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How Twitter's affordances empower dissent and information dissemination: An exploratory study of the rogue and alt government agency Twitter accounts

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ABSTRACT

At least 102 “rogue” and “alt” government agency Twitter accounts—purported to be run by government officials—emerged in the immediate wake of the election of Donald Trump. These accounts offered a resistance-focused narrative about the administration. In this paper, we ask who the people are that ran these accounts, what their goals or purposes were during this time, and how they used Twitter to achieve their goals. To answer these questions, we conducted twelve interviews with some of the individuals behind the accounts and descriptively analyzed 43,569 tweets generated by these 102 accounts during the first 100 days of the Trump presidency. We discovered that not all accounts were not actually being run by agency employees, and that the account administrators had goals of creating a network of “resistance” by sharing scientific information, correcting misinformation, and contributing to the news cycle. They relied on the referentiality that Twitter affords through its features to expand beyond 140 characters to do this.

1. Introduction

President Donald J. Trump was inaugurated on January 20, 2017, and conflict with federal agencies began within just a few hours. The National Park Service (NPS) retweeted (now) infamous images, showing the relative sizes of President Trump's and President Obama's inauguration day crowds (Kircher, 2017). The Department of the Interior (the parent agency of NPS) was ordered to cease using Twitter until further notice. Shortly thereafter, the Environmental Protection Agency, the Department of Agriculture, the Department of Health and Human Services, the Department of Transportation, and the National Institutes of Health all received notices to suspend social media use or other public-facing communication (Lartey, 2017). For example, the Agricultural Research Service agency within the Department of Agriculture was directed in a memo to not put out “new releases, photos, fact sheets, news feeds, and social media content” (Lartey, 2017, para. 3).

In response to these “gag orders,” new Twitter accounts describing themselves as “rogue” or “alternative” outlets for government agencies began to spring up. Using handles such as @RogueNASA or @ALT_NSF, over 100 of these accounts arose within weeks (Davis, 2017; Gorman, 2017). There were often competing “alt” or “rogue” accounts purportedly related to the same agency (such as @altUSEPA, @AlternateEPA, @ActualEPAFacts, @RogueUSEPA, @TheAltEPA, and @ungaggedEPA). These rogue and alt Twitter accounts[1] gained followers rapidly (Davis, 2017; Gorman, 2017). Many of the accounts and their followers were pointedly and vocally opposed to Trump administration policies.

The profile pages and initial tweets of these rogue accounts

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[1] When discussing these accounts in general, we will refer to them as “rogue and alt Twitter accounts.”

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frequently mentioned resistance to the newly formed Trump administration as a driving motivation. For example, @ALTdhs said, "We are the #Resistance to the U.S. Department of Homeland Security. Not taxpayer subsidized, not affiliated with DHS, not going to quit.". The rogue Twitter accounts were careful to position themselves as not "official" accounts or taxpayer subsidized. For instance, @RogueNOAA stated, "Research on our climate, oceans, and marine resources should be subject to peer [not political] review. *Not an official NOAA account*".[2]

Binkowski (2017) has tried to identify which rogue and alt Twitter accounts are, in fact, run by off-duty federal employees. Though many account managers would not comment, she verified 35 accounts as being run by federal employees as of April 2018. Some accounts are managed by more than one person. The discussion of ownership is complicated by the fact that one of the most popular accounts, @AltNatParkSer (now @NotAltWorld), was started in 2015—well before Trump's inauguration—by an British man under a different Twitter handle (see AltHomelandSecurity, 2017).

The ultimate political significance of the rogue and alt Twitter accounts is hard to quantify at this time, yet Leetaru (2017) argues that they demonstrate some interesting puzzles for the future of social media. He notes that "the accounts have positioned themselves in their tweets as alternative authoritative resources for those interested in their respective agencies' research, replacing the official accounts" (para. 3). This raises questions about "the challenge of government messaging and the interaction of government with its citizenry" (para. 13), as well as the trustworthiness of official sites vis-à-vis unofficial sites.

These rogue and alt accounts raise a number of questions about the nature of such accounts purporting to represent a resistance network inside the government. In this work, we address three extant research questions about the alt and rogue Twitter accounts:

Question 1: Who are the people that run these accounts?
Question 2: What are the goals or purposes of these accounts according to the people that run them?
Question 3: How do they use Twitter to achieve these goals?

These questions are important, as they speak to how social media has become a battleground for political fights that might otherwise happen inside government agencies. Answering these questions also sheds light on how the features and affordances of social media platforms help those engaged in political battles achieve their goals. The paper proceeds with a literature review, followed by the methods section. In the results section, we discuss the descriptive analysis of the tweet corpus followed by the qualitative analysis. We conclude with a discussion and conclusion.

2. Literature review

In this literature review, we discuss how Twitter users disseminate information, particularly political information, Twitter audiences, and the affordances and features of Twitter.

2.1. Disseminating (political) information via Twitter[3]

There were approximately 69 million active monthly U.S. citizens using Twitter in the first quarter of 2017 (the time period in which this study took place) (Statista, 2018). Scholars suggest that disseminating information is one of the primary reasons for using Twitter (Bode & Dalrymple, 2016; Cox, 2017; Lotan et al., 2011; Penney, 2014; Yang & Counts, 2010). Croeser and Highfield (2014) noted that, among social media, "Twitter in particular has been widely adopted for *information diffusion*…as a means of communicating information from official sources, such as government agencies and emergency services, and alternative voices alike" (para. 3, emphasis added). Penney added that the use of social media for political purposes "has become a fixture of the contemporary era" (p. 71).

Twitter has also played a significant role in several protest movements. From Occupy Oakland (Croeser & Highfield, 2014) to Black Lives Matter (Cox, 2017), to the protests against the regimes in Tunisia and Egypt (Lotan et al., 2011; Tufecki & Wilson, 2012) and Turkey (Ogan & Varol, 2017), Twitter has been used to disseminate information and coordinate action among protestors. Tufecki and Wilson (2012) reported that social media use was correlated with protest participation on the first day of protests in Egypt. Ogan and Varol (2017) noted that information sharing was the most common content of tweets and retweets during the Gezi protests in Turkey, while Valenzuela (2013) explained that social media influences collective action by "providing mobilizing information and news not available in other media, facilitating the coordination of demonstrations, allowing users to join political causes, and creating opportunities to exchange opinions with other people" (p. 921).

