme was determined by our theoretical framework with the categories of interest including: organization, leadership, and coordination within the movement.

4.3.4 Framing Tasks

Step 1: LDA topic modelling to identify themes

To understand framing activities employed by Sleeping Giants participants, we first used Latent Dirichlet Allocation (LDA) topic modelling - a type of statistical modelling that relies on a "bag-of-words" approach to discover abstract "topics" occurring in a collection of documents (DiMaggio et al., 2013). The LDA method assumes that each document (i.e., tweets combined per half-day) is a combination of latent topics with different probabilities, and each

²⁵ We used "breitbart", "ad", "@slpng_giants", @mention as the matching criteria to find notifications. For notifications made by SG handle we used: "breitbart", "ad", "you" as matching criteria. We excluded 3472 tweets which had a word "confirmed:" (see example in Figure **4.6**) because such tweets report the results of the campaign rather than appeal to organizations to take an action.

²⁶ see Appendix 4I for more details on our cluster analysis.

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topic is a combination of tokens with various probability distributions (see more details in Appendix 4C). This analysis allowed us to identify themes across the stream of tweets over the observed period.

To inspect, validate, and interpret the results of the topic model analysis, we adapted Barberá et al.'s (2019) dashboard visualization of LDA results²⁷. The dashboard for each topic shows the graph of topic usage over time, the total estimated proportion of tweets from this topic, the top 15 scoring n-grams associated with the topic, and a sample of top retweets and tweets with the highest probability for this topic (see Appendix 4E). Using this dashboard along with diagnostic model metrics (Appendix 4C), we settled on a model with 60 topics. Each topic was labelled by the lead author and then independently validated by the two other co-authors²⁸.

Our use of topic modelling departs from its conventional usage in social research. The model was used as a sampling device, where the aim was to maximize variance in the data selected for close reading. Via this sampling strategy, we go beyond the bag of words approach, which enabled us to simultaneously capture the benefits of algorithm-assisted coding and to interpret the context of tweets. Based on the selected topic model, we extracted the top 100 tweets with the highest probability for each of the 60 topics. We then inductively coded this subset of 6,000 tweets, assigning 43 codes to 3,593 of them.²⁹ We grouped these 43 codes into seven broader themes that depict the discursive landscape of the tweet corpus. For each theme, we identified the core framing tasks that were dominant in the tweets of that theme: diagnostic (focusing on specific issues and those responsible for them), prognostic (focusing on what should be done to fix the issue) and/or motivational (focusing on inspiration or call to action).³⁰ This close reading on the tweet level made apparent that tactics and language used by SG's main account and its participants differed significantly across the seven themes we identified.

Step 2: Natural language processing to measure variations in confrontational and

persuasive stances across themes

To identify alternative uses of persuasive and confrontational stances by SG participants, we relied on the computational linguistics R package "Politeness" (Yeomans et al., 2019). This package provides tools to measure 36 linguistic features that have been previously identified

²⁷ Link to the dashboard <u>https://papers.janeli.nz/sg-lda/</u>

²⁸ See Appendix D for the full list of labels and their description

²⁹ We skipped 2 383 tweets where there was not enough context to make a judgement about the topic, because either the original tweet was deleted, or it was a repeated retweet (thus no linguistic variation). We had 43 unique codes that we later combined into 7 themes.

³⁰ Detailed examples for the themes, their associated framing tasks, along with representative tweets can be found in Appendix 4L.

as relating to display of politeness (Brown & Levinson, 1987; Danescu-Niculescu-Mizil, Sudhof, Dan, Leskovec, & Potts, 2013). Politeness features are identified via linguistic markers, which may be positive (e.g., words of gratitude, apologies, use of formal or informal titles) and negative (e.g., bare commands and swearing). Politeness feature scores were computed on the tweets that had been coded into one of the seven themes in the previous step. We posit that greater politeness feature scores are indicative of a persuasive stance, while lower scores indicate a rather confrontational stance.

4.4 Findings

We now present our findings along the three dimensions of the SG movement: opportunity structures, mobilizing structures, and framing.

4.4.1 Opportunity structures

The role of exogenous events

Figure **4.1** shows the distribution of the movement's activity over time via the number of followers, tweets by the main SG Twitter account (@slpng_giants), replies to, as well as mentions and retweets of SG tweets. We also singled out the number of SG tweets that were specifically about Breitbart³¹ (Panel 1 in Figure **4.1**; 16% of all SG tweets and this proportion declined over the observed period).

Peaks in activity are correlated with increases in followers. We identified 17 dates that had common peaks across all five types of Twitter activity³², and examined these peaks to understand events that impacted the movement most in terms of: SG activity (e.g., tweets from the @slpng_giants handle), conversation and engagement with the community (replies), spread of information (retweets), as well as overall attention and recruitment to the movement (followers).

³¹ Any tweet that has "breitbart" in the text

 $^{^{32}}$ We also included an outlier date (4 Dec 2019) with an unusual spike in mentions only (see Figure **4.1**).



Figure 4.1: *Exogenous events and activity levels on SG Twitter account over the observation period*

Some peaks are associated with SG's own activity targeting Breitbart (see Table **4.2** and Appendix 4F for details). Breitbart-related events that resulted in activity spikes included the New Yorker magazine's invitation of Steve Bannon (former executive of Breitbart) to their festival, Facebook's decision to include Breitbart in its list of trusted news sources, and leaked emails from Donald Trump's senior advisor Stephen Miller to Breitbart (Rogers, 2019). In addition, SG's activism toward Breitbart triggered retaliation from allies in the conservative media sphere. For example, the doxing of a SG founder by the Daily Caller website in July 2018 resulted in increased attention from mainstream media³³ (Maheshwari, 2018; Willis, 2018). The disclosure of the SG founders' identities and its subsequent media coverage was followed by a major increase in SG followers.

Peak Date +/- 7 days	Event	Representative tweet	Retweets	Replies
18-06-14	Trump' family separation policy	Tweet id: 1007377436521082880 This is a concentration camp for children. Who is the tent manufacturer willing to profit from this? Who is the bed manufacturer? Who is the company willing to handle the data? Who is the food supplier? Who are the other companies willing to detain children for cash? <u>https://t.co/uMcho0Z7N6</u>	11,213	657
18-07-21	The identity of the SG founders revealed: The New York Times publish an interview with the founders	Tweet id: 1021882397737017347 One week ago today, we were doxxed by @DailyCaller's @peterjhasson. Since then, we've: - Added 11,000 members to our community. - Been notified by over 20 more advertisers that they've left Breitbart. - Landed on the front page of the @nytimes business section. Big thanks, man!	1,878	117
18-08-06	Facebook, Apple, YouTube and Spotify remove Alex Jones accounts	Tweet id: 1024640058534637568 Good morning. Alex Jones just sued the parents of Noah Pozner, whose child was killed in Sandy Hook and who Jones has used his show to harass for years. A show that @facebook @YouTube @Twitter & @Spotify are currently bending over backwards to keep on their platforms.	2,325	84

Table 4.2: *Examples of exogenous events*³⁴

³³ See Appendix 4G

³⁴ See Appendix 4F for the full list of events

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Peak Date +/- 7 days	Event	Representative tweet	Retweets	Replies
19-08-08	El Paso Shooting	Tweet id: 1158970287238656000 22 people in El Paso were killed when a white supremacist said he wanted to kill as many Mexicans as possible and Tucker Carlson says white supremacy is not a real problem in America. .@USAA, as an advertiser on this show, do you endorse the idea that white supremacy is a hoax? https://t.co/92Ywv5n0wW	6,760	1,474
19-10-26	Facebook trusted sources	Tweet id: 1187736761717460992 Today, @facebook, who is still ensnared in the Cambridge Analytica scandal, added Breitbart, whose owner and former President were OWNERS of Cambridge Analytica, as a "trusted" news source. This scandal writes itself.	8,503	366

However, many peaks in SG activity are associated with exogenous events that provide opportunities for SG activism. Most notably, the separation policy of migrant children from their parents at the US–Mexico border by the Trump administration was a pivotal event that helped SG gain prominence during the observation period. In June 2018, SG called out suppliers for detention facilities and contractors for the U.S. Immigration and Customs Enforcement (ICE). Outrage sentiment is prominent among the tweets during this period and tweets containing such emotion are among the most popular over the entire observation period (cf. Table **4.2**). SG also reacted to events like mass shootings by white supremacists to reinforce its position against far-right actors.

In addition, criticism of platforms, such as Facebook, Twitter, and Spotify, for their role in the dissemination of disinformation, hate, and extremist content became another discursive opportunity structure for SG. Activists targeted the platforms' content moderation policies and practices, and also made attempts to "deplatform" certain actors, such as 4chan and conspiracy theorist Alex Jones, by targeting their infrastructure providers (e.g., hosting services).

Overall, peaks of SG activity were only in part associated with its original Breitbart-related campaign. SG leveraged social, political, and international events to promote its agenda. Discursive opportunities related to emotionally loaded issues like immigration, racism, white supremacy, and bigotry provided conditions that allowed SG to rally participants to the movement and expand its reach.

4.4.2 Mobilizing structures

Participation Levels

As of June 6, 2020, SG had more than 375,000 followers on Twitter and over 70,000 on Facebook. In our dataset we have 426,289 unique users with at least one tweet related to SG.³⁵ The results of the tier group analysis (Figure **4.2**) shows that 88.56% of all users belong to the tier 8 group that has done only one to nine tweets in the observed period of 23 months; and 52% of all users have done only one tweet. At the same time 0.14% of all users (608 top active users) account for 20% of all tweets in the dataset, contributing the most to the campaign. Users from tier 1 to 5 (total 10,640 users, 2.5% of all users) account for 55% of all tweets (Figure **4.2**, orange line).



Figure 4.2: Tweets per tier group

Figure 4.3 shows that the total tweet count is mostly driven by returning users from early cohorts, with Cohort 1 accounting for 42% of all tweets. Users from Cohort 4 and Cohort 5, who joined in June and July 2018 at the time of Trump's separation policy and the revelation of the SG founders' identities, show high repeated participation rate and account for more than 9% of total tweets each. We also note a sharp increase in activity from both newcomers and

³⁵ Can be a direct tweet, reply, retweet or quoted tweet.

existing users in August 2018 and August 2019, caused by SG activity related to far-right actor Alex Jones and the El Paso shooting respectively.



Figure 4.3: Tweets distribution by Cohort

Finally, using the celebrities dataset by Wiegmann et al. (2019), we found 1,565 celebrities (0.4% of total users) who together account for 11,662 tweets in our dataset. Many of the celebrities did not only retweet posts related to SG but also publicly supported and endorsed the movement (Figure **4.4**). Some celebrities acted as "super-spreaders" of the movement, having several thousands, and in a few cases millions, of followers³⁶.

George Takei 🔗 *** @GeorgeTakei	Kathy Griffin ? @kathygriffin		
Bannon is headed back to MordoI mean Breitbartto regain his strength. Let's make sure advertisers stay away. Check out @slpng_giants	Give @slpng_giants a follow. You won't be sorry. They are fearless and persistent.		
10:48 AM · Aug 19, 2017 · Twitter for iPhone	🏽 Sleeping Giants 🤣 @slpng_giants · Mar 17, 2019		
4.6K Retweets 114 Quote Tweets 14K Likes	Cool that this video of @JerryFalwellJr talking about shooting Muslims is still all over @twitter and @TwitterSafety hasn't done shit. twitter.com/riotwomennn/st Show this thread		
	12:45 PM · Mar 17, 2019 · Twitter for iPhone		
	179 Retweets 15 Quote Tweets 848 Likes		

Figure 4.4: Examples of endorsement from celebrities

Contentious activity

Our detailed analysis of the SG movement reveals that its activism originally revolved around an innovative kind of crowdwork which was key to the movement's visibility and success. Organizations relying on programmatic advertising may not be aware that their online ads appear on Breitbart. SG invited its followers to monitor Breitbart's website, take screenshots of ads displayed next to extremist content, post these screenshots on Twitter along with a mention to @slpng_giants and the advertisers' Twitter handle, making this information visible and available for others to share (see Figure **4.6**). SG chose Twitter because of its broadcast affordances and two-way communication³⁷ which allowed activists to interact directly with Breitbart advertisers in a publicly visible manner, amplified by the movement's followers. Because Twitter also acts as an arena where elites, reporters, media outlets, politicians congregate, SG was able to leverage the threat that the disclosure of an ad placement on Breitbart might generate a reputational risk (Johnson, 2018; Nitins & Burgess, 2014).

Once an organization replies and removes their ads from Breitbart, SG makes a corresponding post on social media (Figure **4.6**) and adds the organization to a Google

³⁶ see Appendix 4H for sample tweets and further data about celebrities.

³⁷ Matt Rivitz, SG co-founder about their choice of Twitter: "Twitter's a pretty public medium and if you ask a brand about something then they're likely to get back because they want to address it." (Johnson, 2018).

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spreadsheet that is publicly accessible³⁸. The spreadsheet keeps advertisers accountable for removal decisions and demonstrates achievements of the movement, serving as evidence of its effectiveness. It is noteworthy that while Breitbart is an American website, many of the organizations, whose ads appeared on Breitbart, are large international corporations (e.g., Visa, BMW, Lenovo) or entities outside the US (e.g., Sydney Opera House, Air France, The London School of Economics). All of them, along with 4,000+ other organizations, responded to SG notifications and pulled their ads from the Breitbart site as of December 2020.



Figure 4.5: Example of a notification



We found 194,974 advertiser notification tweets created by 27,795 users. These notifications consist of both initial notifications (i.e., a tweet notifying a company with a screenshot of their ad(s) on Breitbart; Figure **4.6**) and retweets of such initial notifications. Thus, we distinguish between activists who produce initial notifications (i.e., "notifiers") versus users who retweet them. We found 4,094 notifiers posting 21,425 initial notifications. These notifiers account for 85,703 (44%) notifications (initial and retweets), while the remaining 23,701 users account for 109,271 (56%) notifications, which are all retweets.

³⁸<u>https://docs.google.com/spreadsheets/d/1i9o8CR_kjJ6mBd44k6CRZEhlXuZqq-XCCOoj-e8RJ7Q/edit#gid=0</u> (accessed 13 April 2021).

Based on a k-means cluster analysis, we identified four clusters which we labelled *vigilantes, amplifiers, semi-active workers* and *crowd workers*. For users in each cluster, we additionally cross-checked whether they were among top-active users or celebrities (as discussed in section 4.2.1). Figure **4.7** shows summary statistics for these four clusters of users.

Vigilantes: A small cluster of seven users, each having authored a large number of initial notifications. On average these users posted 777 notifications, (max: 1,462, sd: 316). All seven users are in the top 500 active users (i.e., tier 1 & 2). These users are dedicated workers who constantly monitor the Breitbart site, take screenshots of ads, and notify organizations via Twitter.

Amplifiers: Another cluster of seven users only. Compared to the *vigilantes*, these users post fewer initial notifications (mean: 49, sd: 60) but they retweet significant amounts of initial notifications from other users (mean: 3,034, sd: 831). Users in this cluster also have the highest number of total tweets (mean: 12,916 tweets, sd: 8,739) and are all among the top 10 active users over the observed period. The SG twitter handle (@slpng_giants) is in this cluster. *Amplifiers* are active users who frequently reply to and retweet, therefore, increasing the visibility of the *vigilantes* ' work.

Semi-active workers: A group of 38 users that all produce a substantial number of initial notifications, but significantly fewer than *vigilantes*. Their numbers of notification retweets and total tweets are also high, indicating that users from this cluster also tweet substantially beyond the topic of Breitbart. Overall, they are less active than *amplifiers* and *vigilantes* but much more than the average *crowd* user. 36 users (95%) from this cluster are among top 500 active users.

Crowd workers: The largest cluster with 4,042 users who posted at least one initial notification. These participants have on average only three to four initial notifications or retweets. The average number of total tweets, both related and not related to Breitbart, is also much lower than in the other clusters. However, what defines this cluster is its size: thousands of users, each making a small contribution, together account for 11,893 (56%) of all initial notifications and for 32% of the overall notification activity (initial and retweets). *Crowd* workers are the only cluster that contains celebrities.

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Figure 4.7: Description of notifiers' clusters

Organizational issues

SG's growth and success was enabled by the unique affordances of online activism. First, its leaders³⁹ remained anonymous for 20 months, which is often impossible in offline movements. Anonymity originally allowed the founders freedom, reduced risk, and the pretence of a large and legitimate movement (Farhi, 2017):

"I thought it sounded cool. It sounded like there are a bunch of people ... It was just me at first, so I wanted to seem bigger. < ... > Because I was going be talking to big advertisers. I wanted to seem significant even though there were two followers." – Matt Rivitz, SG founder (Johnson, 2018).

However, once the two founders' identities were revealed by The Daily Caller in July 2018, they faced much greater scrutiny and harassment, including doxing and death threats. At the same time, the revelation had a positive effect on their social status, bringing recognition, new followers, media attention, new opportunities for collaboration and for-profit services (see corresponding peak in Figure **4.1** and subsequent growth in followers).

"The simple act of calling myself co-founder changed so much. People looked up to me as a leader and respected what I had to say. Doors were opening and I had a pathway into the adtech industry" – Nandini Jammi, SG founder (Jammi, 2020)

However, "the vagueness that once helped [SG] look like a mysterious [bigger] group" (Jammi, 2020) also created problems over trust and the division of labour among the founders. As the movement got prominence after winning several industry awards for activism (Cannes Lions, 2019; The Webby Awards, 2019) and receiving increased coverage in the mainstream media, tensions over titles, responsibilities, access to official communication channels, and rights to represent the SG in public worsened, resulting in Jammi's departure from the movement in June 2020 (Jammi, 2020; Rajagopalan, 2020). Thus, the SG case highlights that leadership in digitally native activism faces specific challenges and opportunities when the movement is non-hierarchical, decentralized, and the activists only communicate digitally.

Secondly, the simple and rewarding aspects of SG's tactics, where anyone can engage in the work of tweeting advertiser notifications, contributed to attracting a significant followership. Sleeping Giants also appropriated the affordances of social media in novel ways: they used Twitter's pinned tweet and Google spreadsheet functionalities to broadcast their

³⁹ Matt Rivitz, a freelance copywriter in San Francisco, and Nandini Jammi, a marketer from Berlin were unknown to each other but discovered online they were doing similar activism against Breitbart and started the SG campaign in November 2016.

instructions to the crowd and ensure consistency between the crowd's actions and the movement's objectives (Figure **4.8**).

"It quickly went from a two-week project to our entire lives. A big reason why the movement has remained so successful, though, is crowdsourcing, which was actually sort of an afterthought. <...> So we put some instructions up on that pinned tweet, and that's when everything kind of caught fire—and when advertisers started coming down, tens and hundreds at a time." – Matt Rivitz, SG founder (Willis, 2018).

HE SO HE SO EMO\	GUPDATED CONFIRMED LIST: bit.ly/2gcSNvW GFAQ: bit.ly/2hgC9wv /E ADS YOURSELF: bit.ly/2hzUZin
НО	W TO BE A GIANT:
1.	GO to Breitbart and take a screenshot of an ad next to some of their content.
2.	TWEET the screenshot to the company with a polite, non-offensive note to notify them of the placement
3.	TAG @slpng_giants so we can keep track of the progress.

Figure 4.8: Pinned Sleeping Giants tweet with work instructions for movement participants

This resulted in a decentralized community, where more experienced users acted as mentors, guiding, and teaching new crowd workers (Maheshwari, 2018). Interestingly, despite the importance of hashtags in online activism because of their affordance for coordination and symbolism of solidarity and movement affiliation (Freelon et al., 2020), we found that the SG movement rarely used any specific hashtags.⁴⁰ Instead, users mentioned SG's Twitter handle to track and coordinate their activities.

⁴⁰ See Appendix 4J for the hashtag use by SG. Some regional accounts are more active and consistent in hashtag use (e.g., @slpng_giants_oz uses #auspol for Australian Politics)

Coordination among international branches accounts and other movements

The success of the SG movement in the US inspired similar campaigns in other countries, a development which posed alignment and trust challenges for leadership and coordination. First, international branches operate in different ad markets with their own institutional conditions and opportunity structures.⁴¹ Despite these differences, the movement's founders had to ensure that the tactics and goals of the international branches were consistent with the identity of the original SG movement (Johnson, 2018). Second, the founders faced moral hazard risks, because each international branch account is run independently from the SG founders, and the real identities of the users controlling the international branches accounts may remain unknown. All internal coordination happens online, both privately (e.g., via closed means for electronic communication) (Braun, Coakley, & West, 2019) and publicly (e.g., endorsing each other through tweets).

"Additionally, [Sleeping Giants has] grown across the world. <...> People would approach in the early days, through DMs or through our Facebook account and say, "Hey, I'm really interested in taking on a similar thing in my country." Then we're pretty careful. I went through, made sure they'd been on our feed for a while and doing the right things and had the right tone and that kind of stuff." – Matt Rivitz (Johnson, 2018).

This reliance on decentralised control has both benefits and risks. The easiness of creating new offshoot movements comes with the difficulties of their coordination if the anonymous individuals lack commitment.⁴² For instance, the Brazilian account "@slpng_giants_br" was created back in February 2017 but remained idle for many months. In May 2020 a new Brazilian handle "@slpng_giants_pt" was launched, obtaining more followers in 10 days than @slpng_giants did over 3 years (see Appendix 4A), and attracting attention from Brazilian mainstream media (Garcia, 2020; Mann, 2020). The SG founders endorsed the newly launched "_pt" account, admitting that communication and control over the older "_br" account was lost after the activists became disengaged from the movement.⁴³

⁴¹ For example, slpng_giants_ca targets Canadian conservative news outlet The Rebel Media, slpng_giants_fr - French far-right websites Boulevard Voltaire and Valeurs Actuelles, and slpng_giants_oz - news channel Sky News Australia.

⁴² Many international branches accounts joined early in 2017 but had only a few hundred tweets and have remained idle for several years: *see Appendix 4A for the list of international branches accounts and their stats* ⁴³ https://twitter.com/slpng_giants/status/1262928802797273089

4.4.3 Framing Tasks

While Sleeping Giants originally channelled its activism toward Breitbart, we observe that the themes and issues raised by the movement varied beyond a single target. In this part of the analysis, we examine how the movement's strategic use of framing and language varies according to issues and targets.

As discussed in section 3.4, we inductively assigned 43 codes to a set of 3,593 tweets.⁴⁴ These codes represent a mix of individual actors (e.g., Alex Jones, Tucker Carlson), organizations (e.g., Facebook, Wayfair), issues (e.g., doxing, violation of terms of service), policies (e.g., family separation) and groups (e.g., advertisers on Fox News, people endorsing Sleeping Giants). We combined all codes into seven broad themes: advertisers, platforms, conservatism, separation policy, mainstream media, political donations, endorsement (see Appendix 4L for further details).

Advertisers: This theme includes not only tweets related to advertisers on Breitbart but also a large portion of tweets appealing to advertisers on Fox News. SG was involved in a social media campaign pressuring television advertisers to remove their ads from Fox News shows such as Tucker Carlson Tonight and The Ingraham Angle, after Carlson's controversial comments about immigration (Horton, 2018; Katz, 2018) and Ingraham ridiculing a 17-year-old survivor of a high school shooting (Victor, 2018; Visser, 2018). Unlike Breitbart advertisers, organizations that run ads on television networks are aware of their advertising's placement. Therefore, instead of using standardised notifications about ad placements, SG participants used tailored *motivational framing*, by calling out the advertisers' corporate values that are at odds with the statements of the Fox News hosts (see examples in Appendix 4L).

Platforms: In this theme SG targeted major online platforms, social media sites and hosting providers, calling them out for spreading hate speech, extremism, misinformation while profiting from it financially. Utilising *diagnostic* and *prognostic* framing, a common narrative among these tweets is to point out that platforms fail to enforce their terms of services and community management policies, which prohibit harassment and hate speech. For instance, SG participants used this argument to compel Facebook, YouTube, Apple, and Spotify in cutting ties with Infowars, a far-right conspiracy channel. Infrastructure and web hosting services like Cloudflare also became the target of SG's activism for their stance on net neutrality and their unwillingness to discontinue services to websites that are known to be

⁴⁴ See Appendix 4N for illustrative tweets and coding from this procedure.

hosting conspiracies (e.g. QAnon) as well as hateful content (e.g., as classified by the Southern Poverty Law Center) (Gimlet Media, 2020; Hatewatch, 2019).

Conservatism: This theme includes tweets related to conservative media outlets (e.g., Fox News, The Daily Caller, Breitbart), conservative media actors (Carlson, Ingraham, Pirro), altright actors and organizations (Steve Bannon, Alex Jones, Gavin McInnes and the Proud Boys), conservative political donors (Mercer family), and policy makers (White House advisor Stephen Miller). Most tweets in this theme involve *diagnostic framing*, where SG activists bring attention to extremist affiliations, disinformation and conspiracy narratives spread by conservative actors, and white supremacy associations.

Separation policy: SG participants called out vendors dealing with the U.S. Immigration and Customs Enforcement (ICE) that provided goods and services for detention facilities ran under the Trump administration's family separation policy. Among notable targets were airline companies for carrying members of separated families, and the e-commerce company Wayfair for supplying beds to children detainment camps. The tweets in this category tend to be *prognostic*: SG not only identified corporate support of family separation and children detainment as a problem, but also asked participants to contact vendors and question their relationship with ICE (*e.g., "Please contact them and ask that they cease transporting children apart from their parents"*).

Mainstream media: Occasionally non-conservative mainstream media outlets became SG's target. This happened when certain actors who associate with extremist views were interviewed or invited to public forums. Using *diagnostic* and *prognostic* framings SG participants argued that giving a public platform to these actors not only provides visibility to these individuals but also legitimizes their actions and ideology. Some prominent examples include SG targeting MSNBC and the Financial Times for interviewing Steve Bannon; the New Yorker for inviting Bannon to its Festival, and the Fortune Magazine for inviting Kirstjen Nielsen, the U.S. Director of Homeland Security who led the implementation of the family separation policy, to their Most Powerful Women Summit.

