# Social Feed Manager & Social Media Archiving

Digital Preservation Coalition December 6, 2018

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### Agenda

- Overview of social media data and APIs
- Twitter's API
- Walk-through of Social Feed Manager
- More tools for collecting social media data
- Ethical, legal, and privacy considerations
- Collections at GW Libraries

# Social media on the web



#### Social media as data

1065335026684973057 Wed Nov 21 20:03 theresa may

id	created_at	user_screen_na	tweet_type	text	hashtags
1067461027867037696	Tue Nov 27 16:51:	theresa_may	retweet	RT @10DowningStreet: "Taken together, the Withdrawal Agreement	and the broad term
1067426770154967040	Tue Nov 27 14:35:	theresa_may	original	Great to visit the Royal Welsh Winter Fair today to hear from farmers	BackTheBrexitDeal
1067380306368446464	Tue Nov 27 11:31:	theresa_may	original	Baroness Trumpington had a truly extraordinary career – from her we	ork at Bletchley Park
1067182375619256322	Mon Nov 26 22:24	theresa_may	retweet	RT @10DowningStreet: "Antisemitism and misogyny have no place in	this country. Hatre
1067078616146690049	Mon Nov 26 15:32	theresa_may	retweet	RT @10DowningStreet: WATCH LIVE: PM @Theresa_May updates @	BackTheBrexitDeal
1067058959935258624	Mon Nov 26 14:14	theresa_may	quote	Many congratulations to @r_j_smith1, selected as the @Conservativ	es Parliamentary ca
1066760010896736257	Sun Nov 25 18:26:	theresa_may	retweet	RT @10DowningStreet: From the Downing Street steps to the EU Cou	uncil in Brussels. An
1066687749456039938	Sun Nov 25 13:39:	theresa_may	original	I will take this deal back to the House of Commons confident we have	BackTheBrexitDeal
1066672231969947648	Sun Nov 25 12:37:	theresa_may	retweet	RT @10DowningStreet: 40 reasons to back the Brexit deal 👇 [tap to	BackTheBrexitDeal
1066666954893787136	Sun Nov 25 12:16:	theresa_may	retweet	RT @10DowningStreet: WATCH LIVE: PM @Theresa_May makes a sta	BackTheBrexitDeal
1066650176734023680	Sun Nov 25 11:09:	theresa_may	retweet	RT @10DowningStreet: The UK's position on Gibraltar's sovereignty l	has not changed and
1066466567700037632	Sat Nov 24 23:00:	theresa_may	original	My letter to the nation. #BackTheBrexitDeal https://t.co/VGzNeeXo	BackTheBrexitDeal
1066422950008680448	Sat Nov 24 20:06:	theresa_may	original	I am proud that Gibraltar is British. I will always stand by Gibraltar. h	ttps://t.co/NzM1vi
1066013570792603649	Fri Nov 23 17:00:1	theresa_may	original	The Brexit deal explained. #BackTheBrexitDeal https://t.co/HvWdvqH	BackTheBrexitDeal
1065980751085281280	Fri Nov 23 14:49:5	theresa_may	original	I've always been clear that getting the right Brexit deal means getting	a deal that is right
1065917637639708672			retweet	RT @10DowningStreet: Yesterday, PM @Theresa_May visited the Jar	
1005075012070205152				DT @10DiCtt DM @Th Mli- i th- @11fC	

1065675812878385152 Thu Nov 22 18:38: theresa may RT @10DowningStreet: PM @Theresa\_May spoke in the @HouseofCommons about why retweet 1065666577729765378 Thu Nov 22 18:01: theresa\_may RT @10DowningStreet: PM @Theresa May met Austrian Chancellor @sebastiankurz at [ retweet

1065621185856237568 Thu Nov 22 15:01: theresa\_may RT @10DowningStreet: WATCH LIVE: PM @Theresa May makes a statement in @House retweet 1065599939902955522 Thu Nov 22 13:36: theresa may The British people want this to be settled. They want a good deal that sets us on course f original RT @10DowningStreet: WATCH LIVE: PM @Theresa\_May gives a statement on Brexit htt 1065585241631453184 Thu Nov 22 12:38: theresa may retweet 1065581110896328705 Thu Nov 22 12:21: theresa may RT @10DowningStreet: Services at @jameswigg help keep people healthy and independe retweet

original

Our cut to stamp duty is just one of the steps we've taken to fix the housing market. I'm

```
"entities": {
       "hashtags": [],
       "symbols": [],
       "urls": [
               "display url": "facebook.com/TheresaMayForP...",
               "expanded url":
"https://www.facebook.com/TheresaMayForPM/posts/1349767708373332",
               "indices": [
                   118,
                   141
               "url": "https://t.co/TqTTz0hlIz"
       "user mentions": []
   },
    "favorite count": 825,
   "favorited": false,
    "full text": "Today I launch my campaign to be our next PM. Please read & amp;
share my vision of a country that works for everyone: https://t.co/TqTTz0hlIz TM",
   "geo": null,
   "id": 748427251713187840,
```