Scholars note that social media allows information to be shared without the mass media serving as a mediator (or as a proxy for reliability and accuracy) because information is shared from individual to individual (Lotan et al., 2011; Weeks, Lane, Kim, Lee, & Kwak, 2017). Half of social media users reported sharing or posting news stories (Mitchell, Gottfried, Barthel, & Shearer, 2016). In 2017, Pew Research reported that 74% of Twitter users reported getting news information from the site (Shearer & Gottfried, 2017). Cox (2017) noted that information shared via social media may or may not be credible and should be treated cautiously; it appears that social media users do approach information shared via these media with some trepidation (Johnson & Kaye, 2014).

Some scholars have focused on political information sharing via social media. Shin, Jian, Driscoll, and Bar (2016) found that Twitter helped spread false information but "seldom functioned as a self-correcting marketplace of ideas" (p. 1214, c.f. Johnson & Kaye, 2014). Weeks et al. (2017) reported that exposure to oppositional ideas drove partisans to seek out like-minded content. Garimella, Morales, Gionis, and Mathioudkis (2018) found that there is a high degree to which Twitter functions as a political echo-chamber. The role of the elite and opinion leaders may be particularly strong on Twitter, where those with large followings get liked and retweeted more (Bode & Dalrymple, 2016).

People share political information via social media for several reasons. Some motivations include anger and anxiety (Hasell & Weeks, 2016; Valentino, Hutchings, Banks, & Davis, 2008 but see Oh & Syn, 2015, who reported more positive emotions as the basis for sharing information generally via social media). Other individuals share political information to shape public opinion or just to inform others (Penney, 2014). Yet limited "political learning" has been found through social media (Bode, 2016).

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[2] The emphasis on the non-official nature of these venues was likely driven by the 1939 Hatch Act. The act attempts to prevent political corruption by limiting the communication activities of government employees (primarily in the executive branch). The law's purpose is to "ensure that federal programs are administered in a nonpartisan fashion, to protect federal employees from political coercion in the workplace, and to ensure that federal employees are advanced based on merit and not based on political affiliation" (Office of Special Counsel [OCS], 2018a, para. 1). According to the Hatch Act, federal government employees cannot engage in "political activity" (defined as "activity directed at the success or failure of a political party, candidate in a partisan race, or partisan political group") while on duty or in the workplace, on federal grounds, or wearing a government uniform. So, for example, a forest ranger cannot urge individuals to vote for a particular candidate while he or she is in uniform, is on federal land, or is on the clock; however, doing so as a private citizen would be acceptable. Last updated in 2012, the Hatch Act has been interpreted by the OSC to apply to social media, and the office has supplied updated guidance as of February 2018. In particular, "employees may not post, like, share, or retweet a message or comment" that constitutes political activity (OCS, 2018b, p. 2) while on duty. Employees also may not use an alias for political activity while on duty, on federal grounds, or in uniform. Violation of the Hatch Act is punishable by dismissal (Zakaria, 2012).

[3] Here, we are focused on the dissemination of political information via Twitter. We bracket, for the purpose of this study, the question of whether or how Twitter use mobilizes people to engage in political activity.

Taken together, the evidence to date suggests that people often use social media, Twitter in particular, to share information with others. Twitter has been used specifically in connection with protests both large and small, local and global. Relatedly, people use Twitter to share political information with various motivations and goals. These strands of research have been explored quantitatively (Bode, 2016; Bode & Dalrymple, 2016; Hasell & Weeks, 2016; Johnson & Kaye, 2014; Lotan et al., 2011; Mairerder & Schlogl, 2014; Oh & Syn, 2015; Shin et al., 2016; Tufecki & Wilson, 2012; Valenzuela, 2013; Weeks et al., 2017; Yang & Counts, 2010), qualitatively (Cox, 2017; Marino, 2015; White, Castleden, & Gruzd, 2015; Croeser & Highfield, 2014; Penney, 2014; Marwick & boyd, 2011), and, rarely, through mixed methods (Gleason, 2013; Litt & Hargitai, 2016; Ogan & Varol, 2017).

2.2. Twitter audiences

Much has been written about the actual or imagined audiences for which people compose tweets. As Marwick and boyd (2011) noted, "Given the various ways people can consume and spread tweets, it is virtually impossible for Twitter users to account for their potential audience, let alone actual readers" (p. 117; see also Litt & Hargitai, 2016). Rathnayake and Suthers (2018) comprehensively summarized the various ways people have conceptualized this audience, as sphere, publics, or communities. Of particular relevance here are the concepts of "digital togetherness" (Marino, 2015) and "ad hoc publics" (Bruns & Burgess, 2015; Mairerder & Schlogl, 2014).

Issue or ad hoc publics on Twitter generally form around particular hashtags, which identify tweets pertaining to a certain subject, topic, or issue. Examples include the #aufschrei (outrage) hashtag studied by Mairerder and Schlogl (2014), which was a Twitter discussion of sexual harassment in Germany. They described how an ad hoc public of German Twitter users emerged and converged around this hashtag, noting that the connections between users:

> structure the users' access to information, their ability to publish information, and the information flow within the network in general. Moreover, as messages published within online social network systems often link to content outside the system, the follower networks also shape the probability that this content will be read, watched, and linked to other digital objects…groups of users with similar networks may represent 'horizontal' publics coalescing around topics of interest (p. 691).