Political donations: SG participants tweeted at organizations which financially support politicians with histories of ethically questionable actions and ideas. For example, as the result of SG's activism, AT&T, Leidos and Walmart withdrew donations to Mississippi Republican Senator Cindy Hyde-Smith after her "public hanging" remarks (Clark, 2018; Mangan & Breuninger, 2018). Through *motivational* framing, SG participants also pressured
organizations to withdraw their contributions to Republican Congressman Steve King, who has publicly used racist and anti-immigrant rhetoric.

Endorsement: This last theme involves tweets where relationships with allied movements are highlighted and calls are made to join forces (i.e., *motivational* framing). SG participants regularly endorsed other social movements with similar aims, like the GrabYourWallet movement, which boycotts Trump-related products and retailers who sell them.⁴⁵ Participants of the movement also praised activists, celebrities, and media for supporting the SG movement, and promoted the sale of SG merchandise, which proceeds are reportedly used to fund activities of the movement and chosen charities.

Politeness analysis

The Sleeping Giants founders publicly stressed to their followers that their primary communication tactic involves persuasive polite notifications (Figure **4.9**), and that they avoid calling for boycotts, differentiating themselves from other types of confrontational corporate activism which often relies on shaming organizations and can involve emotional outpours of angriness on social media (cf., Zhang & Luo, 2013).

"We don't want to add to the outrage too much—it's just not valuable. Now, it's kind of a self-policing community. If someone starts with the outrage, someone else will just say, "Look, we're not about that here." It's a different tone" – Matt Rivitz (Willis, 2018).

Yet, analyses using the "Politeness" R package for computational linguistics show that the language employed by SG participants varies depending on the combination of issues and targets addressed (see Appendix 4M for root mean squares of 36 politeness features across seven different themes). Tweets appealing to *advertisers* are indeed mostly polite: SG encourages organizations to reconsider their ads placement, often using words of gratitude, second personal pronoun (you), direct and indirect requests (e.g., "can you", "would you") and positive emotions. In contrast, swearing (vulgarity of all sorts), negations (contradictory notes), and negative emotions prevailed in the tweets targeting *platforms* and the Trump administration's *separation policy*. Examples of polite (high score) and impolite tweets (low score), identified by the politeness package are shown in Table **4.3** below.

⁴⁵ <u>https://www.grabyourwallet.org/</u>

Sleeping Giants @slpng_giants	
Hey everyone. You get more bees with honey than w vinegar. Be polite when reaching out please. Many companies are still unaware. Thanks!	ith
2:37 PM · Dec 2, 2016 · Twitter Web Client	

37 Retweets 4 Quote Tweets 189 Likes

Figure 4.9: Sleeping Giants tweet instructing followers to be polite with advertisers

Table 4.3: Examples of most and least polite tweets

Most polite
.@Expedient Guessing you are unaware your brand is appearing on and funding an alt right hate site
brands have blocked. Will you? @slpng_giants can help. Protect your brand?

https://t.co/Qu7qIipQDt

@Ask_Spectrum please reconsider your support of Laura Ingraham's show and support, instead, civil and productive discourse. TV hosts who use their considerable clout to make fun of teenage school shooting victims are not deserving of your brand. @slpng_giants can help. Thank you

@subaru_usa, you obviously place a great deal of emphasis on diversity and inclusion, as one of the best places to work for LGBTQ Equality. Congrats. Why then, would you sponsor Tucker Carlson's show with your ad dollars when he openly questions diversity's strength? <u>https://t.co/SNbhiEsjwR</u>

Least polite

UNBELIEVABLE!! NOW THE @NewYorker?? HOW MANY TIMES DO THESE PUBLICATIONS NEED TO DO THIS? STEVE BANNON IS HUMAN CLICKBAIT. He's not employed. He no longer holds any position of note. He's just a racist. Stop giving him air! https://t.co/KgShAjKXZx

Holy shit. Really, @Spotify? Alex Jones has been responsible for harassing parents of Sandy Hook children, Vegas shooting victims and threatening to kill the Special Counsel. And you're now hosting his podcasts?? https://t.co/dAIYiNKdXP

Speaking as someone who has been harassed and doxxed by racist shitheads on this platform, @TwitterSupport is a total failure at dealing with harassment. A company that doesn't care to deal with the harassment of Sandy Hook parents surely won't give a crap about the rest of us. https://t.co/cUngMDIND2

4.5 Limitations

Our findings must be carefully considered in the light of the limitations of our study. First, while the collected dataset provided insights in the tactics and framing of the movement, we acknowledge that this study presents a left-censored snapshot and that data from earlier periods might have provided important insights about SG's formation and development.

This paper focused on the main SG account in the United States (@slpng_giants). Future analysis of international branches accounts may help to better understand the structure and

dynamics of inter-organizational contentious activity. It is important to note that such combined analysis presents certain challenges not only because international branches accounts may have different targets and agendas, but also because many of them are run in different languages, so linguistic analysis to understand framing tactics will become more complex.

Future work could involve social network analysis of the movement, including the network of main actors, their demographics, followers, and other related campaigns. This analysis might help to reveal the larger network of the Resistance movement (Meyer & Tarrow, 2018). Such meso-mobilisation among digitally native movements is particularly relevant in the light of mid-2020 events, when SG started the *#StopHateForProfit* campaign in collaboration with other organizations.⁴⁶ The outcomes and challenges of online coordination among allied movements, when activists unite, join forces, and work online together sharing common goals and supporters are still misunderstood.

Likewise, the framing analysis could be extended to include frame-alignment processes (Benford & Snow, 2000) such as bridging, amplification, and transformation of frames used by activists over time. Such a process approach would complement a static approach, presented in this paper, and contribute to understanding of digitally native activism dynamics.

4.6 Discussion and Conclusion

Social movements rely increasingly on social media for coordination and mobilization. Yet, they often retain elements of legacy social movements, such as engaging in street protests, demonstrations, and pressure tactics (e.g., #BlackLivesMatter, #metoo, Arab Spring, Occupy Wall Street). In contrast, Sleeping Giants can be considered a revelatory case of successful self-organizing, digitally native activism (Earl et al., 2010; Schmitz et al., 2020), where mobilization, coordination, and contentious activity happen entirely online, and which embeds characteristics of peer-production organization. Our findings has several implications for the literature on online activism and platform governance with regards to disinformation and hate speech.

An important boundary condition to our findings lies in the fact that, whereas the aforementioned movements targeted structurally induced inequalities, cultural norms, or the state, SG targeted identifiable corporate actors: Breitbart, its advertisers, platforms, and far-right actors. The practices of SG can therefore be considered as innovations to the repertoire of

⁴⁶ These events took place after the end in February 2020 of the data collection for the current study.

contention used by corporate activists (Briscoe & Gupta, 2016; King & Pearce, 2010) for which the classic tactics of "naming & shaming" (Bartley & Child, 2014; Eesley, Decelles, & Lenox, 2016; Zhang & Luo, 2013) and "proxy targeting" (Briscoe, Gupta, & Anner, 2015; Walker, Martin, & McCarthy, 2008) have been transposed from the analog world to the online world via peer production. Another boundary condition lies in the fact that SG was able to exploit a specific structural vulnerability: the dependence of its ultimate target (Breitbart) on a multitude of proxies (advertisers) which may have been predisposed to make concessions to the movement, either out of perceived reputational risk, value congruence, or social comparison (Gupta & Briscoe, 2020; Luo et al., 2016; McDonnell & Adam Cobb, 2020). This vulnerability was also brought to the fore via digital affordances, by the simple acts of users who capture and post website screenshots, thus exploiting the connectivity and programmability dimensions of the social media logic to unpack the algorithmic black box of programmatic advertising (van Dijck & Poell, 2013). The crowd thus engaged in a rudimentary algorithmic audit to discover its participants and its functioning (Sandvig, Hamilton, Karahalios, & Langbort, 2014), a tactic which seems primed to be diffused to other corporate activists that have grievances toward platforms.

Sleeping Giants leveraged discursive opportunities by crafting emotionally resonant frames that leveraged the sense of injustice and harm generated by the policies of the Trump presidency as well as the narratives put forward by the right-wing media ecosystem. For example, tweets related to the separation policy and child detention facilities are among the most retweeted and replied tweets in our dataset, confirming previous studies that emotions are critical drivers for online activism participation (George & Leidner, 2019; Jasper, 1998). Users who joined during such periods of moral outrage show relatively higher commitment to the movement than other users, as seen in higher repeat participation rates (Jasper, 1998; Jasper & Poulsen, 1995).

Moreover, the networked public sphere presents novel opportunities for online activism reinforcing Ayres' (1999, p. 136) suggestion that "the Internet has become an international opportunity [structure] in its own right." Many targets of SG activism involve online actors and practices, including not only actors that diffuse hate and disinformation (Marantz, 2020, Nagle, 2017), but also online advertising platforms, web infrastructure vendors, and social media platforms that supports the networked public sphere (Donovan, Lewis, & Friedberg, 2019). SG organized a counter-movement aimed at both reforming platforms content moderation policies and "de-platforming" key actors from far-right movements as a response to their tactics of media manipulation and disinformation. The digital nature of such targets shows how

insurgents are provided with novel opportunities to generate conflict and social change, both on the left and on the right of the political spectrum (Freelon et al., 2020). SG, thus, took part in movement/counter-movement dynamics that happen in an online arena for which the governance and infrastructure are as much subject to problematization as the actors it enables.

We also observe new ways of coordination online. Previous studies argue that hashtag activism remains the dominant style of left-wing movements online (Freelon et al., 2020; Jackson, Bailey, & Welles, 2020), and a critical way to trace and expand related activities (Bonilla & Rosa, 2015; Freelon et al., 2018). The case of SG shows, however, that online activists on the left can leverage other affordances of social media, such as public Google spreadsheets, as well as Twitter's pinned tweet and mention functionalities to broadcast and track activities of a campaign. Hashtags can be used as rallying slogans to attract a mass of followers and demonstrate a movement's worthiness, unity, numbers, and commitment toward elites and policy makers (Tilly, 2006). Instead, SG organized a form of crowdsourcing among movement participants to target the social media presence of specific actors (advertisers), thus putting these actors, rather than the SG movement, in the limelight. This "non-hashtag" activism can be explained by the type of change sought by SG: disrupting the business model of political opponents via transparency work rather than demanding concessions from elites toward practice or policy changes. Such tactical innovation expands existing knowledge of online social movements by highlighting the importance of online work and the division of labor in contentious activity, especially of the disruptive kind. The success of the SG campaign depended on a handful of committed workers (e.g., vigilantes) that generated the grunt of advertiser notifications, the key tactic behind the movement's leverage. This reinforces the argument that affordances of social media increase the efficiency of activism, allowing a small core of participants to be impactful (Bennett & Segerberg, 2012; George & Leidner, 2019).

In the case of SG, vigilantes are the committed workers whose actions go beyond mere clicktivism, and include site monitoring and creation of initial notifications with a screenshot, targeting companies whose ads were spotted on Breitbart. It is important to note that commitment in this regard becomes a relative term, as online activism requires much lower commitment than protest activities offline. The groundwork of the SG's vigilantes got amplified by a critical periphery (Barberá et al., 2015) that contributed via low commitment actions (i.e., retweets and replies), which could then be noticed by the media and amplified further, thus generating a substantial reputational risk for the targeted advertisers. Therefore, SG's contentious activity required both the work of vigilantes but also micro-contribution by the crowd to be impactful. There is thus promise in considering online activism as a form of

online peer production (Kittur, Chi, Pendleton, Suh, & Mytkowicz, 2007) that involves coordination, division of labor, and control in future inquiries.

Lastly, our analysis demonstrates how a movement strategically complexifies its framing tactics to be effective. SG participants used the flexibility afforded by social media to choose and switch between multiple targets, addressing a variety of framing tasks depending on the respective target. In the case of SG, we argue that polite language used to notify advertisers allowed SG to gain recognition and legitimacy (Tilly, 1999, 2006; Wouters & Walgrave, 2017), which were then leveraged as proxies to pressure opponents with less polite approaches. Our analysis is consistent with the observation that a movement's framing is likely to be more persuasive toward potential allies and victims (e.g., the advertisers) and more vindictive toward opponents and perceived culprits (e.g., tech platforms and far-right actors) (Snow et al., 2019). Paradoxically, SG engaged in "naming & shaming" in a polite way, a tactic that is usually associated with the repertoire of confrontational activists (Briscoe & Gupta, 2016; Zhang & Luo, 2013). This polite stance could be due to SG's strategic intention to be perceived as moderate activists within the broader Resistance movement (Meyer & Tarrow, 2018), and thus to benefit from a radical flank effect: when targets are faced with confrontational activists, they are more likely to give concessions to moderate activists (Baron, Neale, & Rao, 2016; Haines, 1984). Also, while naming & shaming is usually targeted at organizations that are perceived as culpable of poor social responsibility (e.g., Zhang & Luo, 2013), the diagnostic framing of the SG leadership instead positioned advertisers as victims rather than culprits, due to their apparent ignorance of the opacity of programmatic advertising. These observations suggest that future research should pay attention to the tuning done between persuasive and antagonistic stances by online movements, how this tuning differ between opponents, supporters, and how this tuning is affected by platform affordances and variations in diagnostic framing.

Our examination of the SG movement contributes to the discussion about regulation and governance of online platforms, content moderation policies, and de-platforming of actors that breach platform policies (Donovan, 2019). Online activists have become a key mechanism in nudging the definition and enforcement of platform's malleable content moderation policies (Crawford & Gillespie, 2016; Gillespie, 2018). The absence of formal legislation to govern platforms and algorithmic amplification have created an opportunity for the rise of online movements in this space. While online activists such as SG have had localized impact so far, it is still unclear if such private politics can be effective at a broader scale to motivate platforms to engage in self-regulation, in lieu of state mandated reforms and oversight (e.g., Vogel, 2010). Considering the ever-increasing role of the Internet and platforms in the political, cultural, and

social sphere, the question of accountability of platforms for content moderation, algorithms and policies is particularly important, and emerging social media movements have become an integral part of this discourse.

4.7 References

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Chapter 5: Explaining Differential Involvement in Cross-Movement Coalitions on Social Media: the #StopHateForProfit Campaign⁴⁷

Abstract

Social media provide activists with novel opportunities for cross-movement coalitions. In this paper we examine the #StopHateForProfit coalition which aimed to compel Facebook to enforce more robust moderation policies and practices towards disinformation and hate speech, following the George Floyd protests of June 2020. Using digital trace data from Twitter we shed light on two aspects of this partnership between nine movement organizations: (a) the distribution of social media activities that further the coalition's agenda, and (b) the identity of the movements, as instantiated by their social media discourse, their collective ideological inclination, and the social ties of their followership. The findings show that contributions to the coalition in the form of original and amplified content varied across partners because of competing agendas. Partners with ideologically heterogenous fellowship and less experience with digital activism had lower participation rates, while partners with ideologically homogenous followership and greater experience with digital activism had higher participation rates. Followers that occupied brokerage positions between more than one coalition partner showed higher commitment to the campaign. Our findings extend the literature on online social movements and suggest that broad focus, "big tent" movements with ideological breadth may find mobilizing their large followership into coalitions rather challenging despite the ease of participation afforded by social media.

5.1 Introduction

The lackadaisical moderation interventions of platforms, and in particular Facebook, toward disinformation and hate speech have been the subject of regular exposés in recent years (Avaaz, 2020, 2021; Center for Countering Digital Hate, 2020; del Vigna, Cimino, Dell'Orletta, Petrocchi, & Tesconi, 2017; Edelson, Lauinger, & McCoy, 2020; Evans & Wilson, 2020; Gilbert, 2020; Johnson et al., 2020; Mac & Silverman, 2021; Mozur, 2018; O'Connor, Gatewood, McDonald, & Brandt, 2020; Silverman, Mac, & Dixit, 2020; Silverman, Mac, & Lytvynenko, 2020; Turner, 2006). This void has spawned new kinds of networked social movements that have the explicit aim to enforce more robust moderation policies and practices (Li, Bernard, & Luczak-Rösch, 2021). The *#StopHateForProfit* cross-movement coalition that launched on Twitter in June 2020 in the midst of the George Floyd protests, is a movement which aimed to compel Facebook to stop monetizing disinformation and hate via

⁴⁷ This paper was submitted to *Socius: Sociological Research for a Dynamic World* journal (Open Access, SAGE) on December 9, 2021 and is currently under revision.

advertising, its principal revenue stream (e.g., \$70 billion USD in 2020 (Iyengar, 2020)). *#StopHateForProfit* activists used the tactic of proxy targeting (Walker, Martin, & McCarthy, 2008), by pressuring large corporations via social media to remove their advertising spending on Facebook unless it changed its ways. The cross-movement coalition generated national headlines, received support from multiple celebrities, and convinced more than 1,000 advertisers to take part in the advertising boycott (Hsu & Friedman, 2020).

Interestingly the *#StopHateForProfit* coalition was composed of nine organizations, representing a diverse mix of non-profit organizations, civil-rights and advocacy groups, an open-source software foundation, and a digitally native movement with no physical presence. These coalition partners had different agendas, histories, ideologies, and tactical repertoires, yet they came together for a corporate activism campaign in which both the target and the contentious activity are online. The *#StopHateForProfit* coalition provided an opportunity to examine how such a diverse social movement coalition operates online, a phenomenon that has been mostly empirically unexplored so far (van Dyke & Amos, 2017).

Using digital trace data from Twitter for a seven-month period following the campaign's launch, we ask *how is participation in an online cross-movement coalition distributed across partners?* (RQ3.1), and *how is the identity of cross-movement coalition partners, as instantiated in the social media discourse, ideological inclination, and social integration of the movements, related to their participation?* (RQ3.2).

The study of the *#StopHateForProfit* campaign will contribute to existing research on online cross-movement coalition in several ways. First, existing studies on cross-movement coalitions are mainly concerned with the factors for coalition formation (Staggenborg, 1986; van Dyke & Amos, 2017; van Dyke & McCammon, 2010), and less with the dynamics and commitment to contentious activity, namely the proportion and distribution of work done by each coalition partner.

Second, most studies about cross-movement coalition are based on legacy social movements with offline protest events, physical membership, and social ties. The boundaries of existing theories on coalition formation and dynamics are uncertain when the arena of contention is online. We thus answer van Dyke & Amos's (2017) call and contribute to under-explored areas of cross-movement coalitions and dynamics in the realm of social media.

Finally, scholars have studied various social movement coalitions related to the environment, women's rights, labour, civil right, gay rights, anti-war, and social justice (Beamish & Luebbers, 2009; Fisher, Dow, & Ray, 2017; van Dyke & Amos, 2017). Yet, coalitions and alliances for online corporate activism have been less explored (Briscoe &

Gupta, 2016). In particular, highlighting the dynamics of cross-movement coalitions aiming to change platforms' policies and practices shall contribute to our collective understanding of how the contemporary issues of disinformation, polarization, and hate speech can be addressed (Gillespie, 2018; Tucker et al., 2018).

5.2 Theoretical Background

Social movements, activist groups and organizations may form cross-movement alliances and coalitions to pursue shared goals or join forces against mutual foes (Staggenborg, 1986; van Dyke & Amos, 2017; van Dyke & McCammon, 2010). Coalitions increase the chance of success because joined forces allow for increased levels of resources, an expanded network for mobilization, and greater power (Beamish & Luebbers, 2009; Gamson, 1975; van Dyke, 2003). Nevertheless, many cross-movement coalitions also fail or do not achieve desired success due to differences in structure, culture, ideology, resources, tactics, and organizational characteristics (Almeida, 2010; Bystydzienski & Schacht, 2001; Ferree & Roth, 1998; Lichterman, 1995).

While the pooling of resources is the key driver of coalition formations, competition for resources is also a reason why coalitions are difficult to form, and hard to sustain (Chung, 2001; Staggenborg, 1986; Zald & McCarthy, 1980). Gamson (1961) theorized that, from a rational perspective coalition partners expect a payoff from the alliance that is proportional to what they bring to the table. On the one hand, powerful partners with large resources are less inclined to form coalitions with marginal groups. On the other hand, smaller movements and activist groups seek cooperation to leverage resources and gain the influence that they are lacking (Bob, 2005; van Dyke & Amos, 2017). But even when a coalition is formed, less powerful and resource-poor organizations may face challenges when better-resourced influential partners try to lead and control the coalition (Bob, 2005; Mix & Cable, 2006; Zald & McCarthy, 1980).

Other factors critical for the formation and success of coalitions are the movements' identity and social ties. Social ties play a key role in formation because mutual members of different coalition partners can act as brokers that span structural holes (Burt, 2005; Bystydzienski & Schacht, 2001; van Dyke & McCammon, 2010). In coalitions that involve "hybrid" activism, – that is, that combines multiple social movements, issues, or identities – brokers with connection across multiple movements help to facilitate cooperation that may otherwise be unlikely (Goss & Heaney, 2010; Heaney & Rojas, 2014). Thus, the lack of overlap in membership and shared ideology can hinder successful coalition formation (Staggenborg,

1986). Yet, cross-movement coalitions also have the potential to create new social ties between and within different movements, increasing potential reach and mobilization (van Dyke, 2003; van Dyke & McCammon, 2010).

Research on coalitions shows that similar identities and compatible ideologies aid in coalition formation (Heaney & Rojas, 2014; Lichterman, 1995; van Dyke & Amos, 2017) while differences in ideological positions toward issues may hinder formation, even if the movements share similar goals (Diaz-Veizades & Chang, 1996; Lichterman, 1995; van Dyke & Amos, 2017). Identity is a broad concept, not exclusive to social media literature and may include individual attributes, social categories, and self-identification with specific groups (ethnicity, gender, social class) (Fominaya, 2010, 2018; Heaney & Rojas, 2014; Priante, Ehrenhard, van den Broek, & Need, 2017). In particular, we focus on the ideological component of identity, which can be defined as a system of beliefs that explains and justifies social order, economic reality, and political system (Jost, 2006; Jost, Nosek, & Gosling, 2008). Ideology is important for coalitions and social movements because it drives an individual's commitment to a movement (Barberá, Jost, Nagler, Tucker, & Bonneau, 2015; Jost, Glaser, Kruglanski, & Sulloway, 2003), and can thus affect participation in protest events and collective action.

Digital trace data provides novel opportunities to measure the ideological inclination of movement participants. Ideological inclination measures have been based on self-reported data (Conover, Gonçalves, Ratkiewicz, Flammini, & Menczer, 2011; Kosinski, Stillwell, & Graepel, 2013), on the structure of social media conversations (i.e., retweets and replies), and on users' network properties (i.e., ties) (al Zamal, Liu, & Ruths, 2012; Brady, Wills, Jost, Tucker, & van Bavel, 2017; Pennacchiotti & Popescu, 2011). Recent studies have shown that ideological inclination might be inferred from the followers' network (Barberá, 2015; Barberá, Jost, et al., 2015) and from the content individuals share online, including URLs and hashtags. URLs at the domain-level are found to be good predictors of political ideology (Bakshy, Messing, & Adamic, 2015; Budak, Goel, & Rao, 2016; Robertson et al., 2018) while hashtags on social media are often used to indicate solidarity and affiliation with certain movements, events, and political order (Bonilla & Rosa, 2015; Freelon, McIlwain, & Clark, 2018; Jackson, Bailey, & Welles, 2020). Moreover, scholars suggest that hashtags also help users to unite and develop movement ideology and identity (de Choudhury, Jhaver, Sugar, & Weber, 2016; Mundt, Ross, & Burnett, 2018).

Previous research showed connection between ideology and interaction patterns on social media, arguing that groups with opposite ideological stances have less interactions while users located closer to each other on the ideological scale have high interaction rates (Bright, 2018).

Therefore, the ideology of individual participants and of their movements in the aggregate may determine the motivation to join and participate in a cross-movement coalition online.

5.3 Data & Methods

5.3.1 Case Description

In June 2020 nine organizations (Table **5.1**) – the Anti-Defamation League, the NAACP, Color of Change, Common Sense Media, Free Press, Sleeping Giants, the League of United Latin American Citizens, National Hispanic Media Coalition⁴⁸ and Mozilla⁴⁹ – formed the *#StopHateForProfit* coalition and launched a campaign to stop Facebook from "valuing profits over hate, bigotry, racism, antisemitism, and disinformation"⁵⁰ (Ghaffary & Heilweil, 2020; Rodgrigo, 2020). The coalition primarily relied on Twitter, where activists pressured organizations to pause their advertising spending on Facebook and its subsidiary Instagram for the month of July 2020.

Among the nine partners were a variety of civil-rights and advocacy groups (see Table **5.1** for details), with diverse histories and backgrounds. They have different structures and organization. For instance, NAACP has a 100-year history with branches across the United States, while Sleeping Giants is a digitally native campaign, launched in late 2016, with no physical presence, formal structure, or membership. The core agenda of most partners (e.g., LULAC, ADL, NHMC, NAACP, Color of Change) involves defending and promoting civil rights, while others (i.e., Free Press, Common Sense Media) are concerned with issues of net neutrality, digital education, and safe technologies. Lastly, Mozilla is an open-source software organization, known for the Firefox web browser and its promotion of privacy rights.

Together, the nine partners started a corporate activism campaign with the common goal to enforce and reform social media policies related to hate speech, misinformation, and incitement to violence (Ghaffary & Heilweil, 2020; Rodgrigo, 2020). The campaign had a dedicated website (https://www.stophateforprofit.org/), which described information about the campaign, and provided a toolkit, comprised of samples for social media messages that users can use to pressure Facebook and advertisers (Figure **5.1**).

⁴⁸ NHMC joined the campaign on July 1, 2020: <u>https://www.nhmc.org/press-release-nhmc-joins-stop-hate-for-profit-facebook-boycott/</u> (accessed 13 May 2021).

⁴⁹ Mozilla joined the campaign on June 24, 2020: <u>https://blog.mozilla.org/blog/2020/06/24/were-proud-to-join-stophateforprofit/</u> (accessed 13 May 2021).

⁵⁰ <u>https://www.stophateforprofit.org/</u> (as of 13 April 2021).