# APIs and JSON

# Collecting social media content (typically) involves

using the platform's APL to get posts as JSON

#### What's an API?

- Short for Application Programming Interface
- Intended for software to interact with a website
  - vs. a web interface, designed for *people* to interact with a web site.
- API calls consist of:
  - c request: http://an.api.com/somerequest?foo=15
  - o <u>response</u>: structured data, e.g., XML or JSON

# Why not just use Web Scraping?

### Why not just use Web Scraping?

- It's hard
- It's fragile
- It's incomplete



# Or maybe traditional Web Archiving?

## But using the API...

### Using an API for collecting social media data

- Generally gives you exactly what the platform stores.
- Can give you useful slices of data you can't get by any amount of scraping.
- Gives you social media data in structured format, which makes it easy to analyze as data.

### JSON - JavaScript Object Notation

- { key: value, key: value... }
- keys are strings
- a value may be:
  - o string in quotes: "GW"
  - o number
  - o boolean true or false
  - another JSON object
  - array (denoted by square brackets [ ]) of JSON objects
  - o null

### JSON example

```
{ 'title': 'Social Media Archiving',
'logistics':
    { 'datetime utc': '2018-12-06 14:30:00',
     'duration hrs': 1,
     'location': 'Webex'},
 'awesome': true,
 'wine list': [],
 'presenters': ['Laura Wrubel',
                'Dan Kerchner']
```

#### Tweets are JSON too

- Twitter's guide to the structure of a tweet:

  <a href="https://developer.twitter.com/en/docs/tweets/data-dictionary/overview/tweet-object">https://developer.twitter.com/en/docs/tweets/data-dictionary/overview/tweet-object</a>
- Let's look at an example...



```
created_at: "Sun Dec 02 16:29:00 +0000 2018",
                                                                                           in reply to status id: null,
  id: 1069267199318216700,
                                                                                            in reply to status id str: null,
  id str: "1069267199318216704",
                                                                                           in reply to user id: null,
  full text: "Congratulations to CCAS alums Sally Nuamah, BA '11, and Tara Dorfman
                                                                                           in reply to user id str: null,
  named to Forbes 2019 30 Under 30 lists! #GWCCAS #GWU https://t.co/kPWyKrJ9Ux",
                                                                                            in reply to screen name: null,
                                                                                          - user: {
  truncated: false,
                                                                                               id: 54639174,
+ display text range: [...],
                                                                                               id str: "54639174",
- entities: {
                                                                                               name: "GW Arts & Sciences",
    - hashtags: [
                                                                                               screen name: "gwucolumbian",
       - {
                                                                                               location: "Washington, D.C.",
              text: "GWCCAS",
                                                                                               description: "Official Twitter account for the Columbian College of Arts ar
           - indices: [
                                                                                               Sciences at The George Washington University. Home of the Engaged Liberal
                 132,
                                                                                               Arts.",
                 139
                                                                                               url: "https://t.co/g0ys0T59mJ",
                                                                                             - entities: {
                                                                                                - url: {
          },
                                                                                                    - urls: [
              text: "GWU",
                                                                                                             url: "https://t.co/q0ys0T59mJ",
            - indices:
                                                                                                             expanded url: "http://columbian.gwu.edu",
                 140.
                                                                                                             display_url: "columbian.gwu.edu",
                 144
                                                                                                           - indices: [
                                                                                                                0,
                                                                                                                23
      ],
      symbols: [ ],
      user mentions: [ ],
      urls: [ ],
                                                                                                 - description: {
    - media: [
                                                                                                      urls: [ ]
       - {
              id: 1069267196357091300,
                                                                                               protected: false,
              id str: "1069267196357091328".
                                                                                               followers count: 4322,
           - indices: [
                                                                                               friends count: 608,
                 145,
                                                                                               listed count: 136,
                 168
                                                                                               created_at: "Tue Jul 07 18:49:10 +0000 2009",
                                                                                               favourites count: 4202,
             media url: "http://pbs.twimg.com/media/DtbM2ZDXoAAMvQ7.jpg",
                                                                                               utc offset: null,
             media url https: "https://pbs.twimg.com/media/DtbM2ZDXoAAMvQ7.jpg",
                                                                                               time zone: null,
              url: "https://t.co/kPWvKrJ9Ux",
                                                                                               geo enabled: true,
             display url: "pic.twitter.com/kPWyKrJ9Ux",
                                                                                               verified: false,
                                                                                               statuses count: 9273,
              expanded url: "https://twitter.com/gwucolumbian/status/10692671993182
                                                                                               lang: "en",
              type: "photo".
```