Here, Mairerder and Schlogl (2014) linked the interactions between Twitter users with the flow of information. Similarly, Bruns and Burgess (2015) explained that tweets in the ad hoc publics they studied were "characterised by a high proportion both of tweets containing URLs and of retweets, pointing to a deliberate use of hashtagged tweets by users as a means of sharing emerging information" (p. 18). Issue publics, then, are a group of users self-organizing around particular hashtags, sharing information pertaining to the issue identified by those hashtags. Often, these issue publics are somewhat transitory, as hashtags surge and fade in popularity, replaced by the next frequently-used word or phrase. In Mairerder and Schlogl's (2014) study, for example, the issue public around the hashtag #aufschrei lasted around 24 h (then spread into popular and mass media).

However, sometimes issue publics stay more connected and rally around hashtags in an ongoing fashion; to address these longer-term groups, digital togetherness is a useful concept. According to Marino (2015), digital togetherness is "a specific sense of belonging and identity that is based on sharing personal and private experiences" (p. 6). She wrote specifically about Italian immigrants utilizing discussion boards to form transnational friendships and networks, but the concept is relevant to groups that coalesce around other social media, such as Twitter. For Marino, identity formation and public visibility are key components of forming digital togetherness, which also includes reciprocity (mutual support and collaboration), exchange of information and ideas, and solidarity (p. 5).

2.3. Twitter features and affordances

The concept of affordances is traditionally traced back to the ecological psychologist Gibson (1979), who wrote, "the affordances of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill" (p. 127, emphases in original). Thus, affordances can be seen as "action possibilities," allowing for or inviting potential actions (see Withagen, de Poel, Araujo, & Pepping, 2012). Gibson saw affordances as relational, a way to describe how and why an animal interacts with its environment in the way that it does. This concept has been adapted for many fields, including human computer interaction, design, and communication/technology studies. In the context of technology, Evans, Pearce, Vitak, and Treem (2017) defined an affordance as a "multi-faceted relational structure between an object/technology and the user that enables or constrains potential behavioral outcomes in a particular context" (p. 36).

Importantly, Faraj and Azad (2012) noted that "affordances are both functional ([the] artifact has a material presence) in the sense of enabling and constraining action with the technology, and relational (differs from one person to another and based on the context of use)" (p. 253). In other words, an affordance is about the relationship between an object and an individual and what actions are invited (or afforded). A classic example here is stairs; while stairs generally afford climbing, not all stairs are climbable for all people. Some stairs may be too steep or have risers that are too tall for one person but not another. boyd (2010) usefully clarified that "affordances do not dictate participants' behavior, but they do configure the environment in a way that shapes participants' engagement" (p. 39).

Twitter's main affordances as currently described in the literature include persistence, visibility, spreadability, and searchability (boyd, 2014). In a study of Weibo (a Chinese microblogging platform), Zheng and Yu (2016) reported affordances of visibility, editability, persistence, transmitability, connectivity, interactivity, and multimediality (p. 308). Over time, affordances may become used in a standard way (much like there is a standard way we use stairs, though, in theory at least, they could be climbed in a number of ways). Draucker and Collister (2015) explained, "these standard practices arise out of a soup of possibilities afforded by the medium" (p. 9). Two things are worth noting here. First, this conceptualization acknowledges that affordances invite but do not compel particular activities. Second, this approach suggests that ways of interpreting affordances may become somewhat standardized, but that does not mean they are permanently fixed.

A final useful perspective on affordances comes from Bucher and Helmond (2017): affordances are "what material artifacts such as media technologies allow people to *do*" (p. 235, emphasis added). Similarly, Schrock (2015) said that affordances are "practices that technologies afford" (p. 1233), as opposed to bundles of *features*. Features of Twitter include the ability to retweet others' posts (RT), reply to other users (using the @ function), and hashtags (#). These are all *material aspects* of the technology, buttons that are pushed to further communication in some way.

In their explication of affordances, Evans et al. (2017) explain that features are static structural elements; for example, "a smartphone's built-in camera is a feature, while an affordance is recordability…and an outcome could be the documenting of human rights violations" (pp. 39–40). Evans et al. (2017) note that a great deal of literature conflates features, affordances, and outcomes, creating conceptual confusion.

They propose a set of criteria to determine if something is an affordance: first, consider whether it may be a feature; consider whether it is an outcome; and then consider whether the purported relationship has variability (pp. 36–37). Some of the affordances of communicative technology they discuss include anonymity, persistence, and visibility.

3. Methods

To address our research questions, we turned to a mixed-methods approach: qualitative interviews with Twitter account holders and descriptive quantitative analysis of tweets sent by the rogue and alt accounts. First, we identified accounts that we believed were part of this broad network by finding accounts with “alt” or “rogue” title in either their username or profile which referenced a U.S. government agency in some way. We then explored the tweets of this initial list in order to see if they mentioned any other accounts that were not included in our initial list. After adding additional accounts to our list in this manner, we felt that our list of 102 accounts was saturated and was representative of most major accounts as of early February 2017.

Tweets were collected from the 102 rogue and alt accounts on seven different days between 2017-02-13 and 2017-05-01, capturing all available messages sent during the first 100 days of the Trump Presidency. (The first 100 days of a U.S. presidency are often used as convenient time frame of the initial actions of the administration.) Tweets were collected using the “cron” Python script for R. This data collection tool relies on the use of the public search API. As the number of tweets generated by these accounts was relatively small, we do not believe that collection via the API was throttled in any way. We believe the tweets we captured to be comprehensive of the tweets generated by the accounts during the first 100 days of the new administration, that had not been deleted by May 1, 2017. We collected tweets and replies but did not collect retweets where the authors did not add new content. As reflected in Table 1, we collected a total of 43,569 unique tweets from the 102 rogue and alt accounts.

While we collected tweets, we also contacted each account, asking if they would consent to an interview for research purposes. Fifteen agreed and twelve ultimately completed the interview. Interviewees were allowed to select whichever format they preferred; three interviews were conducted via phone, one via email, and eight via Twitter direct message. The interviews were semi-structured and varied in length, resulting in a corpus of over 21,000 words. With respondents' permission, interviews were recorded and saved, transcribed if necessary, and analyzed with the web-based Dedoose software, which allows for team-based coding. The interviews were coded iteratively as patterns and themes emerged from repeated review. Interviewees are represented in this work pseudonymously; the pseudonyms were chosen based on the most common surnames in the U.S. according to the 2010 census. Below, we present interviewees' perspectives on their motivations as they were reported to us; while they may sound idealistic, we wanted to represent this movement in the individuals' own words.