Organization	Twitter handle	Description	Number of Twitter followers ⁵¹
National Hispanic Media Coalition	@NHMC	A media advocacy and civil-rights organization for the advancement of the Hispanic/Latino/Latinx community	7,791
League of United Latin American Citizens	@LULAC	Civil and social rights organization to protect the rights of Latin Americans	26,223
Free Press	@freepress	Advocacy group supporting net neutrality and promoting diverse and independent media ownership, and universal access to communication	59,980
Common Sense Media	@CommonSense	Non-profit organization promoting safe technology and media for children	111,008
Anti-Defamation League	@ADL	Civil right organization against defamation of the Jewish people, antisemitism and hate.	239,060
Color of Change	@ColorOfChange	Non-profit civil rights advocacy group aiming to strengthen voices of African Americans.	250,735
Mozilla	@mozilla	Open-source software community, promoting free software and open standards, and privacy	262,780
Sleeping Giants	@slpng_giants	Social media activists mostly known for their successful anti- Breitbart campaign	340,534
National Association for the Advancement of Colored People	@NAACP	One of the largest and oldest civil rights organization in the United States, promoting justice for African Americans	651,380

 Table 5.1: Partners of the #StopHateForProfit campaign
 Partners of the #StopHateForProfit
 Partners of the #StopHa

The coalition adopted a hashtag *#StopHateForProfit* to be able to track and find social media posts related to the campaign. They used the tactics of proxy targeting (Walker et al., 2008) and naming & shaming (Bartley & Child, 2014; Eesley, Decelles, & Lenox, 2016; Zhang & Luo, 2013), tactics largely adapted from the tactics of Sleeping Giants (Li et al., 2021). Furthermore, the coalition used Twitter as the main communication channel to target

⁵¹ As of 9 April 2021.

advertisers and maintained a publicly available confirmed list of advertisers⁵² to hold them accountable for their decision and to show the campaign's achievements.



Figure 5.1: A toolkit with samples for social media messages, from https://www.stophateforprofit.org/week-of-action-toolkit

The campaign had visible short-term effects: more than one thousand advertisers, including global brands like Coca-Cola, Ford, Starbucks, Microsoft, Adidas, and Unilever participated in the ads boycott (Hsu & Lutz, 2020).⁵³ Pressured by the coalition, Facebook CEO Mark Zuckerberg agreed to meet with the partners in July 2020, but the coalition organizers left the meeting disappointed, finding that Facebook did not commit to significant changes in its moderation policies and practices (Brandom, 2020). Nevertheless, Facebook took some

⁵² https://docs.google.com/spreadsheets/d/1VSGhDwXm18yFf2BVCz0QJYFjCHrPhDuOm5rCo0zoqI/edit#gid=0 (accessed 13 May 2021)

⁵³ Adidas, Coca-Cola, Ford, Microsoft, and Unilever are ranked among the top 100 advertising spenders globally according to AdAge magazine: <u>https://adage.com/datacenter/globalmarketers2020</u> (accessed 30 June 2021)

actions shortly thereafter, removing some groups and pages related to far-right militia and conspiracy theories (e.g., ~1,500 QAnon pages) (Perez, 2020). Despite short-term successes, most large advertisers that had promised to withdraw their ad spend from Facebook had returned by the start of 2021 (Rodriguez, 2021).

5.3.2 Data Collection and Analysis

We used a Python crawler (Thingnes, 2019) for the Twitter Public Search API to collect tweets for a seven-month period from the start of the campaign (17 June 2020 – 16 January 2021), using the nine partners' Twitter handles and the *#StopHateForProfit*⁵⁴ hashtag as filtering criteria. This dataset contains 3,665,248 unique tweets posted by the partners' accounts as well as replies to, retweets and mentions of these accounts and any tweets with the *#StopHateForProfit* hashtag.

In addition to this, six months after the start of the coalition, in December 2020, we obtained a list of followers for each of the nine partners, and then crawled the Twitter timeline of each follower, so that we could measure the ideological composition of each partner's followership that participated in the campaign.⁵⁵ Since we were interested only in those followers who participated in the coalition, we used a subset of 42,750,202 tweets from the timelines of 38,903 followers who have at least one tweet with the word "stophateforprofit."

To explore the distribution of activity across coalition partners and their followers (RQ3.1), we performed a time series analysis. We first selected all tweets with "stophateforprofit" in their text (total 267,607 tweets, hereinafter "SHFP tweets") and checked whether each tweet was from one of the nine partners, their followers,⁵⁶ or any other user who was not following any partner (hereinafter "non-followers"). For each group we also inspected variations in the type of tweets: tweet, retweet, reply, or quoted tweet. We also compared the activity of each partner and their followers (overlapping and unique followers) to understand their contribution to the coalition activity.

To measure the identity of the coalition's partners and their followers (RQ3.2), we used three approaches: (a) hashtag co-occurrences in the content they posted, (b) the ideological slant of the URLs contained in their timelines (up to the 2,000 most recent tweets), and (c) the overlap (intersection) of the coalition movements' followers. The objective of our

⁵⁴ Case insensitive.

⁵⁵ Up to 2000 most recent tweets from a timeline, 1.3 million unique followers.

⁵⁶ To avoid double count we excluded partner-followers. E.g., if @slpng_giants is following @mozilla, they will not be included in the statistics related to @mozilla's followers. We also created a subset of "unique followers" – users who only follow one partner exclusively.

measurement approaches is to ascertain how the identity of each movement, as instantiated by their social media discourse (i.e., use of hashtags), the ideological slant of the content they share, and the network overlap of their followership, affected their participation in the *#StopHateForProfit* coalition.

Analysing hashtag co-occurrences allowed us to capture the prominence of the *#StopHateForProfit* coalition among each movement's social media discourse during the observation period. Previous literature suggested that the importance of a coalition's agenda and concerns are unlikely to be shared evenly across coalition partners (Gamson, 1975; Olson, 1968). For each group of participants (i.e., the nine partners accounts, their unique non-overlapping followers, and all followers), we built a network of hashtag co-occurrences (Stella, Ferrara, & de Domenico, 2018) and analysed centrality measures⁵⁷ (degree, eigenvector, closeness, and vertex betweenness centrality) for each hashtag. This also allowed us to compare the most central and most used hashtags by the coalition partners and their followers in the observed period.

Measuring the ideological slant of URLs posted by each movement allowed comparing the political alignment between them. We extracted 19,150,139 URLs from 42 million timeline tweets of the partners and their followers. We preprocessed and expanded all URLs including 2,879,423 URL from URL shortening services⁵⁸ as well as replaced short domain names for some media and platforms with their full equivalents (e.g., nyti.ms = nytimes.com, fb.me = facebook.com).⁵⁹ We used the domain-level ideological slant scores from Robertson et al. (2018), which were developed by linking the US voter registration records to the timelines of a sample of 519,000 Twitter users. Each web domain was assigned a score on a continuous scale from -1 to 1, with the -1 being the most left-leaning and 1 indicating the most right-leaning ideological slant. The measure was found to have good construct validity, after a comparison with the ideological slant measures of Bakshy et al. (2015) and Budak et al. (2016). We assigned scores to a total of 16,643,768 URLs (86.91%) in our dataset⁶⁰ and analysed score distribution for each partner and their followers. We then performed a Kruskal–Wallis one-way analysis of variance to find differences between scores of individual partners

⁵⁷ See Appendix 5B.

⁵⁸ See replication materials for the list of used 872 URL shorteners: <u>https://osf.io/2jyvc/</u>.

⁵⁹ See Appendix 5C.

⁶⁰ A total of 13,906 unique domains contained in the Robertson et al. (2018) dataset was identified among this set of URLs. For our URL analysis we excluded "twitter.com", which accounts for 59.5% of all URLs (score 0.05) as it represents internal Twitter links (e.g., links to other tweets and Twitter pages).

and their followers. We also used scattered plots to visualize distribution of partners' and followers' URLs by score and frequency.

Finally, we examined the overlap among the followers of each movement, both at the start of the campaign and at the end of the observation period. This measurement shows how socially (dis)integrated the movements are, as well as the extent to which the coalition bridged structural holes between the movements (Burt, 2005). We obtained the list of the partners' followers in the chronological order of their followership,⁶¹ and used their account creation date as a point of reference to indicate the earliest following date. We then used Lex et al.'s (2014) intersecting sets graphs to visualize large number of overlapping groups and explore overlapping sets of followers at the start of the campaign (before June 17, 2020) and at the end of the observed period.

5.3.3 Limitations

Our study has several limitations. Due to the nature of Twitter followship (i.e., users may start and stop following accounts any time) the list of followers presents only a snapshot obtained at any given time and does not guarantee that a user was [still] a follower at the time when the tweet was captured. In addition, the increase in new followers is often driven by exogeneous events. Therefore, while we present the overlap in followership before and after the *#StopHateForProfit* campaign, we acknowledge that the overlap of followers may be driven by other events and not solely by the *#StopHateForProfit* campaign.

The focus of this paper is on the coalition's initial aim of inciting an advertisement boycott toward Facebook. Since the end of our data collection period, however, the *#StopHateForProfit* coalition has diverged into other agendas. For example, in January 2021 the coalition launched the *#BanTrumpSaveDemocracy* hashtag, pressuring Facebook, Twitter, Alphabet and other social media platforms to permanently remove Donald Trump from their platforms after the riots at the US Capitol (Dwoskin & Timberg, 2021; Isaac & Conger, 2021). This could be an opportunity for future research to examine how coalitions evolve, transform, and develop new targets and agendas.

Our analysis of the movements' identity is limited to the analysis of hashtags, URLs, and followership. We acknowledge that movement identity is a complex construct which lends

⁶¹ Although the exact time and date at which an account follows another is not provided by the Twitter API, the Twitter API returns by design the list of followers of an account in the chronological order by which they started following the account. Using the account creation dates for the accounts found in that list, an "earliest following date" of a follower can be inferred. See <u>https://github.com/Arf9999/rtweetXtras</u> for an R implementation and further technical details on this approach.

itself well to rich quantitative and qualitative measurement approaches. Future work may strengthen the current approach by using additional metrics by surveying participants and by examining the content of their tweets, and in specific how their textual and audio-visual content is infused with memes, rhetoric, narratives, and symbols.

5.4 Results

5.4.1 Participation in the #StopHateForProfit Coalition

Coalition activity during the observation period

We first looked at the distribution of the *#StopHateForProfit* tweets over time (Figure **5.2**). The overall activity of the coalition was spread unevenly with three major peaks. The peak on June 30 happened when the coalition's campaign was in full swing: celebrities were prompting users to join the campaign in pressuring large advertisers to boycott Facebook (see example in Figure **5.3** with a tweet from the English comedian and actor Sasha Baron Cohen, that received thousands of retweets and likes). Within the first month more than 1,000 advertisers, including many blue-chip companies, joined the boycott by removing their advertisement from Facebook (Hsu & Friedman, 2020). The campaign also received substantial media coverage, as it benefitted from the media's interest in social justice and civil rights issues raised by the George Floyd protests (Bell, 2020; Bursztynsky & Graham, 2020). After meeting with Facebook's CEO Mark Zuckerberg, the coalition released a statement with ten specific demands about accountability, decency, and support.⁶²

The activity peak on 29 August 2020 was related to the protests that occurred in Kenosha, Wisconsin after police shot Jacob Blake, an African American man. During these protests, a militia organization called the "The Kenosha Guard" set up a Facebook event page to organize their forces, as well as discuss the shooting and killing of protesters (Mac & Silverman, 2020). Following the death of two protesters, Facebook was criticized for not taking the page down in time; Mark Zuckerberg responded to the criticism, calling the delay an "operational mistake," causing further outrage on social media (Fung, 2020).⁶³

Finally, the activity peak in September 2020 was driven by a so-called "Week of Action" initiated by the coalition, which included dedicated protest actions such as the "Instagram Freeze." Activists asked celebrities to stop their Instagram accounts for 24 hours aiming to

⁶² <u>https://www.stophateforprofit.org/statement-facebook-meeting</u> (accessed 4 June 2021).

⁶³ For example, this single tweet has 16,000 retweets

https://twitter.com/SachaBaronCohen/status/1299486284633833472 (accessed 4 June 2021).

Cross-Movement Coalitions on Social Media: the #StopHateForProfit Campaign

increase concerted pressure on Facebook (Browning, 2020). More than 60 prominent celebrities, many with tens of millions of followers on social media (e.g., Kim Kardashian West, Katy Perry, Leonardo DiCaprio, and Madonna) took part in this protest action and voiced their support for the coalition (see Appendix 5A and Figure **5.4** for examples of celebrity tweets related to this event).



Figure 5.2: #StopHateForProfit tweets over time



Figure 5.3: Examples of #StopHateForProfit tweets



Figure 5.4: Examples of tweets for the "Instagram Freeze"

The distribution of participation between partners and their followers

The distribution of *#StopHateForProfit* tweets across the three categories of users (partners, followers, and non-followers) revealed differences in campaign activity among those users (Figure **5.5**). Partners accounted for only 0.5% of *#StopHateForProfit* tweets while their followers contributed 46.8% of *#StopHateForProfit* tweets. More than half of all tweets related to the campaign were produced by users that were neither the partners nor their followers (i.e., which we refer to as "non-followers"). While the followers are likely to have participated in the *#StopHateForProfit* coalition because the content of at least one partner appeared in their feed, non-followers may have become aware of the coalition by following a coalition's partner follower⁶⁴, via a celebrity, via the media, or via Twitter's "trending" feature.

Despite contributing less than one percent of total campaign tweets, partners produced many original tweets (28%). Meanwhile more than 80% of tweets from followers and non-

⁶⁴ We don't have information about followers of followers as crawling this data was not technically feasible at the time of data collection.

followers are retweets, and while together they add up to a substantial volume, their actual unique content is low.

To explore who creates the original content among the movements we examined the content of retweets, that is, if retweets were concentrated on the same posts. Distinct retweets are the highest among partners (84%) while there are only 5.5% and 7.2% distinct retweets among followers and non-followers respectively, indicating that a small portion of the same tweets is being retweeted many times. Moreover, the source of retweets varies among groups (Table **5.2**). Partners mostly retweet other partners' and their followers' (88% combined). Meanwhile their followers also substantially retweet non-followers of the partners (21%). Finally, nearly half of retweets by non-followers are retweets of other users that are neither partners nor followers of the partners.

While partners were responsible for most of the original content, the contribution of each partner was unevenly distributed. Some partners participated in the campaign only sporadically, and #StopHateForProfit accounted only for a small portion of all the tweets posted to their timeline during the given period (Table 5.3).⁶⁵ For instance, the accounts of @LULAC, @ColorOfChange, and @mozilla only produced a handful of tweets related to the coalition (0.6%, 1.12% and 2.0% of their own timelines during the observation period, that is 5, 23, and 13 tweets). Relative to all #StopHateForProfit tweets produced by the coalition partners during the period, the activity of the @LULAC, @ColorOfChange, and @mozilla translates into just 0.39%, 1.81%, and 1.02%. In comparison, a significantly larger portion of tweets posted by @ADL, @freepress and @slpng_giants was related to #StopHateForProfit (12.6%, 9.2% and 7.6% of their timelines respectively). In terms of the overall #StopHateForProfit activity across partners, these three accounts accounted for 9.3%, 19.3%, and 57.9%, for a total of 86.4% which shows the disproportionate load carried by these three partners in driving the content of the social media campaign. It is also worth noting that @slpng_giants, the only digital movement among the coalition, produced more tweets (736) than the other eight coalition partners combined.

Not all partners sustained their campaign activity level during the observed seven-month period (Figure **5.6**). All nine partners were more active at the beginning of the campaign (June-July 2020) as well as at the peak dates. Three partners (i.e., @LULAC, @mozilla, @ColorOfChange) did not have any *#StopHateForProfit* related tweets after September.

⁶⁵ See replication materials: <u>https://osf.io/2jyvc/</u>) for each partner's timeline graph and campaign tweets over time

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Figure 5.5: #StopHateForProfit tweets by groups

Table 5.2: C	Composition	of retweets
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Retweet type	Partners	Followers	Non-followers
Retweet of partners	170 (33%)	55,921 (50.60%)	17,740 (15.40%)
Retweet of followers	288 (55%)	31,661 (28.60%)	40,454 (35.20%)
Retweet of non-followers	65 (12%)	23,007 (20.80%)	56,636 (49.30%)
Total	523 (100%)	110,589 (100%)	114,830 (100%)
Distinct retweets	437 (84%)	6,036 (5.50%)	8,241 (7.20%)

The participation of each partner's followers in the *#StopHateForProfit* campaign was proportional to the partner's account participation (Table **5.3**). Followers of the partners with low participation rate showed low engagement with the campaign throughout. However, the large size of the followship for certain partners resulted in a substantial contribution despite the relatively small percentage of followers that participated. For example, @NAACP has the largest followership (more than half a million) but less than 1% of @NAACP's unique followers participated in the campaign; still, they accounted for 7,291 campaign tweets (10% of all unique followers' campaign tweets, or 2.7% of all *#StopHateForProfit* tweets overall). Similarly, @ColorOfChange has four times more followers than @freepress (244K vs 59K), thus their followers accounted for more campaign tweets despite @freepress having higher participation rate. Sleeping Giants' (@slpng_giants) followers had the highest participation rate, accounting for 70% of all *#StopHateForProfit*'s tactics were adapted from Sleeping Giants' repertoire of contention, the @slpng_giants' followers are likely to have been

more experienced with this kind of activism, and possibly had higher commitment to the *#StopHateForProfit* campaign because of its relatedness to the @slpng_giants' agenda.



Figure 5.6: Tweets related to the coalition, by partners main account over time

Our analysis reveals that unique followers contribute only a small portion of tweets. Overall participation was mostly driven by users who follow at least two coalition partners. In the case of @NHMC, @LULAC, @freepress, @CommonSense, and @ColorOfChange, overlapping followers account for more than 90% of all these followers' tweets. Overlapping followers of @ADL, @mozilla and @NAACP authored between 73-83% of all their followers' tweets, while Sleeping Giants was the only case where unique followers contributed more than overlapping ones (56% and 44% respectively).

In summary, these findings show that the coalition's activity was driven primarily by @slpng_giants, along with @freepress and @ADL, while other partners barely participated. This pattern was found for both the coalition partners' main accounts and their followers. Yet, for partners with a disproportionately large followership (e.g., @NAACP) a small portion of involved followers still translated into a high volume of activity, just because of the size of their followership. It was also found that the partners' main accounts created most of the original content behind the campaign, which was then retweeted by their followers and a larger periphery of users, and this retweeting activity accounted for most of the coalition's activity. Finally, users that followed more than one partner of the coalition showed greater participation levels.

	Partners' tweets			Participated Followers ⁶⁶		Participated Unique Followers ⁶⁷				Participated Overlapping Followers			
Partner, Twitter handle	Total tweets 68	SHFP tweets (% of total)	% of SHFP tweets by all partners	n (% of followers)	SHFP tweets (% of all SHFP tweets ⁶⁹)	n (% of followers)	SHFP tweets (% of SHFP tweets by these followers)	% of SHFP tweets by all unique followers	% of all SHFP tweets	n (% of followers)	SHFP tweets (% of SHFP tweets by these followers)	% of SHFP tweets by all overlap. followers	% of all SHFP tweets by these followers
@NHMC	1,890	41 (2.2%)	3.2%	255 (3.4%)	4,287 (1.6%)	42 (1.0%)	60 (1.4%)	0.1%	0.02%	213 (2.8%)	4,227 (1.8%)	2.6%	98.6%
@LULAC	903	5 (0.6%)	0.4%	560 (2.2%)	4,701 (1.8%)	69 (0.5%)	114 (2.4%)	0.2%	0.04%	491 (1.9%)	4,587 (1.9%)	2.8%	97.6%
@freepress	2,662	246 (9.2%)	19.3%	2,426 (4.1%)	14,159 (5.3%)	532 (1.3%)	1,062 (7.5%)	1.4%	0.4%	1,894 (3.2%)	13,097 (5.5%)	8.0%	92.5%
@CommonSense	1,887	39 (2.1%)	3.1%	1,056 (1.0%)	8,529 (3.2%)	264 (0.3%)	486 (5.7%)	0.7%	0.2%	792 (0.7%)	8,043 (3.4%)	4.9%	94.3%
@ADL	934	118 (12.6%)	9.3%	10,359 (4.4%)	33,997 (12.7%)	4,185 (2.5%)	8,343 (24.5%)	11.4%	3.1%	6,174 (2.6%)	25,654 (10.8%)	15.6%	75.5%
@ColorOfChange	2,052	23 (1.1%)	1.8%	8,095 (3.3%)	31,758 (11.9%)	1,603 (1.2%)	3,082 (9.7%)	4.2%	1.2%	6,492 (2.7%)	28,676 (12.1%)	17.5%	90.3%
@mozilla	649	13 (2.0%)	1.0%	2,049 (0.8%)	6,989 (2.6%)	1,237 (0.5%)	1,922 (27.5%)	2.6%	0.7%	812 (0.3%)	5,067 (2.1%)	3.1%	72.5%
@slpng_giants	9,737	736 (7.6%)	57.8%	22,434 (7.3%)	91,081 (34.0%)	13,507 (5.8%)	50,906 (55.9%)	69.5%	19.0%	8,927 (2.9%)	40,175 (16.9%)	24.5%	44.1%
@NAACP	1,574	52 (3.3%)	4.1%	12,930 (2.3%)	41,855 (15.6%)	3,928 (1.0%)	7,291 (17.4%)	10.0%	2.7%	9,002 (1.6%)	34,564 (14.6%)	21.1%	82.6%
Total	22,288	1,273	100%	60,164	237,356	25,367	73,266	100%	27.38%	34,797	164,090	100%	-

Table 5.3: Partners tweets and their followers' tweets related to the coalition

⁶⁶ Including overlapping followers, i.e., same users following more than one partner.
⁶⁷ Unique followers are followers that only follow one partner.
⁶⁸ For the same period as campaign.
⁶⁹ Total 267,607 campaign tweets.

5.4.2 Identity of the Coalition Partners and their Followers

To develop a theoretical explanation for the differences in activity levels among the partners and their followers, we now examine three facets that compose the identity of the movements that form the *#StopHateForProfit* coalition. We find that (a) the centrality of the *#StopHateForProfit* coalition varied among the partners' social media discourse; (b) the low participation level of the @mozilla movement could be due to the more centrist ideology of its followers in comparison to the other coalition partners which tend further to the left, as indicated by an analysis of shared URLs; and (c) the coalition's social network was rather fragmented and there was only marginal gains in network cohesion among the movements by the end of the campaign.

Centrality of Coalition in Social Media Discourse: Hashtags Co-Occurrence

The hashtags co-occurrence analysis shows that the *#StopHateForProfit* hashtag has low centrality in the timelines of the coalition partners and their followers, and thus appeared to be a rather peripheral concern in the agenda of the movements during the period (Figure 5.7). Hashtags related to the COVID-19 pandemic, the 2020 United States presidential election, and the Black Lives Matters movement were among the most used and central hashtags among all partners and their followers. Hashtags related to the 2020 American elections (e.g., *#bidenharris2020, #voteblue, #votetrumpout*) clearly showed the ideological left-lean of the coalition.

In specific, the *#StopHateForProfit* hashtag has low centrality in the hashtag cooccurrence networks of @mozilla, @LULAC and @CommonSense, while having high centrality for @slpng_giants and @freepress (Figure. **5.8** and Figure **5.9**). For the latter, the *#StopHateForProfit* hashtag was associated with grievances about Facebook and moderation practices (i.e., *#disinformation, #changeterms, #bigtechhearing*). It is worthy to note that @mozilla, @LULAC and @CommonSense used hashtags extensively in their own timelines: more than 70% of these partners' tweets and more than 20% of their followers' tweets contain hashtags (Appendix 5E). In comparison, @slpng_giants used hashtags the least: less than 13% of the tweets for both @slpng_giants and their followers were with hashtags, which means that when @slpng_giants' followers *did* use hashtags, they mostly used the *#StopHateForProfit* hashtag.

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Figure 5.7: Hashtag co-occurrence in the timelines of all partners and their followers⁷⁰



Figure. 5.8: Hashtag co-occurrence in the timelines of @freepress

⁷⁰ Size of the vertex corresponds to the frequency of the hashtag. See replication materials (<u>https://osf.io/2jyvc/</u>) for separate graphs for each partner, their total and unique followers.

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Figure 5.9: Hashtag co-occurrence in the timelines of @slpng_giants

Coalition Movements Ideological Inclination via shared URLs

Figure **5.10** and Table **5.4** show that coalition partners and their followers mostly shared centre-left URLs in their timelines, with the overall mean score of -0.23⁷¹. The New York Times (nytimes.com) and The Washington Post (washingtonpost.com) were the most frequently shared URLs by all participants. Other URLs with high overall frequency are left-leaning media outlets (e.g., thedailybeast.com, propublica.org, motherjones.org, vox.com, rawstory.com). Among the most shared URLs is also ActBlue (secure.actblue.com, score - 0.83), an American technology organization offering fundraising software for left-leaning nonprofits and Democratic candidates to raise funds from individual donors. 2016 and 2020 Democratic presidential nominees used this software during their election campaigns. Another left-scored domain that is among top 20 used is iwillvote.com (score -0.82) which was created to mobilize Democratic voters and provide information about the elections.

Yet, closer inspection shows that there are ideological differences among partners as well as their followers. The nine partners' accounts had a wider range of mean ideological scores in comparison to their followers. The average scores of @ColorOfChange (-0.6) and @freepress (-0.4) indicate the most left-wing inclination while @mozilla and @CommonSense show the most center-ground one (-0.15 and -0.04 respectively, Table **5.4**). It is important to note that most URLs posted by @freepress, @ADL, @ColorOfChange, and @NAACP were to their

⁷¹ The range of -1 to 1, from left to right, see Appendix 5D for further details on the URL score distribution. For separate figures depicting the ideological inclination of each partner and their followers, see replication materials.

organizational websites, thus their average scores were in large driven by the score of these sites, which are all left-leaning (i.e., freepress.net -0.7, adl.org -0.6, act.colorofchange.org -0.9, naacp.org -0.8).