#### Most useful API methods for collecting tweets

- User timeline: GET statuses/user\_timeline
- Search: GET search/tweets
- Filter stream: POST statuses/filter
- Sample stream

More: <a href="https://developer.twitter.com/en/docs">https://developer.twitter.com/en/docs</a>

#### Geotagging

- When posting a tweet:
  - Geotagging is opt-in. Only ~2% geotagged.
  - Lat, long or place name (e.g., DC or Middle Earth)
- API support:
  - Search API: Limit to a specified distance of a lat, long.
  - Filter Stream: Limit to a bounding box.

#### More:

https://gwu-libraries.github.io/sfm-ui/posts/2017-04-12-geographic-collecting

# Social Feed Manager walkthrough

Social Feed Manager empowers researchers and archivists to build collections of social media data from multiple platforms.

#### Log In

If you have not created an account yet, then please sign up first.

Username

Username

Password

Password

Forgot your password?

Remember me

Social Feed Manager empowers researchers and archivists to create collections of social media data from Twitter, Tumblr, Flickr, and Sina Weibo. Read more about Social Feed Manager here.

Collecting and using data from social media platforms is subject to those platforms' terms (Twitter, Flickr, Sina Weibo, Tumblr), as you agreed to them when you created your social media account. Social Feed Manager respects those platforms' terms as an application (Twitter, Flickr, Sina Weibo, Tumblr).

Social Feed Manager provides data to you for your research and academic use. Social media platforms' terms of service **generally do not allow republishing of full datasets**, and you should refer to their terms to understand what you may share. Authors typically retain rights and ownership to their content.

In addition to respecting the platforms' terms, as a user of Social Feed Manager and data collected within it, it is your responsibility to consider the ethical aspects of collecting and using social media data. Your discipline or professional organization may offer guidance. Here are some ethical and privacy guidelines you may want to consider.

#### Credentials

**Connect Twitter Account** 

Credentials are used to authorize Social Feed Manager to collect data from To Authorize Social Feed Manager by connecting your account or adding creden



Add Twitter Credential



Authorize Social Feed Manager (GW Sandbox) to use your account?



Social Feed Manager (GW Sandbox)

Sign up for Twitter >

By GW Libraries go.gwu.edu/sfm

Social Feed Manager, GW Sandbox

Password

Remember me · Forgot password?

Sign In Cancel

Username or email

#### This application will be able to:

- · Read Tweets from your timeline.
- · See who you follow.

#### Will not be able to:

- · Follow new people.
- · Update your profile.
- · Post Tweets for you.
- Access your direct messages.
- See your email address.
- · See your Twitter password.

Social Feed Manager Collection Sets Credentials Exports Monitor Welcome, kerchner2 -

#### Collection Sets

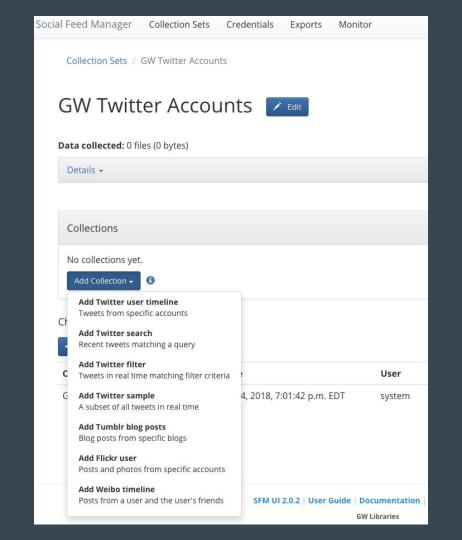
A collection set is a group of collections around a particular topic or theme. Collections sets are active when there is at least one active collection within them. Collection sets are inactive when all collections have been deactivated and are no longer harvesting.