Table 1
Twitter data descriptive statistics.

Statistic	Count
Count of accounts	102
Count of tweets	43,569
Count of replies	21,027
Count of hashtags in corpus	13,639
Count of unique hashtags in corpus	3486
Count of mentions in corpus	41,213
Count of unique mentions in corpus	12,231
Count of hypertext links	24,917
Count of times tweets were favorited	10,428,483
Count of times tweets were retweeted	4,685,343

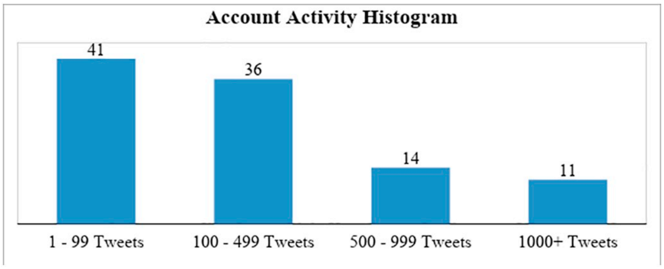

Fig. 1. Activity of the studied Twitter accounts.

4. Results

In this section, we describe the results of our research. We begin with a descriptive analysis of the tweet corpus, providing some descriptive statistics to give the reader a generalized overview of the accounts. We then move to a qualitative analysis of the interviews from the account holders, discussing the authorship, the reasons they gave for creating the accounts, the benefits of Twitter that they saw, the importance of solidarity and cooperation, the importance of correcting misinformation, and the future of these Twitter accounts.

4.1. Descriptive analysis of the tweet corpus

Accounts varied in the volume of content they produced and shared through Twitter. The most active account, @ALT_USCIS, generated 5584 tweets during the first 100 days of the Trump administration, where the least active, @AltDofEnergy, only generated a single tweet. Fig. 1 provides a categorization of the tweet volume among the 102 accounts. Forty-one accounts produced between one and 99 tweets in the timespan, 36 accounts produced between 100 and 499, 14 accounts produced between 500 and 999, and 11 accounts produced in excess of 1000 tweets. As shown in Table 2, accounts on average had a total of 427 tweets, with a standard deviation of 756 tweets.

As seen in Table 3, tweet generation varied somewhat over the first 100 days. More content was produced by the rogue and alt accounts in the first 50 days than in the last 50 days, suggesting some drop-off in levels of engagement. Further, we also observed that among the 41 accounts that generated fewer than 100 tweets during the 100-day span, only nine (21.9%) posted during the last ten days, again suggesting a high degree of drop-off.

4.1.1. Types of engagement

Of the 43,569 tweets we collected, 21,027 (48.3%) were replies to other accounts. When we examine who these accounts are replying to, a few things stand out. First, they frequently talk to each other. Of the top 20 most frequently replied to accounts in the corpus, 17 are other rogue and alt accounts. The Twitter account of the President, @realDonaldTrump, comes in sixth.

We see similar trends for “mentions.” There were a total of 12,231 unique Twitter accounts mentioned in the corpus. As shown in Table 4, @realDonaldTrump was mentioned the most frequently within the corpus ($n = 1221$ mentions), with the @POTUS account the third most

Table 2
Average account activity.

Statistic	Value
Count of accounts	102
Count of tweets	43,569
Mean	427.15
Sample Standard Deviation, s	756.78
Variance (Sample Standard), s^2	572,725.37
Standard Error of the Mean ($SE_{\bar{x}}$):	74.93

Table 3
Tweet generation by 10-day time periods.

Time range (in 10-day time periods)	Number of tweets	Change from previous 10 days	% change from previous 10 days
Jan 24 to Feb 2	5702		
Feb 3 to Feb 12	6052	+350	+6.14%
Feb 13 to Feb 22	6335	+283	+4.68%
Feb 23 to Mar 4	4560	−1775	−28.02%
Mar 5 to Mar 14	4029	−531	−11.64%
Mar 15 to Mar 24	3437	−592	−14.69%
Mar 25 to Apr 3	4809	+1372	+39.92%
Apr 4 to Apr 13	3477	−1332	−27.70%
Apr 14 to Apr 23	1894	−1583	−45.53%
Apr 23 to May 1	3274	+1380	+72.86%

Table 4
The 20 most frequently mentioned accounts.

Account	Number of mentions in corpus
@realdonaldtrump	1221
@alt_labor	734
@POTUS	478
@ALT_USCIS	431
@AltYelloNatPark	357
@AltUSPressSec	343
@alt_fda	341
@AltHomelandSec	279
@alt_lawyer	224
@altUSEPA	210
@AltNatParkSer	202
@AltWHKitchen	197
@jasoninthehouse	191
@ActualEPAFacts	188
@EPA	183
@Alt_Interior	169
@alt_jabroni	169
@GOP	146
@RogueNASA	143
@BadHombreNPS	142

Table 5
Most frequently-appearing hashtags.

Hashtag	Number of appearances in corpus
#resist	2206
#Resistance	521
#climatechange	277
#climatefacts	224
#ScienceMarch	171
#RogueRangers	157
#science	144
#climatechangeisreal	112
#sciencematters	107
#CAH	106
#TheResistance	106
#MarchForScience	99
#MuslimBan	96
#NoUSDAblackout	95
#ScienceNotSilence	95
#AMJoy	85
#Trumprussia	83
#altgovt	76
#WeAreAltGov	63
#altGov	59

Table 6
The 20 most frequently linked domains.

Domain	Number of times linked in the corpus
twitter.com	15,115
washingtonpost.com	755
nytimes.com	415
youtube.com	398
cnn.com	370
politico.com	246
npr.org	189
google.com	186
huffingtonpost.com	184
reuters.com	173
epa.gov	134
independent.co.uk	107
theguardian.com	106
facebook.com	99
thehill.com	93
nbcnews.com	87
nasa.gov	85
talkingpointsmemo.com	77
nps.gov	75
wikipedia.org	75

mentioned (n = 478). Of the top 20 most frequently mentioned accounts, we find that rogue and alt accounts compose 15 of the top 20. A total of 4361 unique tweets, or about 10% of the corpus, mention another alt or rogue account.