Figure 5.10: URL domains

Tabl	e 5.	4 :	Ideol	logical	inclina	tion d	of the	coalition	movements,	based on	URLs	shared
							./		,			

	Ideological Inclination										
Coalition Partners	Part sco	ners' re ⁷²	Follov sco	wers' ore	Unique followers' score						
	Mean	SD	Mean	SD	Mean	SD					
@NHMC	-0.29	0.27	-0.24	0.10	-0.17	0.12					
@LULAC	-0.14	0.29	-0.24	0.10	-0.22	0.11					
@freepress	-0.44	0.27	-0.26	0.11	-0.25	0.13					
@CommonSense	-0.04	0.09	-0.20	0.11	-0.17	0.12					
@ADL	-0.34	0.30	-0.23	0.14	-0.20	0.18					
@ColorOfChange	-0.60	0.37	-0.25	0.10	-0.24	0.12					
@mozilla	-0.15	0.22	-0.17	0.13	-0.13	0.13					
@slpng_giants	-0.29	0.24	-0.24	0.09	-0.23	0.09					
@NAACP	-0.31	0.37	-0.24	0.11	-0.21	0.12					

⁷² Based on the URL score distribution for partners and based on the weighted average score for followers and unique followers



Figure 5.11: Ideological inclination score distribution for unique followers

Followers' average scores were aligned with their partner's scores. @slpng_giants' followers had the smallest standard deviation (mean 0.2, SD 0.09) among all movements, indicating relatively homogeneous ideological positioning (Figure 5.11). Followers of @mozilla stood out by being at the right of the coalition but still rather central in the ideological spectrum (mean -0.13, SD 0.13), and this pattern was confirmed by a Kruskal-Wallis test (p < 0.0001).

Coalition Network Cohesion via Followership Intersection

Before the start of the campaign four partners (@ADL, @ColorOfChange, @mozilla, and @slpng_giants) had more than 200,000 followers each, and @NAACP had the largest followership, with nearly half a million followers (Figure. **5.12**). Among all partners, @mozilla had the most distinct followers (96%), followed by @CommonSense (89%). These two movements were thus socially distant from the rest of the coalition. Furthermore, @mozilla and @CommonSense appeared in the top combinations only with @slpng_giants and @freepress, further suggesting that @mozilla and @CommonSense had no preferred 'partners' among the more civil rights-focused movements.

Partners representing civil rights organizations (e.g., @NAACP, @ColorOfChange, @NHMC, @LULAC) already had more than 40% of their followers overlapping with other partners of the coalition at the start of the campaign. Figure. **5.12** shows that the largest

intersecting sets of followers are found among the followers of @ColorOfChange and @NAACP, @ADL and @NAACP, and @slpng_giants and @NAACP. This pattern held both at the beginning and at the end of the observation period. The most common combinations of followership between @NAACP, @slpng_giants, @ADL and @ColorOfChange followers indicate that these partners acted as network brokers (Burt, 2005) for the *#StopHateForProfit* coalition, by bridging the structural holes in the networks of coalition's partners followers.



Figure. 5.12: Intersection of followers before and after campaign

The number of followers for all coalition partners increased over the observed period, however the overall ranking of combinations remained largely the same: i.e., @ColorOfChange & @NAACP shared the most followers (52K before and 65K after the campaign), followed by @NAACP and @ADL who shared 20K followers before the campaign and 24K after (see details in Appendix 5F and Figure. **5.12**). @NAACP, @ColorOfChange,
@slpng_giants and @ADL gained the largest number of both unique and overlapping followers, increasing their total followership by 16%, 19%, 13% and 16% respectively. Among them @ColorOfChange had the highest increase of non-unique followers (24%, 21,918 users), followed by @NAACP (21%, 27,751 users), while @ADL and @slpng_giants gained over ten thousand users (17.5% increase) who are also following other coalition partners.

5.5 Discussion

Using digital trace data about the *#StopHateForProfit* coalition, we shed light on two aspects of cross-movement coalitions online (van Dyke, 2017): how a coalition's activities are distributed among partners and their followers; and how the identity of the movements is related to these activity differentials.

Our analysis of the #StopHateForProfit coalition provides insights into the dynamics of online coalition movements. The nine partners produced most of the original content while most followers and non-followers simply retweeted content, despite the provisioning of a toolkit with templates of campaign tweets the contributors can copy or adapt (Figure 5.1). This can be generalized to how social media activism typically works: a handful of core activists make posts which are then amplified by a large periphery in the network (Barberá, Wang, et al., 2015). While the proportion of original content is relatively small, the large number of retweets of the same content that is concentrated among high-profile targets may be enough to pressure organizations to concede to the activists' demands (Li et al., 2021). The proxy targeting strategy via Facebook that pressured its advertisers might have contributed to the coalition's relative short-term success in several ways. First, proxy targeting is a persuasive tactic which tends to be more effective than confrontational practices like hacktivism and data exposure (Benkler, 2011; Brunsting & Postmes, 2002; Coleman, 2011; George & Leidner, 2019). Second, it confirms previous assumptions that coalitions have higher chances for success when their target is a common foe with an issue that is broad and affects multiple communities (van Dyke, 2003; van Dyke & McCammon, 2010).

Furthermore, with regards to RQ3.1, our findings show that campaign activity varied over time and was incited by several key events. Like other online social movements (Conover, Ferrara, Menczer, & Flammini, 2013), the *#StopHateForProfit* coalition had high activity levels in the beginning of the campaign, but significantly slowed down after the first six months, showing that sustained participation in online coalitions is a challenge. Importantly, the findings highlighted large variability in campaign participation by each coalition partner,

and that the grunt of the activity was driven by @slpng_giants and its followers. There was also a strong influence between the partners' main accounts activity and their followers' activity; partners that were less involved tended to have followership that was less involved, and vice-versa. These differentials could be due to several reasons, as shown in the analyses pertaining to RQ3.2.

First, the hashtag co-occurrence analysis suggests that large movement partners may have complex agendas with multiple issues, thus having only marginal interest for coalition-driven campaigns like *#StopHateForProfit* that may be peripheral to their core agenda. Secondly, the partners' own repertoire of contention may affect their level of protest activity (van Dyke, 2003). For instance, Sleeping Giants' (@slpng_giants) tactics are similar to those used by the *#StopHateForProfit* coalition (i.e., proxy targeting, naming & shaming via social media). Their followers' previous experience in targeting advertisers made the *#StopHateForProfit* coalition compatible and aligned to the Sleeping Giants' core agenda, which likely explains the high participation rate of the movement to the coalition. In contrast, only a small minority of @mozilla's large set of followers took part in the coalition. This finding shows that large amounts of followers do not necessarily translate into increased level of mobilization and participation, which is often the main rationale for coalition formation.

Second, the findings show that in online coalitions, ideological alignment between followership and the coalition's agenda matters for generating commitment and involvement. The ideological similarity of the partners is likely to facilitate the creation of a coalition in the first place. Yet, the findings suggest that what appears even more critical for commitment to an online coalition is whether the coalition's agenda is ideologically aligned with the followership's ideological inclinations. A more ideologically homogenous followership (@slpng_giants) is likely to contribute more than a followership that has a "big tent," that is, greater variance in ideological inclination (@mozilla). As an open-source software foundation, @mozilla's ideals can be considered compatible with both left-wing and right-wing agendas. While open-source software can be idealized as deterrent to corporate power and a remedy for inequal access to technology, it is also driven by the principle of individual freedom that underlies cyber-libertarianism (Turner, 2006). It is thus likely that a significant portion of @mozilla's more centrist and right-leaning followership did not consider the progressive agenda of the *#StopHateForProfit* coalition attractive.

Third, our study reveals a coalition's spread on social media beyond the immediate followership of the partners. More than half of all campaign tweets were posted by users who are not following the coalition partners, suggesting that they might have become involved in

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the campaign by following partners' followers, the media, or algorithmic curation (e.g., Twitter's trending feature). This highlights the possibly reduced importance of formal membership that was considered a key success factor for organized coalitions and offline social movements (Staggenborg, 1986; van Dyke & Amos, 2017). The turnout and participation in protest activities on the streets often depend on the mobilization and coordination done by social movement organizations, while participation in online campaigns has more fluid boundaries, allowing users in the network periphery to engage in contentious activity without formal social movement organization involvement because of network and algorithmic reach (Brunsting & Postmes, 2002).

Overall, the #StopHateForProfit coalition suggests that the nature and value of resources that are leveraged in online coalitions differ. Online coalition partners are likely to be less concerned with material resources and membership because social media followership is competitive in terms of attention but not resources, thus facilitating the emergence of fluid hybrid movements (Goss & Heaney, 2010; Heaney & Rojas, 2014) that combine partners with differences in offline resources and influence. Previous studies showed that better-resourced organizations might not be interested in coalition formation with marginal groups (Gamson, 1961), and tensions may occur between less and more powerful partners (Bob, 2005; Mix & Cable, 2006; Zald & McCarthy, 1980). This power dynamic is different in online coalitions, where the value brought by each partner does not necessarily depend only on material resources (e.g., revenue, budget, physical infrastructure) but on virtual resources, such as its followership's social capital (i.e., potential for network brokering), social media network reach, and tactical knowledge about social media. The case of #StopHateForProfit shows that online coalitions can be formed by unlikely partners with disproportionate size, influence, and resources, but that digitally native movements appear to have an advantage in leading a coalition's agenda. For example, Sleeping Giants (@slpng giants) - the only partner with a purely online presence and the shortest history, launched in late 2016 - contributed more campaign tweets than all the other partners combined. Moreover, the analysis of the coalition followership overlap demonstrates that in the absence of formal membership users can follow multiple organizations simultaneously at no cost. This is different from offline coalitions where sharing membership (e.g., sharing mailing list) is often challenging or even undesired (Staggenborg, 1986). Furthermore, overlapping followership was found to be related to higher commitment to a coalition's agenda, as the contribution by overlapping followers was more than twice that of the contribution by unique followers.

5.6 Conclusion

The affordances of social media provide new opportunities for social movements and activists groups, including opportunities for cross-movement coalitions. Such coalitions represent an emerging, yet under-researched phenomenon, and our study of *#StopHateForProfit* shows that previous theories explaining the formation and participation in traditional coalitions may not hold up well in the realm of social media.

Our analysis reveals that, compared to traditional cross-movement coalitions, competition for resources and membership becomes less relevant online, because such coalitions have less of a zero-sum game effect due to the absence of time-space boundaries, the network structure (e.g., weak ties, "brokers"), and the relative ease of participation in contentious activity including acts that require little commitment (e.g., retweets, hashtag activism).

#StopHateForProfit shows how activists with the help of celebrities, the media, and social media users attempt to enforce more robust content moderation and governance towards hate speech and disinformation. Still, despite a short-term drop in Facebook's share prices as the result of the *#StopHateForProfit* campaign, the long-term effect of this cross-movement coalition remains unclear. Facebook didn't commit to any significant changes in their moderation policy (Avaaz, 2021; Mac & Silverman, 2021; Silverman, Mac, & Lytvynenko, 2020). Moreover, reports on Facebook's turnover in the first quarter of 2021 showed that its ad revenue increased by 48% (Rodriguez, 2021), indicating that online coalitions might still be far from transforming short-term gains into lasting wins.

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Chapter 6: Conclusion

This chapter provides an overarching conclusion of the thesis. We start with addressing the six research questions and then explain the contribution of this research program to theories and previous work on social movements, online activism, and cross-movement coalitions. We acknowledge important limitations and share plans for further work related to online activism. The chapter closes with concluding remarks.

6.1 Addressing the Research Questions

6.1.1 Online Firestorms

RQ1.1: What are the properties of online firestorms that may generate field level change?

Using a developmental literature review and interdisciplinary conceptualization, we identified 16 properties of online firestorms. These properties are grouped into a framework that distinguishes between *technological* and *social* properties as well as properties related to *information* versus properties related to *field actors*. Technological properties (e.g., speed and volume of information, network clusters, restraint of information flow) are derived from the affordances of social media and digital technologies, while social properties (e.g., emotional amplification, cross-media dynamics, and regulatory complexity) are driven by the field issues and social interaction of field actors during firestorms. Information properties describe material aspects of information along with information meaning and interpretation. Meanwhile, properties related to field actors describe the network of actors and their relations.

Together, the properties explain the nature and dynamics of online firestorms leading to a better understanding of this complex phenomenon. The properties show why and how protest activities and collective action online are different from those in the conventional public sphere, and how they can lead to changes in organizational fields.

6.1.2 Digitally Native Activism

RQ2.1: What are the opportunity structures for the emergence of online activism?

Our research shows that online activists use various opportunity structures including local and international events, state policies, as well as discursive opportunities (e.g., emotional resonance and attitudes towards such issues as immigration, racism, and discrimination) to initiate, mobilize and promote their activity.

Moreover, online activists use novel opportunity structures created by the Internet and social media (Ayres, 1999; Nagle, 2017). Such opportunities include transparency and affordances provided by digital technologies, the vulnerability of online actors, and the digital nature of many activists' targets. For example, issues that became targets of the Sleeping Giants activism included social media platforms governance, content moderation, and the issue of programmatic advertising that enables the spread and monetization of hate and disinformation through online networks.

RQ2.2: What are the mobilizing structures (i.e., the participation, organizing, and coordinating patterns of the actors) in digitally native activism?

Online activists adopt new forms of coordination and organization using digital tools (e.g., the shared google document, the website with a toolkit), and affordances of social media (e.g., broadcasting through the pinned tweet functionality on Twitter, retweets and mentions), that go beyond simple hashtag sharing (Freelon et al., 2020; Jackson, Bailey, & Welles, 2020).

Regarding participation rates in online activism, we showed that engagement with the movement and the decision to take part in the contentious activity are often emotion driven (Jasper, 1998; Jasper & Poulsen, 1995). Sleeping Giants' activists who joined the movement during periods of moral outrage showed higher commitment to the movement. Higher participation rates were also more common for activists from the early cohorts than for latecomers.

The case of Sleeping Giants shows that participation in contentious activity online presents a form of crowdsourcing with a combination of more complex crowd work (e.g., notification of advertisers) and low commitment actions (i.e., retweets and replies). Our analysis highlights the importance of a few committed workers, who produce initial notifications, along with amplifiers and a crowd, whose small actions contribute to the overall success of the movement. The empirical study of the *#StopHateForProfit* coalition reinforces these findings showing that the volume of original content in online campaigns is low but it is amplified through the network by the critical periphery (Barberá et al., 2015).

Conclusion

RQ2.3: What framing tasks (i.e., strategic articulation, language, and rhetoric) do online activists use toward their targets.

Our findings showed that activists use diagnostic, prognostic, and motivational framing depending on the target and issue they are addressing. The framing choice might be driven by several reasons including the intention to differentiate themselves from more radical activists (i.e., radical flank effect) and the fact that persuasive tactics tend to be more effective than confrontational ones (Benkler, 2011; Brunsting & Postmes, 2002; Coleman, 2011; George & Leidner, 2019). Moreover, online activists may simultaneously have different targets and use different framing tasks because social media allows activists to have and switch between multiple targets faster and easier compared to protest activities offline. For example, Sleeping Giants extended their repertoire of contention beyond its original target (i.e., Breitbart) and used a range of framing tasks for different targets that included organizations, individuals, state policies, etc. We argue that the strategic choice of framing contributed to the movement's success as it allowed activists to gain legitimacy and initial recognition as a worthy and respectable field actor, while enabling agility in addressing various issues.

6.1.3 Cross-movement Coalitions Online

RQ3.1: How is participation in an online cross-movement coalition distributed across partners?

The case of the *#StopHateForProfit* campaign shows that the distribution of work in coalitions is uneven and varies over time, often being triggered by opportunity structures. Coalition partners are responsible for most of the original content, but the contribution of each partner varies. Interestingly, it is not necessarily the largest or better-resourced organizations that lead the coalition; instead, social media allows even marginal groups to be a driving force of an online campaign.

The activity of the followers in large is proportional to the partner's activity. At the same time, a low participation rate of followers for certain partners can be compensated by the large size of their followership. We also found that participation in the cross-movement coalition is not limited to coalition partners and their followers but also involves active participation of non-followers and users in the network periphery. This finding indicated the diminishing role of formal membership in movement organizations for online activism which is now replaced by the network and algorithmic reach.

RQ3.2: How is the identity of cross-movement coalition partners, as instantiated in the social media discourse, ideological inclination, and social integration of the movements, related to their participation?

Our analysis showed that partners' participation depends on several factors, including the respective partner's own agenda, familiarity with the tactical repertoire online, previous experience in similar campaigns, and the overall social media presence and activity. While larger movements might help to bring more attention to the movement, they might not have enough interest and time, thus having low commitment and participation in the coalition activities. At the same time, movement organizations that are young but are more experienced in digital activism and have active social media presence may show higher commitment and larger contribution to the movement.

Another factor important for coalition activity is ideology. Similar ideology of participants is not only a necessary condition for the initial coalition formation, but it also affects the overall participation in the protest activities online. This implies that large followership does not necessarily translate into more participation because followers with high variance in ideological inclination may not be interested in the coalition agenda. In the case of the *#StopHateForProfit* campaign ideologically homogenous followership showed a higher participation rate than a heterogeneous one, even when the partners' ideologies were similar.

6.2 Contributions

This thesis makes several important contributions to the research on online activism, social movements, and cross-movement coalitions. We show why and how many aspects of activism (i.e., emergence, organization, contentious activity, spread, participation, field actors' relationships, etc.) are different online compared to the pre-digital contexts, thus presenting novel phenomena that require their own conceptualization and the revision of existing theories.

First, our proposed framework of online firestorm properties (Chapter 3) extends earlier conceptualization (Pfeffer et al., 2014) by synthesizing concepts from information science, social networks, and organization theory. Together these properties provide a holistic view on the socio-technical nature of online firestorms and explain different aspects of firestorm dynamics that may generate a field-level change. The framework presents multiple lenses to study online firestorms and along with the suggested agenda has the potential to foster new research on this emerging phenomenon by scholars across various disciplines.

Conclusion

Second, contrary to some skeptics' argument that online activism is limited to hashtag sharing and clicktivism (Gladwell, 2011; Morozov, 2011), we show that mobilization, coordination, and the repertoire of online activism are far more complex and may generate social change. Our analysis of the Sleeping Giants movement reveals an innovative repertoire of contention and novel ways of protest activity along with affordances of social media allowing even small actions to be impactful online (Bennett & Segerberg, 2012; George & Leidner, 2019). The work of online activists resembles peer-production (Kittur, Chi, Pendleton, Suh, & Mytkowicz, 2007; Kittur & Kraut, 2008) with different types of work and the division of labor between online participants. At the same time, we also confirm the importance of the critical periphery in online protest networks that was previously studied by other scholars (Barberá et al., 2015; González-Bailón, Borge-Holthoefer, & Moreno, 2013; González-Bailón & Wang, 2016). Our study indicates that "clicktivism" can be effective when paired with higher-level commitment actions.

Next, this research contributes to the literature on cross-movement coalitions and alliances. We show that resource mobilization theories (Jenkins, 1983; McCarthy & Zald, 1977) that explained the initiation, formation, and success of cross-movement coalitions in pre-digital contexts are less relevant for online activism. This is because the participation, contribution, and online status of each coalition partner do not necessarily depend on monetary value and physical resources in the realm of social media. Thus, the Internet and social media change the boundaries of traditional cross-movement coalitions enabling new hybrid movements (Goss & Heaney, 2010; Heaney & Rojas, 2014), where organizations unite and become partners despite their physical distance, differences in size, resources, and organizational structure.

Likewise, formal membership becomes less important for online coalitions. On the one hand, social media allows participants to simultaneously follow multiple field actors at no cost, thus eliminating the need to compete for membership. Instead, it incentivizes membership sharing, because followers who follow more than one coalition partner show higher participation levels in the coalition activity than non-overlapping ones. On the other hand, formal membership is not even required for participation in online protest activities (Staggenborg, 1986; van Dyke & Amos, 2017) because social media facilitates weak ties and allows participation of non-followers and network periphery.

In addition, the empirical cases used in this research program contribute to the studies of corporate activism and platform governance. We show how online activists adopt and transform existing tactics of "naming & shaming" (Bartley & Child, 2014; Eesley, Decelles, & Lenox, 2016; Zhang & Luo, 2013) and "proxy targeting" (Briscoe, Gupta, & Anner, 2015;

Walker, Martin, & McCarthy, 2008). Thus, corporate activism moves to the online arena supported by affordances of social media and digital technologies that allow greater transparency and accountability of corporate actors (Briscoe & Gupta, 2016; King & Pearce, 2010). Our research also demonstrates the increasing role online activists play in changing the practices of platform governance and content moderation by not only putting those issues under a spotlight but also acting as a form of private politics (Crawford & Gillespie, 2016; Gillespie, 2018).

Therefore, the findings of this research might also be of interest to practitioners including public relations professionals, crisis managers, and social media activists. The Sleeping Giants and *#StopHateForProfit* cases highlight the challenges for brand safety introduced by algorithmic decisions such as programmatic advertising. The study of online firestorms explains the dynamics and consequences of the outrage on social media, emphasizing the importance of adequate response to a firestorm, and the adoption of relevant crisis communication strategies. Finally, participants and organizers of online activism may get important insights about success factors that make campaigns impactful. Due to the decentralized nature of online activism organizers may not be fully aware of the opportunities and challenges for mobilization, participation, and coordination of campaigns on social media.

6.3 Limitations

Due to time, financial, technical, and other constraints this research has several limitations. First, using social media data for social research may include technical, ethical, and methodological challenges (Ahmed, Bath, & Demartini, 2017; Bail, 2014; Freelon, 2018; Tinati, Halford, Carr, & Pope, 2014). We acknowledge limitations stemming from the nature of digital traces, our design of data collection, and choices of methods related to processing and analysis of collected samples (Sen, Floeck, Weller, Weiss, & Wagner, 2019). We used Twitter as the main source of data for both empirical studies because it allows crawling large datasets with millions of posts based on the specified selection criteria. However, the sampling process is controlled by Twitter and presents a "black box" for the user, who has no control over how data is selected. This may result in selection bias and challenge sample representativeness (Morstatter, Pfeffer, & Liu, 2014; Morstatter, Pfeffer, Liu, & Carley, 2013; Sampson, Morstatter, Maciejewski, & Liu, 2015). Moreover, social media platforms create filter bubbles which bring the danger of trying to "understand complex social phenomena with data that is blurred by the particulars of the platform" (Luczak-Roesch & Tinati, 2017). This

Conclusion

means that the emergence, spread, dynamics, users' demographics, and network structure of any given firestorm or social movement may depend on the specifics of the social media platform, its algorithm, and design.

Secondly, online firestorms, digitally native activism campaigns, and cross-movement coalitions present emerging phenomena, thus may require longitudinal studies to fully understand their nature and evolution. The cases of both the Sleeping Giants movement and the *#StopHateForProfit* coalition highlight how online activism transforms, diverging into new strategies, targets, and agendas. We acknowledge, however, that these findings provide only a glimpse into such transformation and the analysis of these campaigns' further evolution is beyond the timeframe of this research program.

Lastly, this thesis consists of one conceptual study and two empirical papers based on the case study approach. Therefore, the limitations associated with an inductive exploratory case study apply. The generalizability of this research corresponds to "generalizing from description to theory" (Lee & Baskerville, 2003) or "Level-2 inference" type (Yin, 2014), and external validity may be limited. While theory building from cases is appropriate for new topic areas, further accumulation of representative samples and theory-testing empirical studies will be required to increase external validity and generalizability of our findings (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). In addition, this thesis focuses on two cases of corporate activism with certain similarities in tactics and goals (i.e., proxy targeting, the issue of online advertising, and the governance of social media platforms). It is unclear whether the tactics, patterns of mobilization, the repertoire of contentious activity, and the outcomes would be different for online social movements with other targets (e.g., human rights, animal welfare, environment).

6.4 Future Research

We plan to continue research on impactful activism that may lead to social changes. For example, the relationship between different forms of online activism (e.g., the interplay between online firestorms, social movements, and coalitions) is yet under-explored but may provide deeper insights on how social media is used to enact changes in organizational fields. The further conceptualization of online firestorms, including the development of measures, comparison, and assessment of different properties is another area for future research, along with empirical studies using the proposed framework of online firestorms properties.

Moreover, multiple opportunities for future studies come from the unprecedentedly large amount of data that was collected during this research program. Over the period of three years, we have collected around 900 million tweets, but only part of this dataset was used in this thesis. For example, as explained in Chapter 4, our study of the Sleeping Giants movement was mostly based on the activity of the US account. However, we have also crawled all tweets related to 16 international accounts (see Appendix 4A, total 10,058,580 unique tweets). This rich data can be used to conduct additional studies that will contribute to the understanding of cross-movement dynamics, coordination, and communication between different branches of the movement. Considering differences in opportunity structures and targets of international accounts, the data can also inspire independent studies of those accounts and thus present ample opportunities for co-authorship and collaboration with other researchers across different disciplines and geographical borders.

Likewise, to explore the *#StopHateForProfit* coalition (Chapter 5) we collected timelines of all followers of each coalition partner (857 million tweets from 1.8 million users) but used only a subset of 47 million tweets from the followers who participated in the campaign. It is important to note that collected data contains not only tweet-related information but also information about users, their profile, media entities, etc. Therefore, there are opportunities to compare and explore the differences between participating and non-participating followers to shed light on potential drivers and motivation for participation in social media activism.

6.5 Concluding Remarks

The Internet and social media are changing the face of activism providing new opportunities and challenging boundaries of conventional social movements. Activists gradually shift from the simple use of digital technologies for supporting offline activities to full e-movements when entire campaigns and all aspects of activism happen online. Established theories of social movements and collective action can not sufficiently explain these new forms of activism and contentious activity in the realm of social media. This research contributes to the investigation of these emerging phenomena shedding light on the nature and dynamics of online activism. Arguably, online activists become trailblazers in addressing issues introduced by the Internet and social media and a driving force for changes in the governance of platforms, algorithms, and policies. We still have to see how, when, and if these actions will lead to changes in political, cultural, and social life in the long term.

6.6 References

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APPENDICES RELATED TO CHAPTERS 2, 3, 4, 5

Appendix 2A: Tables from the Database Exporter

Tweets

Column	Туре	Description	Comment / Example
tweet_id	int (64 bit)	Tweet ID	"1073087438707281921"
created_at	date	The time when the tweet was sent	"created_at": "Mon Nov 29 21:18:15 +0000 2010"
tweet_type	str (2chr)	One of four types: TW – tweet; RE- reply RT – retweet; QT – quoted tweet	
full_text	str (1024 chr)	Full text of a tweet	Since 2016 can easily exceed 280- characters because Media attachments (e.g., Photos, GIFs, Polls, Quote Tweets), @ in Replies are not counted in 140/280-chr limit
user_id	int (64 bit)	User who created this tweet	
in_reply_to_status_id	int (64 bit)	If the represented Tweet is a reply, this field will contain the integer representation of the original Tweet's ID	
in_reply_to_user_id	int (64 bit)	If the represented Tweet is a reply, this field will contain the integer representation of the original Tweet's author ID	
in_reply_to_screen_n ame	str (64chr)	If the represented Tweet is a reply, this field will contain the screen name of the original Tweet's author	Was capped at 20 characters, changed to 50 in 2017
hashtags	str (512chr)	All hashtags that occur in the tweet, separated with ","	
hashtags_count	int (8 bit)	Number of hashtags in a tweet	
url_count	int (4 bit)	Number of URLs in a tweet	A URL of any length will be altered to 23 characters, even if the link itself is less than 23 characters long. Your character count will reflect this
media_count	int (8 bit)	Number of all media (native media including photos, gifs, etc.)	
retweeted_status_id	int (64 bit)	ID of a tweet, which current tweet is retweeting	
is_quote_status	bool	Shows if the tweet is of type Quote	
quoted_status_id	int (64 bit)	This field only surfaces when the Tweet is a Quote Tweet. This field contains the integer value Tweet ID of the quoted Tweet	
mention_count	int (8 bit)	Number of all mentions	Can be user mentioned as RT, reply or just in the text of a tweet

Column	Туре	Description	Comment / Example
retweet_count	int (32 bit)	Number of times the tweet has been retweeted	
favourite_count	int (32 bit)	Number of times the tweet has been liked	
lang	str (8 chr)	BCP 47 language identifier corresponding to the machine-detected language of the Tweet text, or "und" if no language could be detected or identified	Ex: "lang": "en", "lang": "msa", "lang": "zh-cn"
possibly_sensitive	bool	This field only surfaces when a Tweet contains a link. The meaning of the field doesn't pertain to the Tweet content itself, but instead it is an indicator that the URL contained in the Tweet may contain content or media identified as sensitive.	
display_start	int (16 bit)	Taken from "display_text_range"	Note: for long RTs (>140 ch), displays only [0140]
display_end	int (16 bit)	Taken from "display_text_range"	
character_count	Int (16 bit)	The length of the Tweet (calculated)	
coordinates	bool	If true: Represents the geographic location of this Tweet as reported by the user or client application. The inner coordinates array is formatted as geoJSON (longitude first, then latitude) See more details: https://developer.twitter.com/en/docs/t witter-api/v1/data-dictionary/object- model/geo	Coordinates can be point, line, polygon (describing the area), etc > there can be a series of longitude and latitude points. For simplification we use only the first two (in case of polygon it will correspond to the upper angle), which should be enough for approximation.
place_id	str (256chr)	ID representing this place	Ex: "id":"01a9a39529b27f36"
place_type	str (64 chr)	The type of location represented by this place	Ex: "place_type":"city"
place_full_name	str (256chr)	Full human-readable representation of the place's name	Ex: "full_name":"Manhattan, NY"
country_code	str (2 chr)	Shortened country code representing the country containing this place	Ex: "country_code":"US"
latitude	float	Taken from coordinates	Ex: "coordinates":
longtitude	float	Taken from coordinates	40.05701649]
withheld_copyright	bool	When "true" indicates that this piece of content has been withheld due to a DMCA complaint	Ex: "withheld_copyright": true
withheld_in_countrie	str (256 chr)	When present, indicates a list of uppercase two-letter country codes this content is withheld from due to DMCA request	Ex: "withheld_in_countries": ["GR", "HK", "MY"]
raw_file	str	the path to the file on disk/server	

Column	Туре	Description	Comment / Example
endpoint	2 chr	Indicator whether the data comes from: st - streaming, mt - search, mentions, tm- timeline, re - replies	
primary_captue	bool	True if the tweet is from the highest level (e.g. tweet object) in JSON blob. False if the tweet was captured from the nested tweet structure: retweets, quoted tweets	

Users

Column	Туре	Description	Comment / Example
user_id	int (64 bit)	user ID	
name	str (64 chr)	Was capped at 20 characters, changed to 50 in 2017	Ex: "name": "Twitter API"
screen_name	str (64 chr)	Screen name of a user. Typically a maximum of 15 characters long, but some historical accounts may exist with longer names	Ex: "screen_name": "twitterapi"
endpoint	2 chr	Indicator whether the data comes from: st - streaming, mt - search, mentions, tm- timeline, re - replies	
location	str (256 chr)	The user-defined location for this account's profile. Not necessarily a location, not machine-parseable. This field will occasionally be fuzzily interpreted by the Search service	"location": "San Francisco, CA"
description	str (512chr)	The user-defined UTF-8 string describing their account.	"description": "The Real Twitter API."
url	str (256)	A URL provided by the user in association with their profile.	"url": "https://dev.twitter.com"
protected	bool	When true, indicates that this user has chosen to protect their Tweets.	See more About Public and Protected Tweets
followers_count	int (32 bit)	The number of followers this account currently has	Under certain conditions of duress, this field will temporarily indicate "0".
friends_count	int (32 bit)	The number of users this account is following (AKA their "followings"	Under certain conditions of duress, this field will temporarily indicate "0".
listed_count	int (8 bit)	The number of public lists that this user is a member of	Under certain conditions of duress, this field will temporarily indicate "0".
favourites_count	int (32 bit)	The number of Tweets this user has liked in the account's lifetime.	British spelling used in the field name for historical reasons
created_at	date	The UTC datetime that the user account was created on Twitter	"created_at": "Mon Nov 29 21:18:15 +0000 2010"
verified	bool	When true, indicates that the user has a verified account	The blue verified badge on Twitter
statuses_count	int (32 bit)	The number of Tweets (including retweets) issued by the user	

Column	Туре	Description	Comment / Example
lang	str (8 chr)	The BCP 47 code for the user's self- declared user interface language. May or may not have anything to do with the content of their Tweets	"lang": "zh-cn"
geo_enabled	bool	Indicates whether geo location is enabled	
contributors_enabled	bool	Indicates that the user has an account with "contributor mode" enabled, allowing for Tweets issued by the user to be co-authored by another account	Rarely "true"
withheld_in_countrie s	str (256 chr)	When present, indicates a list of uppercase two-letter country codes this content is withheld from due to DMCA request	Ex: "withheld_in_countries": ["GR", "HK", "MY"]
tweet_id	int (64 bit)	ID of the tweet (see TWEETS table)	
capture_date	date	Only filled when the capture date is same as the date of user stats	The field will be empty for old tweets that were captured through Search engine or were nested as retweets or quotes
time_zone		Was originally available only for users (not tweets) but made private since April 2018 due to the General Data Protection Regulation (GDPR)	Always returns null

Mentions

Column	Туре	Description	Comment / Example
tweet_id	int (64 bit)	ID of the tweet (see TWEETS table)	
user_id	int (64 bit)	user ID (see USERS table)	

Hashtags

Columns	Туре	Description	Comment / Example
hashtag_id	int (64 bit)	ID / Counter for hashtags	
text	str (512 chr)	Name of the hashtag, minus the leading '#' character	Ex: "text":"nodejs"
display_start	int (16 bit)	Taken from indices: the offsets within the Tweet text where the hashtag begins	
display_end	int (16 bit)	Taken from indices: the offsets within the Tweet text where the hashtag ends	
tweet_id	int (64 bit)	ID of the tweet (see TWEETS table)	

Column	Туре	Description	Comment / Example
symbol_id	int (64 bit)	ID / Counter for symbols	
text	str (256 chr)	Name of the hashtag, minus the leading '#' character	Ex: "text":"twtr"
display_start	int (16 bit)	Taken from indices: the offsets within the Tweet text where the symbol begins	
display_end	int (16 bit)	Taken from indices: the offsets within the Tweet text where the symbol ends	
tweet_id	int (64 bit)	ID of the tweet (see TWEETS table)	

Symbols

Media

Column	Туре	Description	Comment / Example
media_id	int (16 bit	ID / Counter for media	
media_url	str (2048 chr)	An http:// URL pointing directly to the uploaded media file.	Ex: "media_url":"http://p.twimg.co m/AZVLmp-CIAAbkyy.jpg"
url	str (512 chr)	Wrapped URL for the media link. This corresponds with the URL embedded directly into the raw Tweet text, and the values for the indices parameter.	Ex: url":"http://t.co/rJC5Pxsu
expanded_url	str (2048 chr)	An expanded version of display_url. Links to the media display page	Ex: "expanded_url": "http://twitter.com/yunorno/stat us/114080493036773378/photo /1"
type	str (16 chr)	Type of uploaded media. Possible types include photo, video, and animated_gif	
display_start	int (16 bit)	Taken from indices: the offsets within the Tweet text where the URL begins	
display_end	int (16 bit)	Taken from indices: the offsets within the Tweet text where the URL ends	
source_status_i d	int (64 bit)	For Tweets containing media that was originally associated with a different tweet, this ID points to the original Tweet.	Ex: "source_status_id": 205282515685081088
tweet_id	int (64 bit)	ID of the tweet (see TWEETS table)	

URLs

Column	Туре	Description	Comment / Example
url_id	int (16 bit	ID / Counter for URLs	
url	str (512 chr)	Wrapped URL for the media link. This corresponds to the URL embedded directly into the raw Tweet text, and the values for the indices parameter.	Ex: url":"http://t.co/rJC5Pxsu

Column	Туре	Description	Comment / Example
expanded_url	str (2048 chr)	An expanded version of display_url. Links to the media display page	Ex: "expanded_url": "http://twitter.com/yunorno/stat us/114080493036773378/phot o/1"
display_start	int (16 bit	Taken from indices: the offsets within the Tweet text where the URL begins	
display_end	int (16 bit	Taken from indices: the offsets within the Tweet text where the URL ends	
title	str (256 chr)	HTML title for the link.	Ex: "title":"Using Twitter as a 'go-to' communication channel"
description	str (512 chr)	HTML description for the link.	Ex: "description":"Using Twitter as a 'go-to' communication channel during severe weather"
tweet_id	int (64 bit)	ID of the tweet (see TWEETS table)	

Appendix 3A: Online Firestorms in the Literature
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#	Author(s), Year	Title	Online firestorm case(s) used / mentioned	Summary	Concepts to explain and study online firestorms	Relevance to proposed framework*
1	Chan, Lee, & Skoumpopoulou, 2019	The effects of rhetorical appeals and moral judgement on intention to participate in social media firestorms.	 the 'racist' hoodie advertising campaign from H&M UA Flight 3411: violent passenger removal due to overbooking 	Online experiment, explaining how rhetorical appeals shape the persuasiveness of firestorms and influence an individual's intention to participate in it.	Rhetorical appeals (i.e., ethos, pathos, and logos appeals) moral judgements	Quadrant 3
2	Drasch, Huber, Panz, & Probst, 2015	Detecting online firestorms in social media.	Online firestorm detected on the Coca- Cola Facebook page (no details). Mentioned: - "Dell Hell": unsatisfied customers complaining about poor customer service and product quality of Dell	Online Firestorms Detector: algorithm inspired by epidemiological surveillance systems.	Emotions, negative electronic word of mouth (eWOM)	Quadrant 3
3	Einwiller, Viererbl, & Himmelreich, 2017	Journalists' coverage of online firestorms in German-language news media.	 130 online firestorms (German media) over 16 months Mentioned: 2014 giraffe Marius: a firestorm due to Copenhagen Zoo's decision to euthanize a young male giraffe 2013 Barilla firestorm due to the CEO's comment about gay couples 	A quantitative content analysis of media articles about online firestorms in order to investigate how and what types of firestorms are covered by journalists.	Cross-media dynamics, emotions, issue framing (e.g., "perceived moral misconduct")	Quadrant 3
4	Hansen, Kupfer, & Hennig- Thurau, 2018	Brand crises in the digital age: The short-and long- term effects of social media firestorms on consumers and brands.	78 online firestorms Mentioned: - #DeleteUber: due to criticism for collecting fares during a taxi strike in protest of Trump's "Muslim travel ban" - UA Flight 3411 case	Elaboration likelihood model (ELM) of consumer behaviour. Effect of ELM-based triggers and firestorm characteristics on changes in brand perception.	Online firestorms triggers (i.e., issues), news media coverage, temporal characteristics	Quadrant 1, 3, 4

#	Author(s), Year	Title	Online firestorm case(s) used / mentioned	Summary	Concepts to explain and study online firestorms	Relevance to proposed framework*
5	Hauser, Hautz, Hutter, & Füller, 2017	Firestorms: Modeling conflict diffusion and management strategies in online communities.	Mentioned / Discussed: - #myNYPD: hijacked hashtag due to police brutality - #McDStories: hijacked hashtag to share horror stories and past problems related to the food chain - Moleskine firestorm due to asking community to submit a new blog logo for free - #UnitedBreaksGuitars: a YouTube song how musician's guitar was ruined by the airline - Pril dishwash logo design contest - SPAR's firestorm due to new shopping bags design online contest	Agent-based simulation model of online firestorms in order to understand how organizations can manage firestorms and how characteristics of online communities affect firestorm development.	Online community, social conflict theory, information diffusion, opinion adoption, crisis communication & conflict management	Quadrant 1, 2, 3, 4
6	Herhausen, Ludwig, Grewal, Wulf, & Schoegel, 2019	Detecting, preventing, and mitigating online firestorms in brand communities.	Mentioned: - #DeleteUber - UA Flight 3411	Text-mining on negative customer posts on social media across 89 online brand communities in order to identify drivers of and responses to online firestorms.	Emotions, structural tie strength, linguistic style, crisis communication theories	Quadrant 2, 3, 4
7	Jansen, 2019	The fiery, the lovely, and the hot - analysis of online viral phenomena in social media.	Mentioned: - Barilla online firestorm	Logistic regressions on a manually classified data set to examine online firestorms and other types of buzzes using various content-related, temporal, user-related and engagement variables.	Emotions, temporal characteristics	Quadrant 1, 3
8	Johnen, Jungblut, & Ziegele, 2017	The digital outcry: What incites participation behavior in an online firestorm?	Mentioned: Bud Light's #UpForWhatever (blamed for promoting date rape)	Lab experiment using simulated firestorm in order to examine willingness to participate in online firestorms; adoption of opinions; level of indignant tonality.	Emotions (moral panics), desire for social recognition, adoption of opinions	Quadrant 2, 3, 4

#	Author(s), Year	Title	Online firestorm case(s) used / mentioned	Summary	Concepts to explain and study online firestorms	Relevance to proposed framework*
9	Lamba, Malik, & Pfeffer, 2015	A tempest in a teacup? Analyzing firestorms on Twitter.	 #CancelColbert: online firestorm after the comedy news show host Stephen Colbert tweeted a joke that was perceived as racially insensitive towards Asian Americans on Twitter #myNYPD Identified 80 firestorms from 10% random sample of tweets 	Constructing and measuring change in mention networks of participants over the course of online firestorm as a measure of firestorm effect on social structure.	Two-way communications, firestorm decay, ties (mentions) network	Quadrant 1, 2, 4
1(LeFebvre & Armstrong, 2018	Grievance-based social movement mobilization in the #Ferguson Twitter storm.	- #Ferguson online firestorm	- Content and sentiment analysis of 6M tweets in order to identify mobilizers, leaders, motivators and accelerators in online firestorms.	Emotions, issues, cross-media dynamics, new forms of organizing (hashtags) and leadership	Quadrant 3, 4
11	Lim, 2017	How a paracrisis situation is instigated by an online firestorm and visual mockery: Testing a paracrisis development model.	 2013 Woolworths firestorm due to controversial billboard ad with donut as "fresh food" Mentioned: Motrin Moms Ad: a firestorm due to controversial painkiller ad that likened babywearing to a fashion statement Korean Airlines "nut rage" incident in 2014: vice president dissatisfied with the way a flight attendant served nuts on the plane, ordered the aircraft to return to the gate before takeoff 	Online experiment using simulated online firestorm in order to understand the interplay between social proof and visual mockery on the firestorm perceptions of a crisis.	Cognitive appraisal theory, social proof, bandwagon perception, emotions	Quadrant 2, 3
12	Mochalova & 2 Nanopoulos, 2014	Restricting the spread of firestorms in social networks.	Mentioned: #McDStories	Introduction of a seed-selection method that is based on the concept of local centrality as a method to constrain online firestorms.	Social network analysis (SNA)	Quadrant 2

7	[#] Author(s), Year	Title	Online firestorm case(s) used / mentioned	Summary	Concepts to explain and study online firestorms	Relevance to proposed framework*
1	3 Morello, 2015	Science and sexism: In the eye of the Twitterstorm	 #addmaleauthorgate: a firestorm due to peer-review suggestion to add male biologist as a co-author to improve analysis #shirtstorm, #Shirtgate: a firestorm due to the European Space Agency scientist's shirt covered with half-naked women #distractinglysexy: online firestorm due to Nobel Prizewinning biologist Tim Hunt's sexist comment Mentioned: #Ferguson #CeciltheLion: a lion killed by an American tourists in National Park #YesAllWomen: stories of misogyny and violence against women 	Description of different online firestorms related to science and sexism.	Power shift, emotions, hashtags as a new tool for online firestorms, speed and volume of information	Quadrant 1, 3, 4
1	4 Nitins & Burgess, 2014	Twitter, brands, and user engagement.	 Sony Playstation online firestorm due to the network hack and shutdown Mentioned: #QantasLuxury: hijacked hashtag after labor dispute 	A case study of the Sony Playstation firestorm to understand how the role of users engagement on the firestorm dynamics.	Two-way communications, power shift, speed and volume of information	Quadrant 1, 4
1	⁵ Park, Cha, Kim, & Jeong, 2012	Managing bad news in social media: A case study on Domino's Pizza crisis.	 Domino's Pizza online firestorm due to a hoax video by two employees showing disturbing images of themselves at wok while preparing food Mentioned: Papa Johns "lady chinky eyes" online firestorm due to a racial slur in receipt 	SNA, sentiment analysis and qualitative analysis of 1.7 billion tweets related to the Domino's Pizza firestorm in order to explore temporal and spatial diffusion characteristics of online firestorms, sentiment and the effect of the network structure on the firestorms dynamics.	Emotions, network structure, spatial characteristics, information diffusion	Quadrant 1, 2, 3

	#	Author(s), Year	Title	Online firestorm case(s) used / mentioned	Summary	Concepts to explain and study online firestorms	Relevance to proposed framework*
1	.6	Pfeffer, Zorbach, & Carley, 2014	Understanding online firestorms: Negative word-of-mouth dynamics in social media networks.	 #McDStories #QantasLuxury ING-DiBa bank online firestorm due to their commercial that met a backlash from vegetarians and vegans Mentioned: Kryptonite lock firestorm due to a video showing how their supposedly secure lock can be hacked with a pen 	Conceptual paper which theorizes online firestorm phenomenon by introducing seven generalized factors of online firestorms.	Information- and network- centric view; seven factors	Quadrant 1, 2, 3
1	.7	Rauschnabel, Kammerlander, & Ivens, 2016	Collaborative brand attacks in social media: exploring the antecedents, characteristics, and consequences of a new form of brand crises	29 online firestorms, including: - #UnitedBreaksGuitars - Dell-Hell - Domino's Pizza online firestorm - ING-DiBa bank online firestorm	Delphi study followed by a qualitative analysis of online firestorm cases in order to develop a framework that explains the triggers, the amplifiers, and reaction strategies to online firestorms.	Event (i.e., issue) driven, cross-media dynamics, online firestorm persistence over time, role of initiators, influencers and netizens, two- way communications	Quadrant 1, 3, 4
1	.8]	Rost, Stahel, & Frey, 2016	Digital social norm enforcement: online firestorms in social media.	Mentioned: - A firestorm against Christian Wulff due to corruption allegations - Amazon firestorm due to ill treatment of temporary workers - A firestorm against Karl-Theodor zu Guttenberg due to plagiarism allegations	Statistical analysis (random-effects and fixed-effects models) to predict online aggression in online petitions depending on the individual's anonymity.	Social norm theory, emotions, low-cost communications, issues	Quadrant 1, 3
1	.9 2	Rydén, Kottika, Hossain, Skare, & Morrison, 2019	Threat or treat for tourism organizations? The Copenhagen Zoo social media storm.	- 2014 giraffe Marius online firestorm	Qualitative analysis and conceptual model of negative consumer empowerment in online firestorms.	Social norm theory, emotions, power shift, cross-media dynamics, low-cost of initiation, fast spread, restraints of social media	Quadrant 1, 2, 3, 4
2	20 5	Salek, 2016	Controversy trending: the rhetorical form of Mia and Ronan Farrow's 2014 online firestorm against #WoodyAllen.	- #WoodyAllen online firestorm: the director was accused of being a child molester on Twitter.	Qualitative analysis of tweets discourse and media coverage in order to understand how the rhetorical form of a firestorm can create "macrocultural controversy" through a cross-media echo chamber.	Rhetorical form of discourse, cross-media dynamics, issue framing, opinions, emotions, online firestorm recurrence, lack of control	Quadrant 1, 3, 4

#	Author(s), Year	Title	Online firestorm case(s) used / mentioned	Summary	Concepts to explain and study online firestorms	Relevance to proposed framework*
2	Stieglitz & Krüger, 2011	Analysis of sentiments in corporate twitter communication-a case study on an issue of Toyota.	- Toyota online firestorm due to product recall Mentioned: - #QantasLuxury	Sentiment analysis of 730,000 tweets related to the Toyota firestorm in order to understand stages of firestorm, as well as sentiment differences between stages and different types of participants.	Emotions, issue	Quadrant 3
22	Zimmerman, 2 Chen, Hardt, & Vatrapu, 2014	Marius, the giraffe: A comparative informatics case study of linguistic features of the social media discourse.	- 2014 giraffe Marius online firestorm	Comparative informatics, social data analytics and sentiment analysis of social media and news media data in order to understand differences in local (Danish) and international discourse.	Emotions, speed and volume of social media communication	Quadrant 1, 3

Total:

Quadrant 1: 13 Quadrant 2: 9 Quadrant 3: 19

Quadrant 4: 11

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Appendix 3B: Examples of Online Firestorms