We also see that the alt accounts would sometimes mention other agencies' official accounts. This was sometimes done in reference to actions being taken at specific agencies, such as: "Eight of the top 10 warmest years on record have occurred since 1998. #StuffEPAWouldSay #climatescience #standupforscience @EPA @ EPAlive". However, this was sometimes done in an effort to recruit other agencies to join the "alt" network: "To our colleagues at @ YellowstoneNPS @GlacierNPS @CanyonlandsNPS and rest of @ NatlParkServcie: we need you to #jointheresistance #badlands".

The rogue and alt Twitter accounts frequently used hashtags within their tweets. Within the corpus, hashtags were used 13,639 times. Of these, 3486 hashtags were unique. Table 5 provides a list of the 20 most commonly used hashtags. "#Resist" and "#Resistance" were the top two most commonly used hashtags, with climate change and The March for Science related hashtags rounding out the top five.

As mentioned in Table 1, URLs were often included in tweets. A total of 24,917 URLs were linked within the corpus. We crawled the shortened URLs, resolving them to full web addresses. We discovered links to 1359 unique domains including sites such as google.com, youtube.com, etc. Table 6 provides a list of the 20 most commonly linked domains.

Links to Twitter, such as links to tweets or media that had been posted on Twitter, were the most common form of link shared. However, we also found a strong tendency to link to news sites, other social media platforms (such as Facebook), and to government agency websites.

4.2. *Qualitative themes*

4.2.1. *Authorship or ownership of accounts*

One of the interesting findings of the interviews was that, despite representing themselves as protectors of government information and representing particular agencies with the title of their accounts, some of these accounts were not actually run by federal employees. We do not have a full picture of the authorship of all 102 accounts. Due to the nature of the accounts and the implications of authorship, many account holders understandably wished to remain anonymous and did not respond to our request for an interview. However, among those we did interview, identity disclosure varied from nearly non-existent ("prefer not to say where we work" [Jones]), to moderate ("revealing my identity beyond that of a federal contractor is not on the table" [Davis]), to more forthcoming ("I co-run with another person who is an actual [agency] employee" [Johnson]). Some individuals, such as Anderson, self-identified as a civilian. Others noted that they shared authorship responsibilities among multiple individuals; in fact, five of the twelve respondents (~42%) explicitly reported that at least one other person participated in the same account. In total, of the twelve interview participants, three respondents identified as government employees, one identified as a federal contractor, four identified as not being government employees, and five did not disclose.

On Twitter, the alt and rogue accounts did discuss authorship and often suggest they have some relationship to the federal government, but again in ways which provide a somewhat opaque picture of who the authors or orchestrators of the accounts truly are. For example, the @AltTortugasNPS account wrote, "we serve at the pleasure of the American people not @realDonaldTrump not when we are off duty. #resist #climate.". @HUDFacts wrote, "As public servants we are bound by an oath, an oath I take very seriously. #resist.". @AltNPSAlaska wrote, "We as federal employees support ALL Americans visiting THEIR National Parks & are against discrimination, bigotry, and racism.". However, there are others that indicate that while they are not government employees, but that they have a relationship to government employees. For example, @altUSEPA wrote, "The administrator of this account is not a Federal employee. No "leaks" here, but we get direction. That's all we're saying.". Similarly, @alt_labor wrote, "I have also REPEATEDLY said I run this acct w/ a DOL employee. I never claimed, myself, to be one.".

4.2.2. Reasons for creating accounts

Two main themes emerge within the interviews regarding the creation of the rogue and alt accounts–solidarity and posterity. The overwhelming majority of the rogue and alt account holders assert solidarity as one of the main reasons for creating the accounts. Lopez illustrates this well:

> When I saw that NPS had made an alt account and then NASA, I knew it was only a matter of time before people would have the idea to do one for all agencies. I felt like this was an opportunity for me to use what I already know about social media from other activism to create a platform where I could work with people who are experienced educators to make a change.

Davis said that "after the National Park Service went rogue, that was sort of the trumpet call". Hernandez also echoes this sentiment: "Websites were being censored and information was being taken down and so forth and I thought that it would be good for there to be kind of wide representation of agencies...". Thus, as the news began to break about federal agencies' Twitter feeds and websites facing censorship, many chose to create alternative accounts to push back against those actions.

The alt and rogue accounts did not spring up solely to support the National Park Service (NPS), though. Account holders describe fears that their own agencies would soon be censored as the political momentum continued to shift. On Twitter, the alt-related @noaagov account wrote, "If the order is given to censor NOAA, we will be ready. We are doing this on our own time" and @RogueNASA stated, "as we've said many times before, this account is Plan B if and/or when Trump tries to censor NASA.". In the interviews, the respondents describe the need to provide accurate information for their own agencies/organizations in case they were the next targets. For instance, Garcia describes the primary reason for starting the account was to "show people how important education is, to highlight legislation and ideas that can either help or harm the education system…". Johnson perhaps describes this fear most vividly:

> I was worried about, if we were told to manipulate data or if we were, if the President kept disputing our numbers, eventually those numbers are going to go sour, so I wanted to be kind of a voice within the [sub-agency] to be like yeah, actually these are the numbers, providing proof without giving away confidential information, that we're doing something.

Many of the alt and rogue related accounts called attention to the censoring of scientific data. For example, @AltHHS wrote, "Threatening scientific integrity threatens the health of our nation. #ScienceFirst #nocensorship" and @AltRockyNPS wrote, "The Trump admin has begun its censorship of the EPA. We must remain vigilant advocates for scientific reality. #EPA".