#	Online Firestorm	Year	Brief description	Selected news media articles
1	Kryptonite Bike Lock	2004	After one bike enthusiast posted on a forum a demonstration of opening an expensive Kryptonite bike lock using a Bic ballpoint pen, the video quickly spread on other forums and blogs, got mainstream attention and resulted in a public relations firestorm for Kryptonite.	"The Pen Is Mightier Than the Lock". The New York Times, 17 September 2004 (accessed 7 February 2020). http://www.nytimes.com/2004/09/17/nyregion/the-pen-is-mightier-than-the-lock.html
2	DellHell	2005	In 2005, Jeff Jarvis wrote a blog post on BuzzMachine.com complaining about Dell's poor customer service. While Dell ignored the post, other unsatisfied customers supported Jeff and started sharing their own experience and complains about issues with Dell products. The blog post gained popularity and turned into a firestorm with multiple comments, links and press coverage from tech blogs, newspapers, and magazines. Eventually Dell revised its customer relationship strategy.	 <u>"When Brands Don't Listen"</u>. On Digital Marketing (accessed 7 February 2020). <u>https://ondigitalmarketing.com/learn/odm/foundations/dell-hell-when-brands-dont-listen/</u> <u>"My Dell hell"</u> The Guardian, 29 August 2005 (accessed 7 February 2020). <u>https://www.theguardian.com/technology/2005/aug/29/mondaymediasection.blogging</u>
3	Motrin Moms Ad	2008	A controversial ad for Motrin painkillers which stated that "wearing your baby seems to be in fashion [and] totally makes me look like an official mom" triggered outrage of mothers and parents online. The company pulled the ad and apologized.	"Motrin Makers Feel Moms' Pain, Pull Babywearing Ad". The Washington Post, 18 November 2008 (accessed 7 February 2020). http://www.washingtonpost.com/wp-dyn/content/story/2008/11/17/ST2008111703533.html "Moms and Motrin". The New York Times, 17 November 2008 (accessed 7 February 2020). https://parenting.blogs.nytimes.com/2008/11/17/moms-and-motrin/
4	United Breaks Guitars	2009	Musician Dave Carroll authored a YouTube music video to tell about his frustration about how United Airlines broke his guitar and failed to compensate him after lengthy negotiations. The song became an immediate hit, gaining millions of views and causing a public relations embarrassment, and a reported stock price drop for the airline.	"Singer gets his revenge on United Airlines and soars to fame". The Guardian, 23 July 2009 (accessed 7 February 2020). https://www.theguardian.com/news/blog/2009/jul/23/youtube-united-breaks-guitars-video "United Breaks Guitars", Julia Hanna, Harvard Business School case, 29 November 2010 (accessed 7 February 2020). https://hbswk.hbs.edu/item/united-breaks-guitars
5	Domino's Pizza	2009	Two Domino's Pizza's employees uploaded a YouTube video that shows them violating health codes by engaging in disturbing and unsanitary actions while preparing food at work. The video received over one million views in the first three days and caused a reputation crisis for the company.	"Video Prank at Domino's Taints Brand". The New York Times, 15 April 2009 (accessed 7 February 2020). http://www.nytimes.com/2009/04/16/business/media/16dominos.html "Dominos Pizza defends reputation on Twitter after YouTube video shows employees abusing food". The Telegraph, 16 April 2009 (accessed 7 February 2020). http://www.telegraph.co.uk/news/wortdnews/northamerica/usa/5164216/Dominos-Pizza- defends-reputation-on-Twitter-after-YouTube-video-shows-employees-abusing-food.html
6	Gap Logo	2010	On October 4, 2010, Gap introduced a new logo to refresh its branding. After severe backlash from passionate fans, critics, and media on social media, the company reverted to its previous "blue box" logo on October 12, after less than a week.	"Lessons to be learnt from the Gap logo debacle". BBC News, 12 October 2010 (accessed 7 February 2020). https://www.bbc.com/news/magazine-11517129 "Gap scraps logo redesign after protests on Facebook and Twitter". The Guardian, 12 October 2010 (accessed 7 February 2020). https://www.theguardian.com/media/2010/oct/12/gap-logo-redesign
#	Online Firestorm	Year	Brief description	Selected news media articles
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7	Nestle Kit Kat vs Greenpeace	2010	Greenpeace criticized the corporate social responsibility of Nestlé because of its use of palm oil produced by companies that are involved in the destruction of Indonesian rainforests. Greenpeace asked people to replace their profile pictures with a "Nestlé Killer" logo adapted from the original Nestlé's "Kit Kat" logo. The campaign attracted over 1.5 million people, with many users engaging through Nestlé's Facebook fan page.	" <u>Nestlé hit by Facebook "anti-social" media surge".</u> The Guardian, 19 March 2010 (accessed 7 February 2020). https://www.theguardian.com/sustainable-business/nestle-facebook " <u>Activists Use Facebook To Help Pressure Nestlé On</u> <u>Deforestation Issue"</u> . Adweek, 23 March 2010 (accessed 7 February 2020). https://www.adweek.com/digital/activists-use-facebook-to-help- pressure-nestle-on-deforestation-issue/
8	#QantasLuxury	2011	Qantas Airlines launched a competition to win Qantas' first-class pyjamas and luxury amenity kits, asking Twitter users to use the hashtag #QantasLuxury to describe their "dream luxury inflight experience." In response, the company faced a firestorm and the hashtag was subverted for angry and sarcastic tweets that highlighted Qantas's ongoing industrial relations dispute with its workers.	"Qantas Twitter campaign takes nosedive". ABC, 22 November 2011(accessed 7 February 2020). <u>https://www.abc.net.au/news/2011-11-</u> 22/qantas-twitter-hashtag-backfires/3686940 "Epic fail for Qantas Twitter competition". Reuters, 22 November 2011(accessed 7 February 2020). <u>https://www.reuters.com/article/us-qantas-</u> idUSTRE7AL0HB20111122
9	#McDStories	2012	McDonald's launched a Twitter campaign for the hashtag #McDStories, hoping for positive stories about McDonald's food from the public. The campaign backfired when the hashtag was soon hijacked and used to share #McDHorrorStories about negative McDonald's customer experiences.	"#McDStories: When A Hashtag Becomes A Bashtag". Forbes, 24 January 2012 (accessed 7 February 2020). https://www.forbes.com/sites/kashmirhill/2012/01/24/mcdstories-when-a-hashtag-becomes-a- bashtag/ "McDonald's Twitter Campaign Goes Horribly Wrong". Business Insider, 24 January 2017 (accessed 7 February 2020). http://www.businessinsider.com/mcdonalds-twitter-campaign-goes-horribly-wrong-mcdstories- 2012-1
10	Barilla	2013	Guido Barilla, chairman of the world's largest pasta producer Barilla, commented in his radio interview that he wouldn't feature same-sex couples in his company's commercials because he prefers to showcase "traditional" families. The comments caused an outrage among civil rights activists and LGBTQ community.	"Pasta maker Barilla under fire for anti-gay comments". CNN, 26 September 2013 (accessed 7 February 2020). https://money.cnn.com/2013/09/26/news/companies/barilla-pasta-gay/index.html "How Barilla used its CEO's homophobic comments to reshape the company's image". Vox, 7 May, 2019 (accessed 7 February 2020). https://www.vox.com/the-goods/2019/5/7/18535740/barilla-homophobia-italy-chick- fil-a-comparison
11	#GiraffeMarius	2014	Copenhagen Zoo killed a young male giraffe named Marius, which was genetically unsuitable for future breeding but otherwise healthy. Despite offers to relocate Marius and the launch of an online petition, he was killed on 9 February 2014. His body was publicly dissected for educational purposes and then fed to the zoo's lions. The incident gained worldwide attention and ignited moral outrage about animal welfare among the public and animal rights organizations.	"Giraffe Killing at Copenhagen Zoo Sparks Global Outrage". National Geographic, 11 February 2014 (accessed 7 February 2020). https://www.nationalgeographic.com/news/2014/2/140210-giraffe-copenhagen- science/ "Killing Animals At The Zoo". The New Yorker, 9 January 2017 (accessed 7 February 2020). https://www.newyorker.com/magazine/2017/01/16/killing-animals-at-the-zoo

#	<i>t</i> Online Firestorm	Year	Brief description	Selected news media articles
1	2 #CancelColbert	2014	Stephen Colbert – then the host of the comedy news show The Colbert Report tweeted: "I am willing to show #Asian community I care by introducing the Ching-Chong Ding-Dong Foundation for Sensitivity to Orientals or Whatever." The intended joke was perceived as racially insensitive towards Asian Americans and ignited a firestorm.	"In #CancelColbert, A Firestorm And A Lost Opportunity". NPR, 1 April 2014 (accessed 7 February 2020). https://www.npr.org/sections/codeswitch/2014/04/01/297862152/in-cancelcolbert-a-firestorm- and-a-lost-opportunity ""Colbert Report" Ignites Outrage With Deleted Asian Joke Tweet". BuzzFeed, 28 March 2014 (accessed 7 February 2020). https://www.buzzfeednews.com/article/mbvd/colbert-report-ignites-outrage-with-deleted-asian- joke-tweet
1	3 #myNYPD	2014	The New York Police Department launched the #myNYPD hashtag, and asked the public to post personal pictures with NYPD officers. In response, Twitter users subverted the hashtag and used it to share stories about police brutality and misbehaviour.	"Well, the #MyNYPD hashtag sure backfired quickly". The Washington Post, 23 April 2014 (accessed 7 February 2020). https://www.washingtonpost.com/news/post-nation/wp/2014/04/22/well-the-mynypd-hashtag- sure-backfired-quickly/ "NYPD Social Media Outreach Backfires When Twitter Answers #myNYPD Campaign". WNBC, 22 April 2014 (accessed 7 February 2020). https://www.nbcnewyork.com/news/local/nypd-twitter-backlash- mynypd-fail-negative-photos-flood-social-media/
1	4 "Napalm girl" on Facebook	2016	Facebook removed from its platform an iconic Pulitzer prize-winning photograph of a Vietnamese girl fleeing napalm bombs. This decision triggered a firestorm and online debates over social media content moderation policies.	"Facebook Reverses Course on 'Napalm Girl' Photo After Outcry". Time, 9 September 2016 (accessed 7 February 2020). https://time.com/4485740/facebook-reinstate-napalm-girl-photo/ "Facebook Restores Iconic Vietnam War Photo It Censored for Nudity". The New York Times, 9 September 2016 (accessed 7 February 2020). https://www.nytimes.com/2016/09/10/technology/facebook-vietnam- war-photo-nudity.html
1	5 Charlie Gard	2017	A British baby was born with a rare genetic disorder that causes progressive brain damage and muscle failure. His case became controversial because of disagreements between the medical team and the baby's parents about the value of experimental treatment to treat his condition. The hashtag #CharlieGard was used on Twitter with many public figures (including President Donald Trump, Pope Francis, Prime Minister Teresa May, etc.), thus raising the profile of the debate in the public sphere.	"#CharlieGard: social media turns family tragedy into global war of words". Reuters, 28 July 2017 (accessed 7 February 2020). https://www.reuters.com/article/us-britain-baby-socialmedia-idUSKBN1AC23A "Charlie Gard: A case that changed everything?" BBC News, 29 July, 2017 (accessed 7 February 2020). https://www.bbc.com/news/health- 40644896
1	James Damore's 6 memo (Google's gender gap)	2017	Google engineer James Damore posted a document titled "Google's Ideological Echo Chamber" to the company's internal discussion forums. Notably, he claims that biological gender differences make women less effective programmers. The memo was leaked and sparked outrage and heated debates about gender equality, sexism in tech culture and science in general.	"Contentious Memo Strikes Nerve Inside Google and Out". The New York Times, 8 August 2017 (accessed 7 February 2020). https://www.nytimes.com/2017/08/08/technology/google-engineer-fired-gender-memo.html "The fallout over that Google diversity memo rages on". CNET, 12 August 2017 (accessed 7 February 2020). https://www.cnet.com/news/the- fallout-over-that-google-diversity-memo-rages-on/

#	<i>t</i> Online Firestorm	Year	Brief description	Selected news media articles
1	Pepsi (Kendall 7 Jenner ad)	2017	Pepsi posted a YouTube advertisement that showed the celebrity Kendal Jenner joining a demonstration and handing a can of Pepsi to a police officer as a peace offering. Pepsi removed the ad within one day, after social media users accused the company of borrowing imagery from recent protests against police brutality and of trivializing the Black Lives Matter movement.	"Pepsi Pulls Ad Accused of Trivializing Black Lives Matter". The New York Times, 5 April 2017 (accessed 7 February 2020). https://www.nytimes.com/2017/04/05/business/kendall-jenner-pepsi-ad.html "Pepsi's Kendall Jenner Ad Was So Awful It Did the Impossible: It United the Internet". Wired, 4 April 2017 (accessed 7 February 2020). https://www.wired.com/2017/04/pepsi-ad-internet-response/
1	8 #DeleteUber	2017	Uber was criticized for profiting from a New York taxi strike because it did not halt pickups from JFK Airport in solidarity with other taxi drivers against Trump's travel ban. 200,000 people reportedly deleted their accounts in six days. The hashtag had recurring comebacks since then, as several incidents of the company's social mis-responsibility have surfaced since then.	"#DeleteUber: how social media turned on Uber". The Guardian, 30 January 2017 (accessed 7 February 2020). https://www.theguardian.com/technology/2017/jan/30/deleteuber-how-social-media-turned-on- uber "What You Need to Know About #DeleteUber". The New York Times, 31 January 2017 (accessed 7 February 2020). https://www.nytimes.com/2017/01/31/business/delete-uber.html

							
Country	Name, Screen_name	Created	Number of tweets ⁷³	Number of followers	- Facebook page / Website		
US, main account	Sleeping Giants @slpng_giants	Nov 2016	67,095	301,626	https://www.facebook.com/slpngg iants		
Australia	Sleeping Giants OZ @slpng_giants_oz	Aug 2017	43,617	36,104	-		
Belgium	Sleeping Giants BE @slpng_giants_be	Jan 2017	1,063	770	https://www.facebook.com/Sleepi ngGiantsBelgium		
Brazil	Sleeping Giants BR @slpng_giants_br	Feb 2017	235	1,164	-		
Brazil ⁷⁴	Sleeping Giants Brazil @slpng_giants_pt	May 2020	1,569	377,479	https://www.facebook.com/sleepi nggiantsbrasil/		
Canada	Sleeping Giants CA @slpng_giants_ca	Feb 2017	12,567	9,378	-		
European Union	Sleeping Giants EU @slpng_giants_eu	Dec 2016	15,195	18,385	https://www.facebook.com/Sleepi ngGiantsEurope/		
France	Sleeping Giants FR @slpng_giants_fr	Jan 2017	26,637	18,001	https://www.facebook.com/sleepi nggiantsfrance https://sites.google.com/view/slpn g-giants-fr/accueil		
Germany	Sleeping Giants DE @slpng_giants_de	Jan 2017	3,625	1,981	https://www.facebook.com/Sleepi ngGiantsEurope/		
Italy	Sleeping Giants IT @slpng_giants_it	Feb 2017	16,846	846	-		
Netherlands	Sleeping Giants NL @slpng_giants_nl	Feb 2017	1,291	944	https://www.facebook.com/Sleepi ngGiantsEurope/		
New Zealand	Sleeping Giants NZ @slpng_giants_nz	Jan 2017	164	716	-		
Norway	Sleeping Giants NOR @slpng_giants_nor	Jan 2017	26	652	https://www.facebook.com/slpngg iants		
Spain	Sleeping Giants ES @slpng_giants_es	Mar 2017	55	301	-		
Switzerland	Sleeping Giants CH @slpng_giants_ch	Dec 2016	1,458	1,289	-		
UK	Sleeping Giants UK @slpng_giants_uk	Jan 2017	1,193	1,117	https://www.facebook.com/Sleepi ngGiantsEurope/		

Appendix 4A: Sleeping Giants' Country Accounts

⁷³ As of July 19, 2020.
⁷⁴ See more details on the two Brazilian accounts in "Coordination among international branches accounts and other movements" (Chapter 4).

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Appendix 4C: Topic Modeling

Because each tweet represents a very short and sparse text, discovering meaningful topics at the tweet level is complex and challenging, and it is recommended to aggregate tweets by time period or authors (Hong & Davison, 2010). In our analysis we aggregated tweets per half-day into one document and created a fitted model using LDA analysis. We used 5-fold cross-validation to compute log likelihood and estimated perplexity (Figure C1) for different numbers of topics (from 10 to 120). We have chosen K= 60 topics as the optimal number, yielding best performance.

Preprocessing of data included converting all words to lowercase, removing stopwords, punctuations, numbers and symbols but keeping Twitter data (user handles and hashtags) and tokenizing text into unigrams and bigrams (combinations of one and two words). To reduce sparsity we have also excluded terms that appeared less than 50 times and in less than 20 documents. We then applied fitted model topic distribution to individual tweets.



Figure 4C.1: LDA model fit with different number of topics.

Appendix 4D: 60 Topics from LDA

Topic	Label as in dashboard	Description of topic title / issues
1	Facebook adding Breitbart as a	In October 2019 Facebook launched Facebook News, which
	trusted news source	features stories from selected news organizations (i.e.,
		"trusted sources"), which are supposed to be trustworthy,
		informative and represent high quality journalism.
		Facebook's decision to add Breitbart as a trusted news
2	CoDodda and Codena, For estama	source caused an outrage on social media.
2	GoDaddy and Codero; Fox returns	dedicated to barassing tean school shooting survivor David
	Laura ingranam to an	Hogg @davidbogg111: Fox returns I aura Ingraham to air
		after her show being boycotted by advertisers due to her
		mocking David Hogg.
3	Breitbart's ownership	Breitbart's ownership [Rebekah and Robert Mercer] is
	r	corrupt and profits from racism, sexism, and xenophobia
4	Corey Lewandowski mocking of an	Corey Lewandowski mocking of an immigrant child with
	immigrant child with Down	Down syndrome who has been separated from her parents at
	syndrome	the border
5	Advertisers leave the Tucker	SG confirms that advertisers removed their ads from the
	Carlson Tonight	Tucker Carlson Tonight
6	Telegram hosting a list targeting	Telegram hosting a list targeting Jewish journalists, activists
	Jewish journalists, activists and	and other @twitter users.
	other @twitter users.	
7	Outrage with Twitter for hosting	Outrage with Twitter for hosting a video where Liberty
	Jerry Falwell Jr. video about	University President Jerry Falwell Jr. encouraged students to
0	Shooting Muslims	get conceated carry gun permits.
o	remove their add from Proithert	So s activists notify organizations on 1 white about their ads
	Temove then add from Breitbart	remove their ads from Breitbart
9	An open letter to the corporations	An open letter to the corporations sponsoring Tucker
,	sponsoring Tucker Carlson Tonight	Carlson Tonight appealing to companies that value diversity
	sponsoning ruener curson romgin	and support immigration
10	SG calls for the deplatforming of	8chan: SG calls for the deplatforming of 8chan after several
	8chan	shootings. SG calls out amazon for helping monetize 8Chan
		and services that host 8Chan
11	SG calling out Laura Ingraham who	In May 2019 Laura Ingraham defends white supremacist
	defended a white supremacist and	Paul Nehlen, calling him one of the "prominent voices
	neo-Nazi	censored on social media"
12	Calling out airlines that are	Calling out airlines that are profiting from Trump's
	profiting from ICE contracts	separation policy and ICE contracts by flying separated
12	Outre as with VeuTube for besting	families
15	Information Platforms streaming	Outrage with Four use for hosting intowars, canning for the
	NRA TV	services for NR A TV
14	SG points out Facebook's issues	SG points out Facebook issues with political ads "free
	with political ads, "free speech"	speech" argument, disinformation, unfettered racism, live-
	argument. disinformation	streamed murder, election interference from foreign
		countries
15	SG appeals to advertisers on Fox	SG appeals to advertisers on Fox News after Tucker Carlson
	News after Tucker Carlson's	says "women making more money than men leads to more
	comments	drug and alcohol abuse, higher incarceration rates"
16	Outrage with platforms for keeping	Outrage with Spotify, Facebook, YouTube and Twitter for
	Alex Jones and Infowars	keeping Alex Jones and Infowars on their platforms despite
		Jones violating their Terms of Service by harassing Sandy
1		Hook and Las Vegas shooting victims

Topic	Label as in dashboard	Description of topic title / issues
17	Anger against Trump's separation	Anger against Trump's separation policy (calling out Marco
	policy; Anger with social media	Rubio for child separation policy); Anger with social media
10	allowing anti-Semitism	allowing anti-Semitism; death threats on Breitbart
10	Rew 1 orker planning to nost Steve Bannon at the New Yorker Festival	New Torker planning to nost Sleve Bannon at the New Yorker Festival: Twitter users accusing The New Yorker of
	Damon at the New Torker restrvar	giving Steve Bannon a platform and profiting from it
19	Emails with white nationalist ideas	In November 2019 emails from Stephen Miller to Breitbart's
	from White House aide Stephen	writer Katie McHugh were leaked showing that Miller was
	Miller to Breitbart	actively promoting white nationalist ideas and conspiracy
20	SC and Sath Dagan about Giasl	theories.
20	being indifferent on white	Twitter's CFO lack Dorsey being indifferent on white
	supremacists on Twitter	supremacists on Twitter and other alt-right individuals
	I	despite violating their Terms of Service
21	Twitter user(s) ask advertisers to	Twitter user(s) ask advertisers to remove their ads from
	remove their ads from Breitbart and	Breitbart; Appeal to advertisers on Fox after controversial
	Fox	comments about immigrants make the country "dirtier", and
22	Outrage with platforms for hosting	Outrage with platforms (Spotify Facebook YouTube
	Alex Jones and Infowars	Twitter) for hosting Alex Jones and Infowars while Jones
		sued the parents of Noah Pozner, whose child was killed in
		Sandy Hook
23	Facebook blocking SG ad which	Facebook blocked SG's ad which was challenging FB's
	was challenging FB's "trusted"	"trusted" sources policy and revealing the story of leaked
	sources poncy	Allegedly the ad wasn't approved because it was considered
		a political ad
24	Appeal to advertisers on Fox	Appeal to advertisers on Fox after Tucker Carlson called the
		families of Parkland "demagogues" and Ingraham ridiculed
		David Hogg, a 17-year-old student survivor of the Stoneman
25	CC calling and contractors and	Douglas High School shooting
25	suppliers for immigration detention	detention facilities, calling them "concentration camp for
	facilities	children"
26	SG responds to the doxing of	SG responds to the doxing of Tucker Carlson on Twitter and
	Tucker Carlson on Twitter	comparing to when SG themselves were doxed by The Daily
	I . D. 0. IZ.	Caller (owned by Tucker Carlson)
27	Jeanine Pirro; Steve King	1) Fox host Jeanine Pirro says Rep Ilhan Omar's hijab means
		companies to reconsider their support for Steve King
28	Not labelled	The topic is too noisy, many endorsement of
		#grabyourwallet
29	SG responds to the doxing of	Same as topic 26: SG responds to the doxing of Tucker
	Tucker Carlson on Twitter (see	Carlson on Twitter and comparing to when SG themselves
20	#26)	were doxed by The Daily Caller (owned by Tucker Carlson)
30	being doxed and revealed identity	revealed identity (i.e., more followers, media attention):
	being doxed and revealed identity	Among top RTs: outrage with YouTube for hosting
		Infowars
31	SG appeals to advertisers on Laura	SG appeals to advertisers on Laura Ingraham show after she
	Ingraham show	ridiculed teen school shooting survivor David Hogg
32	Twitter user(s) ask advertisers to	Twitter user(s) ask advertisers to remove their ads from Braitbart: Endorsement of SC after being doubt and
	remove their aus noill bleitbalt	revealed by The Daily Caller
33	Twitter doesn't ban Alex Jones.	Twitter doesn't ban Alex Jones. unlike other major
	unlike other major platforms	platforms, despite Jones violating their Terms of Service
	~ -	(ToS); Support for #blockparty500 organized by Shannon
		Coulter (i.e., to encourage Twitter to drop Alex Jones users

Topic	Label as in dashboard	Description of topic title / issues
		were blocking Fortune 500 companies with a Twitter presence)
34	Platforms cutting ties with Alex Jones, except Twitter	Platforms cutting ties with Alex Jones, except Twitter; The argument about free speech vs Alex Jones
35	Not labelled	A lot of deleted tweets; missing context
36	Not labelled	Trolls issue; not enough context.
37	Tucker Carlson says white supremacy is a hoax despite El Paso killings	Tucker Carlson says white supremacy is a hoax while white supremacist kills 22 people in El Paso
38	Twitter for hosting Richard Spencer; Facebook for hosting Infowars	Twitter for hosting Richard Spencer (violating hate speech policy); Facebook for hosting Infowars
39	Stephen Miller connection to the Trump's family separation policy	Outrage with the news that Stephen Miller was reportedly the driving force behind Trump's family separation policy
40	Similar campaigns to SG (consumerism, boycotting)	Similar campaigns to SG (consumerism, boycotting, such as @StopFunding Hate, #GrabYourWallet, MediaMatters, etc.)
41	Walmart withdraws donations to Senator Hyde-Smith; Platforms streaming Gavin McInnes show	Walmart withdraws donations to Senator Hyde-Smith after her comments about "public hanging"; Outrage with platforms (@amazonfiretv @GooglePlay @RokuPlayer @AppleTV) for streaming Gavin McInnes show
42	Steve Bannon about Sleeping Giants; Fortune Magazine providing platform for Kirstjen Nielsen	1) A clip of Steve Bannon talking about Sleeping Giants and their effect on Breitbart. 2) SG accusing Fortune Magazine of providing platform for Kirstjen Nielsen by inviting her to the Fortune Most Powerful Women summit. 3) TheWebbyAwards for Activism (SG nomination)
43	Twitter user(s) ask advertisers to remove their ads from Breitbart	SG's activists notify organizations on Twitter about their ads [programmatically] running on Breitbart and ask them to remove their ads from Breitbart
44	An issue with white supremacist privilege in the US; Advertisers on the Tucker Carlson Tonight	An issue with white supremacist privilege in the US; SG activists ask advertisers to withdraw their TV ads from the Tucker Carlson show
45	Calling out Fox advertisers	SG appealing to companies advertising on Fox News and ask them to withdraw their ads
46	Outrage with Twitter for doxing Dr. Blasey Ford (Brett Kavanaugh scandal)	Dr. Blasey Ford alleged that then-U.S. Supreme Court nominee Brett Kavanaugh sexually assaulted her in 1982. She was doxed online with her address and phone were published on Twitter
47	Outrage toward Trump's administration family separation policy	Display of moral outrage toward Trump's administration family separation policy; Fox News (various hosts, including Laura Ingraham) calling separation centers "summer camps"
48	SG appeals to advertisers on Tucker Carlson Tonight	SG appeals to advertisers on Tucker Carlson Tonight after his comments that "immigrants make the country poorer, dirtier and more divided"
49	Apple is removing Alex Jones and Infowars from iTunes	Apple is removing Alex Jones and Infowars from iTunes, users praise and endorse SG for this
50	Twitter user(s) ask advertisers to remove their ads from Breitbart	SG's activists notify organizations on Twitter about their ads [programmatically] running on Breitbart and ask them to remove their ads from Breitbart
51	Steve Bannon interviewed at FT Future of News	Steve Bannon interviewed at FT Future of News; Twitter users accusing The Financial Times of giving Steve Bannon a platform and profiting from it
52	Endorsement by Don Cheadle; Walmart official reply; Apple TV streaming Gavin McInnes' show	1) SG endorsement by actor Don Cheadle, who was wearing SG cap on the Saturday Night Live show 2) Walmart official reply to Debra Messing about withdrawing donations to Senator Hyde-Smith 3) Apple TV streaming Proud Boys founder Gavin McInnes' show

Topic	Label as in dashboard	Description of topic title / issues
53	MSNBC interviewing Steve	MSNBC interviewing Steve Bannon; SG activists calling
	Bannon; Calling out ICE	out contractors dealing with ICE, separating children from
	contractors	parents
54	Calling out advertisers on Fox	SG activists calling out advertisers on Fox News after
	News	Pittsburgh synagogue shooting and anti-Semitism comments
55	Cloudflare for hosting 8Chan.	SG calls out Cloudflare and its CEO Matthew Prince
		(@Eastdakota) for hosting 8Chan. SG calls for the
		deplatforming of 8chan after several shootings
56	Platforms providing space for white	Disapproval of platforms providing space for white
	supremacists despite their ToS	supremacists and conspiracy theories despite their own
		Terms of Service (ToS), helping them to monetize and profit
		from content
57	Wayfair: Bed suppliers for children	Outrage with an American e-commerce Wayfair who
	migrant detainment facilities	supplied beds for children migrant detainment facilities
58	Twitter user(s) ask advertisers to	SG's activists notify organizations on Twitter about their ads
	remove their ads from Breitbart	[programmatically] running on Breitbart and ask them to
		remove their ads from Breitbart
59	Criticism of how Facebook	Criticism of how Facebook manages [political] ads and
	manages ads and moderates content	moderates content (i.e., trusted sources)
60	<pre>@ExposedGiants: anti SG posts;</pre>	@ExposedGiants: anti SG posts, sharing a post from The
	Platforms hosting streaming	Gateway Pundit saying that SG harass companies and block
	services for NRA TV	ad dollars from conservatives; Platforms hosting streaming
		services for NRA TV



Appendix 4E: Examples of Topics from the Dashboard

Top 6 most retweeted tweets in this topic:



Sample of representative tweets :