Many rogue and alt account holders indicate they took the threat of censorship seriously, and either indicated they would use Twitter to disseminate information for posterity or had already done so. Based on the interview data, creation of the rogue accounts held dual purposes–demonstrating solidarity with the agencies whose voices had already been stifled and proactively providing accurate information in anticipation of increased efforts to censor. By utilizing alternative social media accounts, agencies and supporters alike were able to take action individually, and without the limitations of their governmental accounts, to ensure that proper information and reports were available to the public. As @AltNatParkSer described their own world view on Twitter, "How sad is it that rogue Twitter accounts must exist just to communicate FACTS to the American public? #TrumpsAmerica #NPS". Interestingly, however, when looking across the entire corpus, we see a far greater volume of links to news content than the sharing of datasets or other scientific information.

4.2.3. Benefits of Twitter

Many account creators lauded Twitter as a medium for protest and political participation. Two major themes emerged in the interview responses with regard to the benefits of using Twitter: the ease of sharing information with a broad audience and the ability to harness social media to change the news cycle narrative. Davis asserted that "social media provides the sole source of information for many Americans," which means these accounts have a platform that can potentially reach a very large audience quite easily. Garcia noted that the very nature of Twitter makes it a good fit for this kind of protest: "Twitter as a social media platform makes it easy to quickly share information. The hashtag system, being able to retweet things relevant to a subject, and being able to interact directly with other users all lend themselves to reaching a much wider audience than you can with other platforms.". Indeed, Twitter's technical setup allows users to categorize information and find similar information through the use of hashtags. This setup allows like-minded accounts to coordinate information and participation in productive ways.

Twitter's ability to facilitate at least quasi-anonymity also contributes to its users' potential effectiveness in political participation. In the case of the rogue and alt accounts, those who could not communicate via official channels were able to disseminate information and share resources with others without as much fear of retribution or backlash. As @RoguePOTUSStaff wrote, "We kind of have this obsession with remaining anonymous.". Thus, the benefits of using Twitter for voicing pseudonymous dissent or engaging in political activity seem clear.

4.2.4. Solidarity and cooperation

Perhaps the most salient theme running through the interview responses is solidarity. This is evident in the discourse about the impetus for creating the accounts and throughout the interviewees' responses more broadly. Nearly all of the respondents spoke about a sense of collective responsibility and support not only for each other, but for the public and scientific information as well. When the National Parks Service account was censored, other agencies supported them through their own participation with alt Twitter accounts. These accounts aimed to ensure that the public had access to correct information. In some cases, accounts emerged as a direct result of an account creator's exposure to another rogue and alt account. In other cases, actors created accounts with the purpose of amplifying the voices of existing rogue and alt accounts. For instance, Anderson "set up the account as a civilian who had the rogue accounts['] backs.". In either case, the drive to support one another in the course of promoting progressive causes is a recurring trope in the interview discourse. Of the 12 interviews, ten respondents specifically mention solidarity or support as one of the primary functions of their rouge and alt accounts, and it is implied in the others. This can also be seen in the tweet corpus. Often, alt-related accounts would mention each other, or would provide suggestions of other alt-related accounts to follow. For example, @RoguePOTUSStaff wrote, “Here's a few… @alt_fda @AltNatParkSer @altUSEPA @ RogueNASA @Alt_NIH @altNOAA @AlternativeNWS @AltForestServ @AltNatParkSer @altusda” and later tweeted, “Everyone please follow all #altgovt accounts. If all can beat 22.3M followers on POTUS personal acct, will send strong message. #triggered.”.

This also speaks to the notion of solidarity among account holders. Not only did government agencies and federal contractors create accounts in response to perceived threats from the Trump administration, but concerned civilians joined the conversation by creating accounts to voice dissent. The sense of anonymity afforded by Twitter allows for a wide range of participation. When official government agencies' social media accounts were silenced, users created rogue and alt accounts which could not reliably be linked back to specific actors/agents. This solidarity between actors in and outside of federal service helped broaden the networked audience to whom information could be disseminated (e.g. sharing followers, re-tweeting each other, etc.).

Even within the solidarity theme in the interviews, there is a variety of language used to represent the goals of participation: for Jones, the goal was to “show support”; for Gonzalez, it was “to pose as an aggregate for other opinions”; for Williams, it was about “coordinating and providing resources” and “connect[ing] to other folks”. Throughout the interview discourse, there is a sense of camaraderie, support, and strength in numbers. Even as the goals of each individual account differed, the overarching sentiment was one of support.

4.2.5. Correcting misinformation

The dominant trope emerging in the interview responses regarding the accounts' role in correcting misinformation is the need to combat false information and act as a reliable venue for information. One of the interviewees, Davis, illustrates the overlap of these two actions succinctly:

> The louder the voices of misinformation, the louder we must be in response…it's less about being pedantically correct and more about widely disseminating facts relating to defense of democratic institutions. We believe people can determine truth from falsehood when given the information.

There is a general sense within the interview discourse of the need to protect the authenticity of facts and truth against those who would manipulate them for their own purposes. As an example, Hernandez notes that “in opposition to fake news and opposition to alt-facts… there's a need to step up and kind of correct the record on these things.”. In some cases, there was even fear that the real data/facts would be washed out by fake news/numbers. This was also expressed on Twitter. For example, @AltUSDA_ARS wrote, “This is not the “Trump Era.” It is the Misinformation Age. We are not satisfied with vanity-stroking eponyms.”.

Another theme within the interview responses highlights a sense of frustration that government statistics are not being taken seriously and are in constant dispute. Johnson illustrated this sentiment: “for me it was difficult to hear when your president is saying that what you've been doing at your work for eight plus hours a day, crunching numbers and stuff like that, is essentially not real.”. Williams echoed this sentiment, noting that the administration is “putting out information that is so skewed and tainted and not coming from a place of journalistic integrity, and that's a problem.”. On Twitter, @ungaggedEPA expressed this sentiment, stating, “Political appointees SHOULD NOT be signing off on #EPA scientific research- this is unprecedented. #ungagEPA”. Thus, the need to correct information stems from perceived attacks on the integrity of existing governmental statistics and facts.