Peak Date +/- 7 days	Event	Representative tweets	RTs	REs
		id: 978689821425061888; date: 2018-03-27 Okay, @TeamYouTube. You've given Alex Jones two strikes for less than this. He's playing you. How will you deal with this now? https://t.co/a41fcQKeeB	2529	179
18 02 20	Jones	id: 979490065406615553; date: 2018-03-29 .@TeamYouTube, it has been 2 days since Alex Jones posted a video with @Emma4Change mashed up with a Hitler speech. This should have been a "third strike" according to your own Terms Of Service. You are complicit in the spread of this message if you don't enforce your own rules. https://t.co/naVXOk6hpS	1217	20
18-03-29	18-03-28 Ingraham's show was boycotted by advertisers after she ridiculed David Hogg, a 17-year-old student survivor of the Stoneman Douglas High School shooting	id: 980255888492544000; date: 2018-04-01 WOW. @Bayer has now dropped Laura Ingraham. It's almost as if using your tremendous platform as a TV host to bully teenage school shooting survivors is a bad idea. https://t.co/Zm4QY7RxPQ	943	96
		id: 980083399422500864; date: 2018-03-31 ALTERNATE HEADLINE: "Laura Ingraham's Bullying Of Teenage School Shooting Survivor Sets Dangerous Precedent" https://t.co/kgUnGqmN81	833	67
		 id: 1007377436521082880; date: 2018-06-14 This is a concentration camp for children. Who is the tent manufacturer willing to profit from this? Who is the bed manufacturer? Who is the company willing to handle the data? Who is the food supplier? Who are the other companies willing to detain children for cash? https://t.co/uMcho0Z7N6 	11213	657
18-06-14	<i>Trump' family separation policy</i> <i>Trump' family separation policy</i> <i>Trump' family separation policy</i> <i>Twitter: @GDMS</i> <i>"Ethics helpline": 800-433-8442</i>	id: 1007514486511579138; date: 2018-06-15 The second known contractor working to staff/supply these child concentration camps: General Dynamics Twitter: @GDMS "Ethics helpline": 800-433-8442	2147	83
		id: 1007514276142067712; date: 2018-06-15 This is the first known contractor to be coordinating for these child concentration camps: MVM Inc. "Building A Future Together"	2127	57
18-06-20	18-06-19: Corey Lewandowski made fun of a	id: 1009247332427128832; date: 2018-06-20 Yo @TMobile! Did you hear that Corey Lewandowski made fun of a 10 year old girl with Downs	3640	326

Peak Date +/- 7 days	Event	Representative tweets	RTs	REs
	10 year old girl with Downs Syndrome who has been separated	Syndrome who has been separated from her parents at the border on TV today? Kind of off-brand, no? https://t.co/Kz3wQHdbjU		
	from her parents at the border	id: 1010032982810214400; date: 2018-06-22 How many people do you know that can make fun of a 10 year old girl with Downs Syndrome at work and show up to the office the next day like nothing happened? Pathetic, @CNN & @ChrisCuomo. Just pathetic. https://t.co/GJzOcDq8Yg	1789	164
		id: 1009281181387378688; date: 2018-06-20 Womp, there it is! https://t.co/ygDq2PJPKf	1436	53
	18-07-17: SG was dored by The	 id: 1021882397737017347; date: 2018-07-24 One week ago today, we were doxxed by @DailyCaller's @peterjhasson. Since then, we've: Added 11,000 members to our community. Been notified by over 20 more advertisers that they've left Breitbart. Landed on the front page of the @nytimes business section. Big thanks, man! 	1878	117
18-07-21	Daily Calller, the identity of the SC founders was revealed. 18-07-20: New York Times published an article about the movement	id: 1021434184794083328; date: 2018-07-23 Uhhhhwow. This was supposed to be a two week project, so it is completely mind-blowing that it is on the front page of the @nytimes Business Section today. Massive thanks to everyone who has been putting in the work to make this happen. You should all be on here with us. https://t.co/C6kWjsGkJ5	1164	204
		id :1020482789676929025; date: 2018-07-21 After being doxxed, harassed, threatened, called and texted, today was much appreciated. Thanks for all of the love and support, everyone. And a big welcome to the thousands of new Giants who have just joined us. This is just the beginning. Let's do this, people. https://t.co/r8LTqGJjML	1119	248
	Facebook, Apple, YouTube and	id: 1024640058534637568; date: 2018-08-01 Good morning. Alex Jones just sued the parents of Noah Pozner, whose child was killed in Sandy Hook and who Jones has used his show to harass for years. A show that @facebook @YouTube @Twitter & amp; @Spotify are currently bending over backwards to keep on their platforms.	2325	84
18-08-06	Spotify removed Alex Jones accounts	id: 1026602810610200576; date: 2018-08-06 Pretty incredible that every major social platform was unanimous in deciding that Alex Jones has broken their Terms of Service today, but @Twitter is sticking with the notion that he hasn't broken theirs. What a statement. https://t.co/u1oc6ieJLE	2149	188
		id: 1026449630341541888; date: 2018-08-06 CONFIRMED: @facebook has dropped Alex Jones and Infowars permanently. https://t.co/MZywI24WVj	1800	236

Peak Date +/- 7 days	Event	Representative tweets	RTs	REs
18-09-03	The backlash due to the New Yorker decision to invite Steve Bannon to New Yorker Festival conference	 136633117816172545; date: 2018-09-03 inounce Steve Bannon as a speaker at your conference. Il some tickets. ceive massive outrage. Il more tickets. y you're going to challenge him. Il more tickets. low Bannon to ignore questions and spew bullshit for two hours. nse, repeat. 		137
		id: 1036623131887198208; date: 2018-09-03 UNBELIEVABLE!! NOW THE @NewYorker?? HOW MANY TIMES DO THESE PUBLICATIONS NEED TO DO THIS? STEVE BANNON IS HUMAN CLICKBAIT. He's not employed. He no longer holds any position of note. He's just a racist. Stop giving him air! https://t.co/KgShAjKXZx	1374	199
	Brett Kavanaugh sexual assault allegations by Dr Ford	 id: 1042193907533066240; date: 2018-09-18 This is absolutely disgusting. And @jack is complicit. The man who published her address & phone numbers on this platform was given a 12 hour suspension before being allowed to do it again dozens of times. There are real-life consequences to @TwitterSafety's shameful inaction. 	8768	295
18-09-19		id: 1042200107226062848; date: 2018-09-18 Kavanaugh's wife gets to bring cupcakes out to the press outside of their house. His accuser has to go into hiding. Great society we've got going here.	2127	184
		id: 1042213331493220353; date: 2018-09-19 HOW DO ANY ADVERTISERS SUPPORT THIS SHIT https://t.co/auTxk8iEAO	2354	549
	18-10-27: A mass shooting at Pittsburgh synagogue Tree of Life.	id: 1056950335908892672; date: 2018-10-29 TRASH TALKING THE RABBI OF THE SYNAGOGUE THAT WAS SHOT UP THIS WEEKEND!! HOW DO ANY ADVERTISERS STILL SUPPORT THIS?? https://t.co/Re7Ecdnzm4	2085	83
18-10-28	attack on the Jewish community in the United States.	id: 1056333259242651656; date: 2018-10-27 Congratulations to the sponsors of @FoxNews, who just bought themselves an extra dose of anti-Semitism on the day that 11 people were killed in a synagogue because the shooter hated Jews. Well done! https://t.co/S2hx1upg7J	1331	107
18-11-09	Early November: Twitter was slow to requests to delete tweets that contained Carlson's home address	id: 1060759565917024256; date: 2018-11-09 Not to keep harping on this, but we're on hour 18 of journalists pleading to leave Tucker Carlson alone and not one of them has mentioned that his website, The Daily Caller, leaves up flagged comments doxxing and threatening private citizens. Not one has told the full story. https://t.co/RvxpWCf987	4456	156

Peak Date +/- 7 days	Event	Representative tweets	RTs	REs
		id: 1060661066311450624; date: 2018-11-08 Why isn't every media outlet defending this private citizen like they are with Tucker Carlson? https://t.co/hst8AUJ7UF	4318	200
	18-11-06: US House of Permesentations	id: 1060025279941242880; date: 2018-11-07 Over 100 women have been elected to the House for the first time ever. It's about time.	3869	87
	US House of Representatives elections	id: 1060033971524759553; date: 2018-11-07 Steve King won. Proving that you can be an actual Nazi and still win an election in America. #cornhitler	2217	273
	Advertisers leaving Tucker Carlson show after he said that immigration makes the United States "poorer, dirtier and more divided"	id: 1073971926714834944; date: 2018-12-15 .@expedia, as a company that joined the lawsuit against the immigration ban, it seems like you'd take issue with Tucker Carlson's comments that immigrants make our country "poorer and dirtier". Will you continue to sponsor the messages on his show? https://t.co/TSHz6bYHB7	2213	183
18-12-18		id: 1075484439143170050; date: 2018-12-19 CONFIRMED: @SamsungUS will no longer advertise on Tucker Carlson Tonight. https://t.co/4pGKQF3qc8	1549	167
		id: 1074919195303862272; date: 2018-12-18 .@23andMe, as a company whose mission is celebrating our diversity, please reconsider you support of Tucker Carlson, whose xenophobic rhetoric is lauded by open white supremacists. https://t.co/CM0511TNSF	1008	74
	Tucker Carlson says women making more money than men leads to "more drug and alcohol abuse, higher incarceration rates, fewer families formed for the next generation"	id: 1080666507363917825; date: 2019-01-03 Hello, @JennyCraig. As a business that depends on and markets to women, is this an opinion that you agree with? https://t.co/2XAcaJCw6Z	4735	568
19-01-03		id: 1081013309997006848; date: 2019-01-04 .@redlobster, as a restaurant chain that depends on women, do you agree with this misogynistic rhetoric? As an advertiser on this program this evening, this is what you're supporting. https://t.co/Ia8PjiEAhb	2798	471
		id: 1082433502329663488; date: 2019-01-08 CONFIRMED: @redlobster will no longer advertise on Tucker Carlson Tonight. https://t.co/8AtiQdltx8	2333	596
10.02.10	id: 1107061410171740160; date: 2019-03-16 Cool that this video of @JerryFalwellJr talking about shooting Muslims is still all over @twitter and @TwitterSafety hasn't done shit. 19-03-15 https://t.co/lUEdDCITrA		5952	1642
19-03-18	New Zealand Christchurch mosque shootings	id: 1106974669054177282; date: 2019-03-16 But go ahead and keep telling us all the hand signal is just a joke. https://t.co/YcF5oWOXQW	3218	249
		id: 1107377576194920448; date: 2019-03-17 "A day later and zero response from @TwitterSafety.	1599	131

Peak Date +/- 7 days	Event Representative tweets			
		Guess it's totally fine to talk about shooting Muslims on this platform as long as you are high profile enough. https://t.co/JbstzVMEUE"		
19-06-25	Wayfair employees announced plans to walk out in protest of a BCFS	id: 1143554123700162560; date: 2019-06-25 BREAKING: Just got an anonymous tip that @Wayfair has, in fact, taken orders for beds to use in child detainment facilities. @wayfair, can you confirm or deny this?	4463	1893
	contract to sell beds to temporary migrant detention camps	id: 1143974112764678144; date: 2019-06-26 CONFIRMED: @BofA will no longer lend to private prisons and immigrant detention facilities. This is massive. https://t.co/5J82hdRmw6	1707	133
19-08-07	2019-08-03 El Paso shooting	id: 1158970287238656000; date: 2019-08-07 22 people in El Paso were killed when a white supremacist said he wanted to kill as many Mexicans as possible and Tucker Carlson says white supremacy is not a real problem in America. .@USAA, as an advertiser on this show, do you endorse the idea that white supremacy is a hoax? https://t.co/92Ywv5n0wW	6760	1474
		id: 1159591455859630080; date: 2019-08-08 CONFIRMED: @Nestle will no longer advertise on Tucker Carlson Tonight. https://t.co/TjZPj0Hg11	5778	1549
19-10-26	Facebook trusted sources	id: 1187736761717460992; date: 2019-10-25 Today, @facebook, who is still ensnared in the Cambridge Analytica scandal, added Breitbart, whose owner and former President were OWNERS of Cambridge Analytica, as a "trusted" news source. This scandal writes itself.	8503	366
		id: 1187844447318544384; date: 2019-10-25 Matt here. Last year, The Daily Caller published a story exposing me and the names of my family and friends. Breitbart jumped on it and my family was hit with 2 weeks of harassment, including this death threat to my son on their comment section. This is what @facebook deems news. https://t.co/zsT3W2pUWm	1510	48
		id: 1187729671212994561; date: 2019-10-25 Truly a dark day for @facebook when they feature Breitbart, which has published articles like "Hoist It High and Proud: The Confederate Flag Proclaims a Glorious Heritage" and a "Black Crime" tag for articles, as a "trusted news source." https://t.co/suzuQl0Tna	957	73
19-11-12	Stephen Miller's leaked emails to	id: 1194288451862061058; date: 2019-11-12 NEW: Ex-Breitbart employee (and former open white supremacist) Katie McHugh dumped a pile of emails from White House aide Stephen Miller to Breitbart and it is damning for both. This is a massive story and it should be covered as such. At any other time, Miller would be fired. https://t.co/EJH9MkjUE6	7881	315
	Бreudari	id: 1195514946081017858; date: 2019-11-16 This is a huge deal. This week, @facebook's "trusted" news source Breitbart is found to have been trading white supremacist emails with Stephen Miller.	4269	262

Peak Date +/- 7 days	Event	Representative tweets			
		Now, one of their fact-checkers, The Daily Caller, publishes a clip from a neo-Nazi. Why is Facebook normalizing hate? https://t.co/C9E2qYv2wj			
19-12-04	SG France (@slpng_giants_fr) activity				
19-12-27		id: 1210357764687458304; date: 2019-12-27 @johncardillo Until we can acknowledge the statistically epidemic levels of sex offenses by white men, it will continue to be the norm. https://t.co/4lRGFzDnn2		539	
	Black vs white crime rates	id: 1210358740064428032; date: 2019-12-27 @johncardillo Until we can acknowledge the statistically epidemic levels of mass shootings committed by white men, it will continue to be the norm. https://t.co/DRs4LFP4Pj		182	
		id: 1210359678435119104; date: 2019-12-27 @johncardillo Until we can acknowledge the statistically epidemic levels of child abuse committed by white people, it will continue to be the norm. https://t.co/1ZiQH74YbX		148	

Appendix 4G: Media Attention Over Time

Media Cloud Explorer: https://explorer.mediacloud.org/

Search terms: "sleeping giants" AND "twitter" Media sources:

- U.S. Top Online News 2017
- U.S. Top Digital Native Sources
- U.S. Top Newspapers 2018
- U.S. Top Sources 2018
- US Center Left 2019
- US Center Right 2019
- US Center 2019
- US Left 2019
- US Right 2019



Figure 4G.1: *Media attention over time*

Appendix 4H: 50 Representative Tweets from Celebrities that Endorse Sleeping Giants

Tweet	Tweet type ⁷⁵	Celebrity name	Occupation	Number of followers
tweet_id: 1142802869608992768 Heads up @AmerMedicalAssn and @Headspace: your ads are on 'alt-right' Breitbart. If that's an oversight, check out the pinned Tweet at @slpng_giants for a how-to on blocking a site from your ad buy. https://t.co/ikuO56TAOR	rt			
weet_id: 1071568710916280320 @cvlinens 'll bet you don't know your web advertising sometimes lands on the divisive website Breitbart. Easily fixed by adding the site to your programmatic advertising block list. Will you please let us know if you make this sound 'brand safety" decision? @slpng_giants https://t.co/oScESiAXfx				2,830,734
tweet_id: 872243979953328128 Breibart's ad revenues are way down, in large part thanks to the folks at @slpng_giants. Let's keep the pressure up. https://t.co/kPj6qlTe4j	tw			
tweet_id: 898678093035970560 Bannon is headed back to MordoI mean Breitbartto regain his strength. Let's make sure advertisers stay away. Check out @slpng_giants	tw			
tweet_id: 1107065469146587136 Give @slpng_giants a follow. You won't be sorry. They are fearless and persistent. https://t.co/cGelmMWiXg	qt			
tweet_id: 1037853455979831298 If you're happy that Alex Jones and Infowars are finally facing consequences, you should start by thanking & following @slpng_giants for showing how it's done. (plus, they're awesome.) https://t.co/oBwdhvCdkj	rt	Kathy	comedian and	2,056,686
tweet_id: 1060442589390753792 Can confirm something. @slpng_giants you will prevail. You are on the right side of history and everyone qt qt				
tweet_id: 1019315530065309696 I am @slpng_giants https://t.co/WAw2BLLfa8	qt			

 $[\]frac{1}{75}$ tw = tweet, rt = retweet, qt= quoted tweet; re = reply

Tweet	Tweet type ⁷⁵	Celebrity name	Occupation	Number of followers
tweet_id: 1019315241811759104 It is time for a big advertiser to stand up and back @slpng_giants and the value it brings. Who will it be? @KelloggsUS @dyson @3M @Chase There are nearly 4,000 advertisers who have been helped.	rt			
tweet_id: 855085413026873344 .@slpng_giants joined me on @YahooNews to explain how they targeted O'Reilly's show & the impact they may have had: https://t.co/M5uAfY2zeL https://t.co/5EQ9C8Xv0T	tw	Katie Couric	television and online journalist, presenter, author	1,743,927
tweet_id: 1020304147910832129 .@slpng_giants has led an incredibly effective campaign against online hate and bigotry Its previously anonymous founders speak publicly for the first time in an interview with the NYT https://t.co/sr2iVx0k9v	rt	Chris Sacca	venture investor, company advisor,	1 711 550
tweet_id: 1027957081951809537 The effort by @slpng_giants to alert companies that they're running ads on right-wing hate sites is one most impactful citizen activism campaigns since 2016. Check out Thursday's @PodSaveAmerica to learn more. https://t.co/Kg9fcI39Vi	rt	Chins Sacca	entrepreneur, and lawyer	1,711,550
tweet_id: 1151183121305493505 .@slpng_giants and @StopFundingHate are absolute heroes. If you want to tackle the return of racism and homophobia, I can't recommend following them enough. https://t.co/m8WmLzRVib	rt	Sophia Bush	actress, activist, director, and producer	1,334,145
tweet_id: 1036809393998725120 I'm loving @karaswisher's Recode Decode interview with @slpng_giants founder Matt Rivitz, and how the origin of the project reminds me of a Thomas Paine-style anonymous pamphleteering effort. Would we have taken SleepingGiants seriously if we had known it was one random dude?	rt		columnist.	
tweet_id: 1036854445663956994 I highly recommend this @karaswisher interview with @slpng_giants' Matt Rivitz. Unique insights into how a movement grows on social media. (And the specific terror of a doxxing in process.) https://t.co/G86PtZrXNg	rt	Kara Swisher	technology business journalist and co-founder of	1,246,878
tweet_id: 1037041214699200512 What makes the @slpng_giants effort so awesome = @MattRivitz was inspired to stand this up simply as concerned citizen, with no big political or financial backing. Just trying to do the right thing. Great interview w/@karaswisher on @Recode https://t.co/OdVivo71TF	rt		Recode	
tweet_id: 997662912238923776 @slpng_giants Y'all do great work 🙏	re	Talih Kwali	rapper, musician,	1 000 203
tweet_id: 1082336162310750213 I'm already a supporter of @slpng_giants	qt		activist	1,099,295

Tweet	Tweet type ⁷⁵	Celebrity name	Occupation	Number of followers
tweet_id: 1027943369790578688 The effort by @slpng_giants to alert companies that they're running ads on right-wing hate sites is one most impactful citizen activism campaigns since 2016. Check out Thursday's @PodSaveAmerica to learn more. https://t.co/Kg9fcI39Vi	rt	Jon Favreau	actor, director, producer, and screenwriter.	1,059,200
tweet_id: 1009028230395912194 I invite you to follow the work of @shannoncoulter and @slpng_giants - they are publicly identifying companies who are financially benefiting from this mess. Your vote, your voice and your dollar are the best forms of resistance. #EndFamilySeparation	rt	Shoup King	writer, civil rights	1 025 245
tweet_id: 1026464545836081154 To put this in perspective, Apple removing Alex Jones from iTunes is the boldest crackdown by a tech company to date against conspiratorial/deceptive content. It's so important. You all, with your voices, made room for Apple to do that, especially @slpng_giants.	rt		activist	1,033,243
tweet_id: 1019355513065074688 If you don't know who @slpng_giants are, they been working for all@of us, against hate and towards unity and justice. Now would be a good time to thank them. https://t.co/CKBykvsC4B	rt	Andy	actor, voice actor,	
tweet_id: 1030509298147905536 @RedWingShoes @ Hi: Did you know your ads show up on hate-filled Breitbart? Love your shoes but don't want to fund divisiveness. @slpng_giants can help you remove them from your ad buy. Thanks. https://t.co/6CeN1KUFeg	rt	Richter	and late night talk show announcer	1,009,952
tweet_id: 1146588353506283526 More proof of the power of consumer engagement with advertisers as a tactic for pushing back against hateful media - and a massive testament to the achievements of @slpng_giants #StartSpreadingLove https://t.co/CdPQyvpabe	rt			
tweet_id: 1019346081073725440 @slpng_giants I appreciate you & the whole team and your work, and I'm sorry that you've been targeted, but hope you see it as evidence of your effectiveness!	re	Anil Dash	blogger, entrepreneur, and technologist	588,988
tweet_id: 1037821960246489091 If you're happy that Alex Jones and Infowars are finally facing consequences, you should start by thanking & following @slpng_giants for showing how it's done. (plus, they're awesome.) https://t.co/oBwdhvCdkj	rt			
tweet_id: 1066865489568100352 "I am a free speech warrior who will sue you for defamation if your tweets are mean" In other news; how great for Rowan Dean to provide @slpng_giants_oz with such a huge platform. I've just	rt	Wil Anderson	comedian, writer, presenter, and podcaster.	502,827

Tweet	Tweet type ⁷⁵	Celebrity name	Occupation	Number of followers
followed the Giants and you should, too. 😂 #auspol https://t.co/mnntiSRjXk				
tweet_id: 1114382571335557120	qt	Dahara		
tweet_id: 1016798422664282113 @slpng_giants This would not have happened without vocal objection to ICE. Keep pushing. Keep up the good work.	rt Debta Messing	actress	499,522	
tweet_id: 1027357531213971456 Excited to run my conversation with the founder of @slpng_giants on tomorrow's @PodSaveAmerica. Follow them on Twitter and support their incredible work.	rt	Dan Pfeiffer	activist, podcaster, former Senior Advisor to U.S. President Barack Obama for Strategy and Communications	486,327
tweet_id: 1019381218494726145 Matt and the @slpng_giants team have done unbelievable, heroic work letting advertisers know that they're giving money to creeps peddling hate. Of course the assholes at the Daily Caller doxxed him because they're Breitbart-lite. We support you, Matt. Keep fighting.	qt			
tweet_id: 1027919809034371074 Proud to stand with @slpng_giants to keep the internet safe from hate speech and incitement. We appreciate the shoutout from @PodSaveAmerica @TVietor08 and hope others learn that tech platforms should do the right thing.	rt	Tommy Vietor	363,722	
tweet_id: 1027942344555880449 The effort by @slpng_giants to alert companies that they're running ads on right-wing hate sites is one most impactful citizen activism campaigns since 2016. Check out Thursday's @PodSaveAmerica to learn more.	qt			
tweet_id: 1071592503328075782 @slpng_giants Bless you @slpng_giants 🛇	re	Amy Siskind	activist and writer	304,061
tweet_id: 1020293514763079680 @slpng_giants .@slpng_giants went public after being doxxed by Daily Caller. I'm hoping they continue their work because it's so important	re	Judd Legum	journalist, lawyer,	284,735
tweet_id: 1020293165071421441 .@slpng_giants has led an incredibly effective campaign against online hate and bigotry. Its previously tw		pontical stance		

Tweet	Tweet type ⁷⁵	Celebrity name	Occupation	Number of followers
anonymous founders speak publicly for the first time in an interview with the NYT https://t.co/sr2iVx0k9v				
tweet_id: 852925344072048640 .@slpng_giants making waves at Amazon, where employees are pressuring Bezos to stop letting ads appear on Breitbart https://t.co/nKndiBG1fh https://t.co/bp48OhUBXc	tw			
tweet_id: 1026806127395332097 Dang! @slpng_giants did it again. Apple is removing Alex Jones and Infowars from iTunes. And again, I say: if anyone ever thought that public shaming of giant corporations on social media was a waste of time, think again. It works.	rt	Christopher Meloni	actor	284,347
tweet_id: 1133421628858220549 @nandoodles @hnnhlvy @slpng_giants @hiretechladies You're welcome, Nandini! Thank you for fighting the good fight. We are in this together, for the long haul.	re	Adam Rifkin	film director, producer, actor, and screenwriter	213,393
tweet_id: 1025191396116967424 Woohoo!! Stitcher just decided to remove Alex Jones completely from their platform. B Thank you @Stitcher and thanks too @slpng_giants for keeping the pressure on with this. https://t.co/OrJyYu86Tu	rt	Graham Linehan	writer, film director	662,040
tweet_id: 1103439057584115712 @slpng_giants Joined! 🙀 🛱	re		D	
tweet_id: 1200136481282707461 Hi @AJEnglish, I'm sure you won't have known, but your ads are appearing on and therefore you're helping to fund the racist, alt-right hate site Breitbart. It's very easy to blacklist them from your ad preferences, please look into this ASAP! \swarrow @SFFakeNews @slpng_giants #SFFN https://t.co/YXsEsDzsRG	tw	Rachel Riley	presenter and mathematician	601,586
tweet_id: 1026401784032583681 Great work by @slpng_giants to hold tech companies accountable for the content they are allowing on their platforms. Please follow and support their work. https://t.co/8dqVT9oqPd	rt	Martina Navratilova	former professional tennis player and coach	241,366
tweet_id: 1037548092864643072 So proud of my friend Matt Rivitz, who has recently come out as the secret founder of @slpng_giants, an organization that convinces companies not to advertise on Breitbart, and is highly effective. https://t.co/VhPgGIGXd5	rt	William Gibson	writer and essayist	239,977
tweet_id: 1012764127511699457 if you aren't following @slpng_giants, why are you even here https://t.co/2Mq7awuvnn	rt	Bill Prady	television writer and producer	206,811
tweet_id: 1115369346086215680 Today I wore a @slpng_giants T shirt on national TV. One person wrote me, saying he loves DT, and will	rt	Jon Cryer		188,325

Tweet	Tweet type ⁷⁵	Celebrity name	Occupation	Number of followers
never watch anything I'm in again. I asked, What has DT to do with telling companies their ads are next to racist content? He didn't explain. https://t.co/RMoTACKzB7				
 tweet_id: 1053666740243070976 Some good news amid the trashfire. Takeaways: 1. Attack the income streams & payment processors. Yes. Good. (Are you hooked up with @slpng_giants? It's an easy way to join the work, and they've been there since the beginning.) 2. To naysayers: Online activism works. https://t.co/rffEvULpUn 	rt		actor, comedian and television director	
tweet_id: 1113482218700197893 I really hope people realize how critical the work @slpng_giants is doing to deplatform extremists, Nazis, & white supremacists. Take it from a guy who regularly gets death threats for my faith & skin color—those who make bigotry unprofitable save lives. That's simply heroic.	tw	Qasim Rashid	author, human rights activist, politician, and attorney	183,570
tweet_id: 1028006753097666561 The effort by @slpng_giants to alert companies that they're running ads on right-wing hate sites is one most impactful citizen activism campaigns since 2016. Check out Thursday's @PodSaveAmerica to learn more. https://t.co/Kg9fcI39Vi	rt	Neko Case	musician, singer and songwriter	140,156
tweet_id: 912380438823317504 Amazed to see the impact @slpng_giants has had in a short amount of time. Every voice counts and can make a difference	tw	Ellen Pao	investor and activist	50,750

 \sim



Okay, we tried all day to be cool about the legendary @DonCheadle wearing our cap last night on @nbcsnl, but yeah, fuck that.



12:58 PM · Feb 18, 2019 · Twitter for iPhone

2.1K Retweets and comments 19.2K Likes

Figure 4H.1: Example of endorsement by celebrity

Appendix 4I: Cluster Analysis



Determining and visualizing the optimal number of cluster using fviz_nbclust() function:

```
Clusters of notifiers
```



Appendix 4J: Hashtag Use

- Tweets with **hashtags** in the dataset related to the SG main account: 207,427 (~6%)
 - Excluding retweets: 67,864 (~2%)
- Tweets with **hashtags** among tweets from @slpng_giants: 750 (2%)

15 most frequent used hashtags by the @slpng_giants account

hashtag	frequency
breitbart	21
grabyourwallet	15
marchforourlives	15
blockparty500	14
metoo	13
stopfundinghate	12
startspreadinglove	11
breaking	10
cambridgeanalytica	10
dearliambot	10
familiesbelongtogether	10
pride	9
lovenothate	7
auspol	6
bannon	6

15 most frequent used hashtags in the data set⁷⁶

hashtag	frequency
auspol	38373
adshame	13871
skynad	11197
sackalanjones	8815
racism	5057
sleepinggiants	4920
grabyourwallet	4295
lemurdelahonte	3914
bigotry	3896
hatespeech	3867
zemmour	3357
valeursactuelles	3203
metoo	3013
misogyny	2979
boycottfoxnewsadvertisers	2771

⁷⁶ Most hashtags are used by Australian branch: slpng_giants_oz

Appendix 4K: Different Tweet Types of Notifications

Notification, tweet type: TWEET

Tweet id: 1097343075519815682



Heads up, @Aeropostale - your ads are showing up on Breitbart, the self-described "platform for the alt-right" that praises Trump for his invented border national security crisis. See the pinned tweet from @slpng_giants for info on how you can block hate sites from your ad buys.





Notification, tweet type: REPLY

Tweet id: 833119399401967616



@Amazon @slpng_giants Amzn, WHY r u STILL advertising on hate-mongering Breitbart? Yr loyal Primers seek responsibility and humane values.



2:01 PM · Feb 19, 2017 · Twitter for iPad

60 Retweets 13 Quote Tweets 71 Likes

Notification, tweet type: QUOTE (i.e., quoted tweet)

Tweet id: 1108036753523240960

...



Lucy wonders y classically-trained actors can't 😥 @LucysOnlt

Any company that markets to women & supports this show should be ashamed. I will personally stop doing with all RT @slpng_giants: Hello, @JennyCraig.

As a business that depends on and markets to women, is this an opinion that you agree with?



8:54 AM · Jan 4, 2019 · Tweetbot for Mac

Appendix 4L: Themes of SG Activism

Theme	Description	Examples of tweets
advertisers	Notifying organizations about their ads on Breitbart. Appealing to advertisers on Fox News. Raising issue about programmatic ads and support through ad revenue. Framing [mostly] used: <i>motivational</i>	 1039183663232114692 .@subaru_usa, you obviously place a great deal of emphasis on diversity and inclusion, as one of the best places to work for LGBTQ Equality. Congrats. Why then, would you sponsor Tucker Carlson's show with your ad dollars when he openly questions diversity's strength? https://t.co/SNbhiEsjwR 1045894337169481729 Day by day, Laura Ingraham and Tucker Carlson are normalizing racism, attacking sexual assault victims and vilifying immigrants. This is not politics, it's bigotry. How can *not one* advertiser see what they're supporting? How can they continue to invest in hate & divisiveness? 1027538124954578945 .@BitdefenderBOX Assuming you are unaware your marketing funds are placing you on an alt right hate site and funding white supremacist hate like this? Please block from your ad settings like more than 3971 brands. Don't fund this rabble sowing division and hate @slpng_giants <u>https://t.co/3Nq5NgmSmT</u>
platforms	Online platforms violating their own Terms of Services by allowing hate speech, fake news, misinformation, doxing, etc. Platforms hosting and monetizing from dubious content. Framing [mostly] used: <i>diagnostic & prognostic</i>	1120470604216446976 The business model for social platforms is in direct conflict with enforcing their rules on hate, misogyny, harassment and even disinformation. The people who push that crap are paying them millions a year to ensure that it spreads far and wide. Why would they turn that away? 1186899016132349954 When your legacy includes the most rapid spreading of hate and disinformation in recorded history, live-streamed murders, foreign interference in elections, the subversion of democracy and the theft and misuse of millions of people's data, your answer should be better than this. https://t.co/koHbpbOpy1 1014178642199490560 @Sethrogen @jack It's why @Jack won't boot Nazis unless the news reports it. It's why @YouTube won't issue Alex Jones a 3rd strike despite breaking their Terms on harassment everyday. It's why @facebook won't remove Breitbart from their ad network despite clear violations of their Standards. 1023947133685297154 Holy shit. Really, @Spotify? Alex Jones has been responsible for harassing parents of Sandy Hook children, Vegas shooting victims and threatening to kill the Special Counsel. And you're now hosting his podcasts?? https://t.co/dAIYiNKdXP
conservatism	Issues related to conservative media, hosts,	1026465289645383681 Free speech protects you from your government.

Theme	Description	Examples of tweets
	alt-right individuals and organizations.	It doesn't give you license to harass parents of kids killed in Sandy Hook, smear Las Vegas shooting victims as "crisis actors", threaten government employees or spew hate on some else's platform.
	Framing [mostly] used: diagnostic	976463315739099136 This is the reason we started this effort. The fact is that Breitbart is the encapsulation of everything Bannon believes: If you turn citizens against each other with bigotry and hate, you will win readers, money and, yes, elections. Unfortunately, the rest of us lose. <u>https://t.co/OJW0ob0tWy</u>
		1098981906245332997 Step back for a second and take this in: A TV network, paid for with advertiser dollars and subscriber fees, is telling people to stock up on guns and prepare for "civil war" after someone was arrested for doing just that. This is so incredibly dangerous. <u>https://t.co/EORIRtsUIH</u>
		1195741106861826048 "Stephen [Miller] is not going anywhere," a senior White House official said on Tuesday"The president has his back." It should never cease to be shocking that a senior aide in the White House has been sharing openly white supremacist ideas and will not be fired. https://t.co/bHGc9X3uMR
separation policy	Contractors of ICE and companies that provide goods and services for detention facilities under the Trump's administration family separation policy.	1007514486511579138 "The second known contractor working to staff/supply these child concentration camps: General Dynamics Twitter: @GDMS "Ethics helpline": 800-433-8442" 1143554729907294208 @Wayfair It sounds like there are a lot of kids in the US detention camps already using @wayfair products and services. Would
	Framing [mostly] used: prognostic	1009187477007945728 To any company who is materially supporting the separation of children from their parents at the border, either in the media or on the ground, now is the time to back out publicly. The fact that you profited from the abuse of children will follow your brand forever.
mainstream media	Mainstream media interviewing or inviting controversial individuals.	973610458254008320 Last week, Steve Bannon told the French National Front to "let them call you racists and xenophobes. Wear it as a badge of honor." Next week, he's scheduled to take the stage for a @FinancialTimes forum. Tell @FinancialTimes they should not give racists a platform. https://t.co/cRbFerhWsF
	Framing [mostly] used: diagnostic & prognostic	1186704902279421952 If you're in the area, make your voice heard. Kristjen Nielsen oversaw the child separation policy, a crime against humanity.

Appendix 4L: Themes of SG Activism

Theme	Description	Examples of tweets
		There is no reason why @FortuneMagazine should be leading her redemption tour. <u>https://t.co/jusPYN4d2B</u>
		1036752702141804546 @NewYorker A well written and considered letter, but the fact remains that not only did you invite him, you announced him as the headliner. This was a cynical ploy to sell tickets. There are many, many people who could draw a crowd. You just chose the racist one with the bad ideas.
political donations	Organizations that support and make contribution / donation to certain conservative politicians. Framing [mostly] used: <i>motivational</i>	1064885005833445377 @DebraMessing @slpng_giants Hi Debra. Completely understand your concern. Sen. Hyde-Smith's recent comments clearly do not reflect the values of our company and associates. As a result, we are withdrawing our support and requesting a refund of all campaign donations.
		1161986790787620864 Did you know that @cvspharmacy is one of the largest donators to Trump's re-election campaign? And they're making it harder for disabled women to get affordable birth control. #CVSDeniesCare @slpng_giants https://t.co/Q75dcCADzq https://t.co/wHdQuhBq6N
		1056337344159195137 "@LandOLakesInc I have heard you support that horrid Steve King. If that's the case then sadly I can no longer purchase Land O Lakes for baking. I will have to go with the Irish Derrygold or when I can get it, from my local farmer. @slpng_giants were you aware of this? #BoycottLandOLakes"
endorsement	Endorsing others, promoting SG merchandise. Framing [mostly] used: <i>motivational</i>	1113550715090288640: SOME PERSONAL NEWS: Here's a clip of Steve Bannon in footage shot for the new @aliklay doc @TheBrinkFilm talking about Sleeping Giants and our massive effect on Breitbart. This is absolutely something we never would have expected. Big thanks to Steve-O for the info! https://t.co/APjxg2kC5d
		1029055584837017600 Check out what @shannoncoulter is doing with #BlockParty, everyone. Her point is simple: If @jack won't follow his own Terms of Service with Alex Jones, why should his users who DO abide by them be used as a revenue stream?
		1118183140969697280 We will be donating all proceeds from the Sleeping Giants Store today to rebuild these three historically Black churches that were destroyed by a racist. If you're interested, visit https://t.co/RmTU9WSEfa or, alternatively, donate directly. Thank you! https://t.co/Cjy20WhNOH


Appendix 4M: Root Mean Squares of 36 Politeness Features across Seven Different Themes

rms_value

Appendix 4N: Coded Tags

Note: This i	s a preview	of the coded to	gs. For the full	table with 43	codes please see	online ve	rsion of Append	<i>dix 4N (xlsx file)</i>
			<u> </u>					

	Original	Theme	n	Description of original tag	Examples of tweets
	code	tag			
				1) Notifying companies	990559621587795968 Sorry to see @PivotDoorCo ads on Breitbart, which defends Laura Ingraham's contemptible attacks on David Hogg says birth control makes women crazy calls the LGBT rainbow flag a hate flag. @slpng_giants can help you stop paying for this kind of garbage out of your ad budget! https://t.co/EXwjow0t7F
1	ads_breitbart	advertisers	672	about their ads on Breitbart 2) Tweets confirming ads withdrawal	1027538124954578945 .@BitdefenderBOX Assuming you are unaware your marketing funds are placing you on an alt right hate site and funding white supremacist hate like this? Please block from your ad settings like more than 3971 brands. Don't fund this rabble sowing division and hate @slpng_giants https://t.co/3Nq5NgmSmT 1049796573951979520 CONFIRMED: @REI will block Breitbart from their media buy! That's awesome. Thanks so much.
					Heading outside now!
2	ads_fox	advertisers	471	 Notifying advertiser on Fox News Confirming that advertisers drop Fox News Raising issue about advertising on Fox News 	 1008944709434163203 "You pulled your advertising after Ingraham made fun of a teenage school shooting survivor, then you went back. Now she's calling children kept in cages after being separated from their parents "summer camp". Your move, @AceHardware. Do you really still support this? https://t.co/TL8bFbOmcC" 1086092022123880448 Disappointing to hear that @USAA advertised on Tucker Carlson again tonight. As a company with such a commitment to diversity, it seems like they wouldn't support a show that has blamed women's advancement for higher incarceration rates and alcoholism. 1161787464022839297 At least five advertisers have left Tucker Carlson Tonight this week. Advertising is a privilege, not a right.
					If you are willing to say that white supremacy is a "hoax" just days after a white supremacist kills 22, that should be instantly disqualifying. https://t.co/nVroVOfiMQ 1040687298524966915

	Original	Theme	n	Description of original tag	Examples of tweets
		tag			"One week ago today, Tucker Carlson slammed the idea of diversity, echoing white supremacists. Since then, he's doubled down on that statement and slut-shamed a woman. Not one of his advertisers, who all promote Inclusion & amp; Diversity on their websites, have backed out. Not one."
					1039183663232114692 .@subaru_usa, you obviously place a great deal of emphasis on diversity and inclusion, as one of the best places to work for LGBTQ Equality. Congrats. Why then, would you sponsor Tucker Carlson's show with your ad dollars when he openly questions diversity's strength? https://t.co/SNbhiEsjwR
					980255888492544000: WOW. @Bayer has now dropped Laura Ingraham. It's almost as if using your tremendous platform as a TV host to bully teenage school shooting survivors is a bad idea. https://t.co/Zm4QY7RxPQ
					1045894337169481729 Day by day, Laura Ingraham and Tucker Carlson are normalizing racism, attacking sexual assault victims and vilifying immigrants. This is not politics, it's bigotry. How can *not one* advertiser see what they're supporting? How can they continue to invest in hate & divisiveness?
3	ads_issue	advertisers	53	 Issues with programmatic ads Awareness of supporting shows on Fox News with ads dollars 	1137019134531837952 ADVERTISERS: It's time. If @YouTube isn't putting your brand on ISIS and white supremacist recruitment videos or the channel of some idiot spouting homophobic remarks, they're defrauding you of millions of dollars. Just outright abuse of trust. https://t.co/a1mR2xoKQ4
					1080870189225463808 How are any advertisers still okay with their brand being seen next to racial slurs, segments that call immigrants "dirty" and monologues about women's employment causing alcoholism and jail time? They are literally paying for this to continue.
					1163861283705253888 Always wondered why, despite repeatedly breaking the @GoogleAds Terms of Service, @Google kept Breitbart on their ad network. Maybe it's because THE DIRECTOR OF GOOGLE CLOUD IS ALSO THE TECHNICAL CONTACT FOR BREITBART!!! https://t.co/SHgO0GCCFq

Appendix 4N: Coded Tags

	Original	Theme	n	Description of original tag	Examples of tweets
	code	tag			
4	alex_jones	conservati sm	30	Issues related to Alex Jones and his podcast/channel	 "1026465289645383681 Free speech protects you from your government. It doesn't give you license to harass parents of kids killed in Sandy Hook, smear Las Vegas shooting victims as "crisis actors", threaten government employees or spew hate on some else's platform. 1026660685034467329 On top of tormenting the families of shooting victims, Alex Jones/Infowars played a huge role in spreading the Seth Rich conspiracy theory, even after Rich's family issued public pleas to stop. As @slpng_giants put it: This isn't a right/left issue. It's a right/wrong issue. https://t.co/ffOlQsp8kJ 1001319685076402177 The jokes about Alex Jones being a nutcase need to stop. It gives him cover for what is an incredibly dangerous game he is playing. He not only aim his viewers at the families of shooting survivors, his completely fabricated conspiracies are now affecting our politics. https://t.co/o73MKQ0tZP"
5	amazon	platforms	41	Issues related to Amazon	 1101633031146692609 Man, it's one thing for @amazon to be the last large advertiser on Breitbart, but to turn a *profit* off of clearly false and potentially catastrophic conspiracy theories is another. Regardless of your political stripe, this should infuriate and terrify you. https://t.co/QkOmtzA5A1 1016183642736025602 Imagine if you found out the store where you buy everything from baby wipes to broccoli everyday was also selling and profiting from Nazi and KKK merchandise and when you asked them about it, they didn't say anything. That happened this weekend. That store is @Amazon. 1009826219859144704 LOL. Despite calls from 630 of your employees and tens of thousands of people, @amazon continues to financially support Breitbart with ad dollars, who regularly disparages Trans people. You don't get to cheer them on today, you hypocrites. https://t.co/Xy67VDgoLD

Appendix 5A: Examples of Celebrities Participating in #StopHateForProfit



Kim Kardashian Tweet id: <u>1305942213667557378</u> Jennifer Lawrence - Represent.Us 🤣 @JLawrenc... · Sep 15, 2020 ···· Facebook ignores hate & disinformation on their site. This is not an "operational mistake." It is a deliberate decision to put profits over people and democracy.

Tell Facebook to #StopHateForProfit. Stophateforprofit.org



Jennifer Lawrence Tweet id: 1305643150388551680

Appendix 5B: *#Stophatefoprofit* Centrality based on the Hashtag Co-occurrence

Partner	Degree	Degree.rank	Closeness	Betweenness	Eigenvector
@NHMC	14	8	0.000009	1479	0.0000
@LULAC	0	398	0.000006	0	0.0000
@freepress	28	4	0.000033	7789	0.2377
@CommonSense	8	35	0.000024	1255	0.0000
@ADL	9	7	0.000064	379	0.6224
@ColorOfChange	7	13	0.000010	943	0.0010
@mozilla	2	45	0.000199	0	0.1064
@slpng_giants	25	1	0.000025	1554	1.0000
@NAACP	5	68	0.000016	823	0.0001

Centrality of #StopHateForProfit hashtag in Partners' tweets

Centrality of #StopHateForProfit hashtag in followers' tweets

Partner	Degree	Degree.rank	Closeness	Betweenness	Eigenvector
@NHMC	312	43	0.0000000961	15312	0.0032
@LULAC	293	187	0.0000000358	35265	0.0239
@freepress	1089	265	0.00000000040	966688	0.0002
@CommonSense	700	156	0.0000000098	596752	0.0132
@ADL	2315	346	0.0000000010	1861393	0.0002
@ColorOfChange	2074	338	0.0000000011	2516187	0.0033
@mozilla	731	310	0.0000000030	720357	0.0002
@slpng_giants	3696	295	0.00000000004	6883460	0.0108
@NAACP	2685	497	0.00000000006	3741953	0.0037

Centrality of #StopHateForProfit hashtag in unique followers' tweets

Partner	Degree	Degree.rank	Closeness	Betweenness	Eigenvector
@NHMC	14	420	0.00000084	649	0.0000
@LULAC	53	195	0.00000046	453	0.0036
@freepress	156	495	0.000000002	50990	0.0001
@CommonSense	119	408	0.000000005	25297	0.0011
@ADL	953	320	0.000000000	164857	0.0001
@ColorOfChange	427	337	0.000000001	273841	0.0091
@mozilla	359	423	0.000000001	156030	0.0001
@slpng_giants	2364	215	0.000000000	2909438	0.0003
@NAACP	772	716	0.000000000	258422	0.0008

Short domain name	Full domain name		Short domain name	Full domain name
l fb.me	facebook.com	23	rol.st	rollingstone.com
2 m.youtube.com	youtube.com	24	salud.to	salud-america.org
3 youtu.be	youtube.com	25	propub.li	propublica.org
4 instagr.am	instagram.com	26	tlmdo.co	telemundo.com
5 lnkd.in	linkedin.com	27	snpy.tv	snappytv.com
6 tmblr.co	tumblr.com	28	s.hbr.org	hbr.org
7 kck.st	kickstarter.com	29	bloom.bg	bloomberg.com
8 4sq.com	foursquare.com	30	onforb.es	forbes.com
9 spoti.fi	spotify.com	31	comca.st	corporate.comcast.com
10 nyti.ms	nytimes.com	32	on.mash.to	mashable.com
11 gu.com	theguardian.com	33	interc.pt	theintercept.com
12 abcn.ws	abcnews.go.com	34	adafru.it	blog.adafruit.com
13 nbcnews.to	nbcnews.com	35	usat.ly	usatoday.com
14 wapo.st	washingtonpost.com	36	comsen.se	commonsensemedia.org
15 huff.to	huffpost.com	37	fxn.ws	foxnews.com
16 n.pr	npr.org	38	cnb.cx	cnbc.com
17 cbsn.ws	cbsnews.com	39	abc7.la	abc7.com
18 reut.rs	reuters.com	40	pewrsr.ch	pewresearch.org
19 lat.ms	latimes.com	41	politi.co	politico.com
20 apne.ws	apnews.com	42	thr.cm	hollywoodreporter.com
21 cnn.it	edition.cnn.com	43	uni.vi	univision.com
22 adweek.it	adweek.com	44	hill.cm	thehill.com

Appendix 5C: Replaced Short Domain Names

Deutereu		Partners' score ⁷⁷					Followers' score					Unique followers' score									
Partner		1st			3rd				1st			3rd				1st			3rd		
	Min.	Qu.	Median	Mean	Qu.	Max.	SD	Min.	Qu.	Median	Mean	Qu.	Max.	SD	Min.	Qu.	Median	Mean	Qu.	Max.	SD
@NHMC	-0.95	-0.44	-0.24	-0.29	-0.16	0.48	0.27	-0.57	-0.30	-0.25	-0.24	-0.19	0.13	0.10	-0.36	-0.25	-0.20	-0.17	-0.10	0.13	0.12
@LULAC	-1.00	-0.31	-0.12	-0.14	0.11	0.54	0.29	-0.78	-0.29	-0.25	-0.24	-0.20	0.37	0.10	-0.41	-0.27	-0.24	-0.22	-0.18	0.32	0.11
@freepress	-0.91	-0.66	-0.57	-0.44	-0.25	0.36	0.27	-0.81	-0.31	-0.26	-0.26	-0.21	0.42	0.11	-0.81	-0.31	-0.25	-0.25	-0.18	0.29	0.13
@CommonSense	-0.83	-0.04	-0.04	-0.04	-0.04	0.28	0.09	-0.54	-0.28	-0.23	-0.20	-0.15	0.47	0.11	-0.44	-0.25	-0.19	-0.17	-0.10	0.45	0.12
@ADL	-0.85	-0.57	-0.57	-0.34	-0.13	0.58	0.30	-0.84	-0.30	-0.25	-0.23	-0.20	0.81	0.14	-0.84	-0.29	-0.24	-0.20	-0.16	0.81	0.18
@ColorOfChange	-0.96	-0.88	-0.88	-0.60	-0.25	0.43	0.37	-0.78	-0.31	-0.26	-0.25	-0.21	0.47	0.10	-0.72	-0.30	-0.25	-0.24	-0.18	0.30	0.12
@mozilla	-0.87	-0.26	-0.20	-0.15	0.08	0.14	0.22	-0.78	-0.26	-0.19	-0.17	-0.09	0.60	0.13	-0.58	-0.23	-0.15	-0.13	-0.05	0.60	0.13
@slpng_giants	-0.88	-0.41	-0.26	-0.29	-0.13	0.20	0.24	-0.83	-0.29	-0.25	-0.24	-0.20	0.45	0.09	-0.83	-0.29	-0.24	-0.23	-0.19	0.45	0.09
@NAACP	-0.92	-0.76	-0.23	-0.31	0.05	0.61	0.37	-0.87	-0.30	-0.25	-0.24	-0.20	0.79	0.11	-0.87	-0.28	-0.23	-0.21	-0.16	0.79	0.12

Appendix 5D: The URL Score Distribution for Partners and Followers

⁷⁷ Based on the URL score distribution for partners and based on the weighted average score for followers and unique followers

		Partners			Followers		Unique followers			
Partner	Total tweets	Tweets with hashtag(s)	% of tweets with hashtag(s)	Total tweets	Tweets with hashtag(s)	% of tweets with hashtag(s)	Total tweets	Tweets with hashtag(s)	% of tweets with hashtag(s)	
@NHMC	1,890	731	38.68%	254,060	57,467	22.62%	40,187	7,438	18.51%	
@LULAC	903	680	75.30%	659,164	130,939	19.86%	81,546	16,394	20.10%	
@freepress	2,662	1,437	53.98%	2,858,883	530,767	18.57%	592,654	113,162	19.09%	
@CommonSense	1,887	1,395	73.93%	1,023,293	216,824	21.19%	225,797	52,482	23.24%	
@ADL	934	513	54.93%	11,869,587	1,827,311	15.39%	4,501,922	681,189	15.13%	
@ColorOfChange	2,052	1,175	57.26%	9,204,112	1,554,407	16.89%	1,667,776	278,246	16.68%	
@mozilla	649	491	75.65%	1,678,042	338,512	20.17%	848,012	182,438	21.51%	
@slpng_giants	9,737	1,164	11.95%	25,412,866	3,412,379	13.43%	14,759,096	1,905,957	12.91%	
@NAACP	1,574	1,148	72.94%	14,788,887	2,394,962	16.19%	4,201,843	702,339	16.72%	

Appendix 5E: Hashtags Use by Partners and their Followers





 $^{^{78}}$ Grouped by partner, the first top five intersections for each partner are shown