4.2.6. Future of accounts

An additional consideration of Twitter as a medium is that it is easily malleable and/or disposable. By this, we mean that Twitter accounts do not necessarily have to carry the same function or follow the same trajectory throughout their lives. Twitter registration is simple and free, allowing users to create multiple accounts that might serve any number of purposes, whether they be personal, political, or work-related. Many of the alt account holders discussed the future of these specific accounts with regard to their perceived longevity. Within this discourse, two distinct themes emerge: uncertainty over the future of the accounts and opposition to the Trump administration.

The most common response to questions about the future of the alt accounts signaled uncertainty. Hernandez opines that “most people who jumped on these accounts…didn't really hash out the long strategy on this.”. Jones notes that “the larger impact has come and gone, but as long as there are people behind them, they will stay relevant.”. Johnson suggests that “people are so into the current, everyday…I don't think there's many people who have a longer vision to this whole resistance.”. As is evident from these responses, the longevity of these accounts, and in some cases the whole resistance to Trump's administration, is perceived to be in flux. The future of these rogue and alt accounts depends on the overall trajectory of the movement. Despite this uncertainty, there is a sense among the respondents that the energy fueling these accounts will continue until the Trump administration cedes ground.

When asked about the future of these rouge and alt accounts, several of the interviewees referenced the Trump administration directly in their responses. Davis responded, “until Donald Trump resigns. So probably 2018ish.”. Gonzalez responded, “until Trump is impeached? My problem is that getting rid of Trump will ease minds, but then we get Pence. So I think I'll be sticking around for a while.”. Garcia says the account will continue “as long as necessary. As long as there are people who use this account to get information, and as long as our current administration insists on fighting against the unalienable rights that we are all entitled to.”. Clearly there is a shared sentiment that the Trump administration is the direct adversary against which these accounts are resisting. Thus, the future of these alt and rogue accounts is integrally linked with the actions and policies of the administration.

5. Discussion

We now turn to a discussion of the research questions and some of the potential implications of this exploratory study of the rogue and alt Twitter accounts.

5.1. RQ1: who are the people that run these accounts?

Our first research question concerned the people who run the accounts. Our data only provides a partial picture of the authors behind the alt and rogue accounts; according to the interviews, only three out of twelve reported being government employees. Taken in conjunction with the small interview pool, it remains unclear how many of these accounts are managed by actual government employees. This lack of clarity has broader implications for interpreting the messages from these accounts.

Many of these accounts suggested in their self-presentation on Twitter that they spoke for “real” government employees or were committed to disseminating “real” government information. If the account owners are not government employees, however, can they reasonably be seen as alternative government stand-ins? To what extent can non-government employees represent government agencies and departments? Some of the frustrations expressed by rogue and alt Twitter accounts were focused on people like Betsy DeVos (Secretary of Education), someone with no government experience suddenly in charge of an enormous government agency. It is difficult to interpret such frustrations in light of the fact that some of these accounts are, themselves, not run by government employees yet purport to be representative of government agencies.

The lack of "verification" or proof of identity is somewhat of a catch-22. Evidence that could "prove" that the author of an account is an actual federal government employee could also wind up identifying the author. Ringrow (2017) pointed to this irony in discussing the efforts that @RoguePOTUSStaff took to try to build credibility. She wrote, the account

> which claims to be maintained by "the unofficial resistance team within the White House", currently [has] 865,000 Twitter followers. There is much speculation over the account's legitimacy, and the person or people behind the account refuse to divulge their identity; of course, any actions that the "rogue" staffers could take to "prove" themselves might entail potentially serious personal and legal consequences.

This lack of verification also creates the real potential of actors misrepresenting themselves and their content being treated uncritically. We know that several alt and rogue accounts shared authorship or were authored by civilians. While we have no data that indicates that this occurred, the lack of verification could lead to lack of trust in the veracity of the information shared (Timberg & Romm, 2017).

5.2. RQ2: what are the goals or purposes of these accounts according to the people that run them?

Though the authorship/ownership of these accounts is unclear, the goals and purposes of the accounts (the second research question) are very clear and focused. Rogue and alt Twitter account holders wanted to band together in solidarity, express concern and frustration with the Trump administration, and disseminate (accurate) information to the broader public. These goals were evident through both the qualitative data and quantitative data (such as the frequently used hashtags, the @ replies, and the many tweets containing URL links to further information). In the interviews, respondents clearly expressed these goals. On Twitter, the accounts made their goals known as well. For example, the @AltUSNatParkService wrote, "Mr. Trump, you may have taken us down officially. But with scientific evidence & the Internet our message will get out. #NPS.". The @AltStateDpt wrote, perhaps more simply, "We request the president's resignation, effective immediately. - Concerned citizens.".

In working toward these goals, the rogue and alt Twitter account holders helped foster an issue public, a group of users who self-organized around a key topic of importance to them (Bruns & Burgess, 2015; Mairerder & Schlogl, 2014). Evidence of this can be seen in the number of times that alt and rogue accounts mention each other. For example, of the 20 most frequently mentioned accounts within the corpus, 15 are other alt and rogue accounts. Beyond an issue public, we argue that these rogue and alt Twitter accounts—and their followers—developed a sense of digital togetherness, akin to Marino's (2015) immigrant population. Members of the "resistance" could find one another with hashtags and replies, share information (often with URLs), and commiserate and draw strength and solidarity from one another. Although we did see some tapering off in activity in these accounts over the 100 days, many accounts were still quite active through the end of this period.

The success of these accounts depended on the extent to which they were able to craft a narrative about their purpose and shore up the authority by which they spoke. To a large extent, these individuals defined themselves as defenders of public access to scientific information, an opposition movement, and torch-bearers for the truth (We do not evaluate the authenticity of these claims, but merely report the account holders' perspectives.). When we examine the kinds of content generated by the rogue and alt Twitter accounts, we can see the relative attention each purpose was given. While the accounts frequently positioned themselves as providing access to otherwise censored government information, tweet volume suggests greater attention and energy was given to coalition building through replies rather than purely circulating removed or censored information. Instead, it appears that the removal of scientific information was the origin point for the resistance coalition, but not necessarily the sustaining property. More broadly, the rogue and alt accounts appear frequently to focus on topics outside of scientific inquiry, that might be more generally categorized as a concern about facts and who should be the arbiter of them. For example, these accounts generated hundreds of tweets linking to press sources. This form of citation and reference reinforces the relative importance of the media and suggests that they see the media as an arbiter of truth. This runs counter to how President Trump has positioned the media on several occasions (i.e., as fake news).

5.3. RQ3: how do they use Twitter to achieve these goals?

Our third research question focused on how account managers used Twitter to achieve their goals. Respondents (and all owners of the rogue and alt Twitter accounts) were able to deploy several key features of Twitter which afforded them certain capabilities to achieve their goals (see Table 7). Rogue and alt account holders relied on the naming feature of Twitter to protect their names, reputations, and careers. This feature afforded pseudonymity to users, allowing them to choose clever handles such as @RogueNASA or @viralCDC rather than using their given names. They were able to signal their (supposed) affiliation to or affinity for a particular government agency while simultaneously protecting their jobs, some of which would have likely been in jeopardy.

Another feature which enabled account holders to reach their goals was hashtags. In Twitter, hashtags afford visibility, spreadability, and searchability, all of which were important to the account holders. For example, the two most common hashtags in this corpus, #resist and #Resistance, which make a combined appearance of more than a total of 2500 times in the corpus and constituted more than 1/5 of the overall use of hashtags in the corpus, helped link a network of like-minded people, as others who wanted to resist the Trump administration used and replied to these hashtags. Using these hashtags made tweets more visible by making them part of an ongoing and active conversation. These hashtags also afforded spreadability by facilitating the distribution of resistance-related content.

Along with hashtags, users also relied on the @ feature of Twitter to reply to one another and to others, which afforded them visibility and spreadability. When the accounts used the @reply for Donald Trump, for instance, their replies were likely seen by many more people, including both fans and critics. Some of the rogue and alt accounts had far more followers than others, so by @replying to those accounts, lesser-known accounts could increase their visibility. Including @replies also spread content further, reaching followers of the account that was

Table 7
Features, Affordances, and Outcomes of Twitter.

Feature	Affordance	Outcome
Naming conventions	Pseudonymity	Protection of real names, reputations, and careers
Hashtags	Visibility, searchability, and spreadability	Made tweets more visible and facilitated distribution of "resistance"-related content
Reply feature (@)	Visibility and spreadability	Tweets were seen by more fans and critics
Inclusion of shortened URLs	Visibility, spreadability, and referentiality	Made tweets more visible, more likely to be shared, and connected tweets to evidence or documentation

replied to.

A final useful feature for the rogue and alt accounts was the ability to include (shortened) URLs in their tweets. While links within Twitter were the most common, there were many links to government agency websites, news sites, and other social media platforms; a total of 52% of our tweet corpus included at least one link. Including URLs in their tweets afforded account users visibility and spreadability, two of the affordances suggested by boyd (2014). In addition, we suggest another affordance of links in tweets: *referentiality*, or the ability to connect a tweet to evidence, documentation, or a citation. Links allow the sender to reference further information. For example, a tweet may state that the Trump administration has proposed certain rule changes, with an accompanying link to a government agency; clicking on the link takes one to the proposed rule change. Disagreement about a specific administration action may reference a news story.

Often, these tweeted-out links contain further information, unconstrained by (the then-limit of) 140 characters. Thus, the links serve as evidence to support and situate claims made in tweets. This was particularly important for our respondents, who were challenging statements and actions of the Trump administration. Providing supporting documentation, for them, was a way to bolster their own claims and make them weightier than Trump's statements. The ability to include a URL in a tweet is a feature of the platform. Referentiality is the affordance provided by this feature (and providing evidence might be seen as the outcome; c.f. Evans et al., 2017).

6. Conclusion

In this article, we examined the rogue and alt Twitter accounts during the first 100 days of the Trump presidency. We recorded 43,569 tweets during this time and gathered twelve interviews with account managers. Though many purport to represent government agencies, only three of the twelve interviewees indicated they are federal employees. Despite this, many indicated the primary goals of their rogue and alt Twitter accounts were to provide solidarity for one another and to disseminate information. To achieve their goals, the accounts relied on several key features of Twitter, including the naming feature, the @ replies, the hashtag, and the ability to include URLs. The affordances of these features were important to the account holders. We suggest referentiality was a key affordance for the development of this resistance group. Referentiality affords users the ability to connect a tweet to further information or evidence, a particularly important affordance for these account holders.

While this exploratory work provided important illumination to the rogue and alt Twitter accounts, there are some limitations that should be noted. We limited our data collection to the first 100 days of the Trump presidency, though it is clear that some of these accounts have remained active past that time frame. The "first 100 days" is somewhat arbitrary, though it has become a recognized frame for the initial actions of the president. Further, despite promising confidentiality and anonymity, our sources were quite fearful, and we were only able to secure twelve interviews (out of 102 account holders). Because this is a low number, generalizations from the interviews should be taken with caution. Further, the extent to which trends from this particular event (that is, the rise of alt and rogue Twitter accounts post-inauguration) might be generalized to other domains is highly limited. We argue that, while online social movements are not uncommon, the particular characteristics of this event are somewhat unique. As a result, our analysis tends toward explaining the inner workings of this particular unique circumstance, rather than positing broad descriptive theory.

However, there are a number of ways that future work can expand upon this project. For example, future work could model the connections between the different accounts and their followers and evaluate this as a social network. The concepts of issue publics, communities, and digital togetherness could be explored further with additional quantitative data. Researchers could try to secure additional interviews with account holders (or with followers) to learn more about these accounts, their priorities, their actions, and so on. It could also be beneficial to compare the information disseminated by official government Twitter accounts (or other media channels) with the information disseminated by these rogue and alt Twitter accounts. Lastly, future research may seek to explore how official government accounts and media entities responded and interacted with the alt and rogue accounts. Such work could build on the present work, providing a rich account of how alt and rogue accounts were publicly portrayed.

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