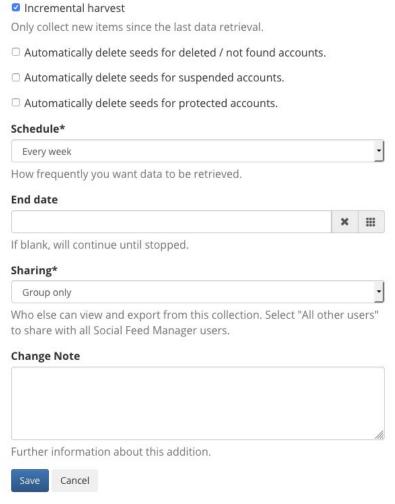


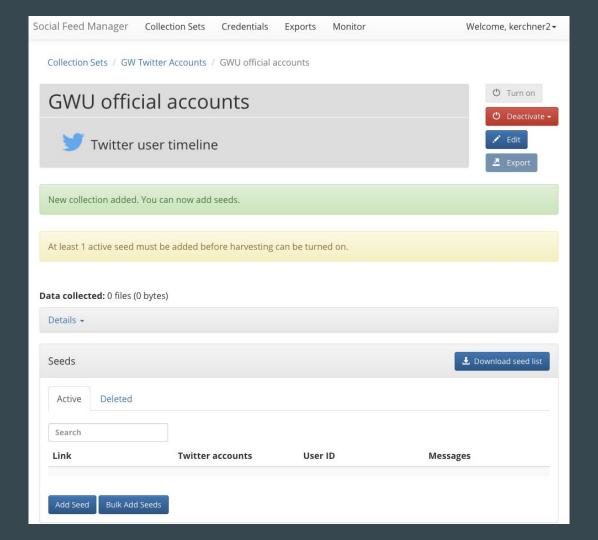
No corresponding collection sets.

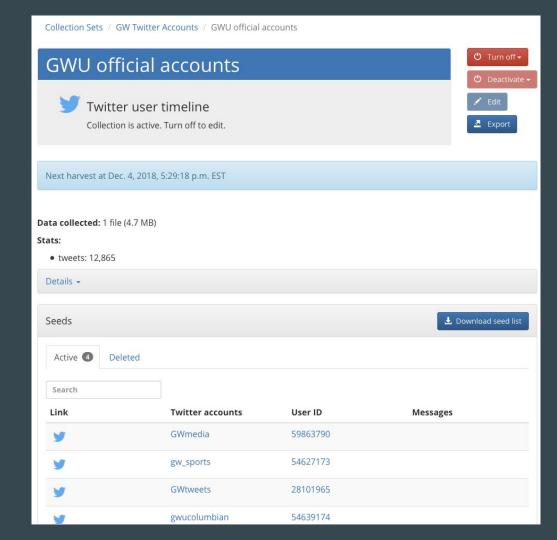
Add Collection Set

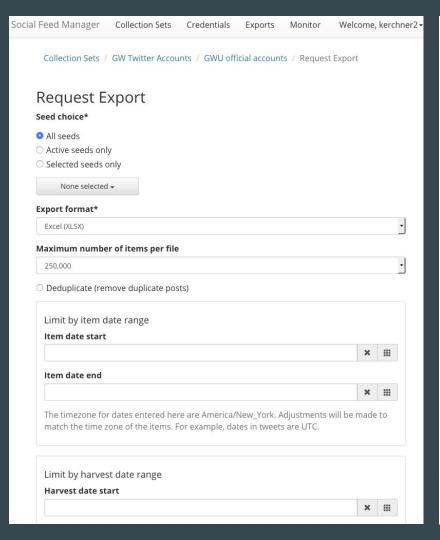
Cancel











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Harvest date end		
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Collecting and using data from social media platforms is subject to those platforms' terms (Twitter, Flickr, Sina Weibo, Tumblr), as you agreed to them when you created your social media account. Social Feed Manager respects those platforms' terms as an application (Twitter, Flickr, Sina Weibo, Tumblr).

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SFM UI 2.0.2 | User Guide | Documentation | Citing | Contact Us

**GW Libraries** 

Social Feed Manager Collection Sets Credentials	Exports Monitor	Welcome, kerchner2 →
Collection Sets / GW Twitter Accounts / GWU official ac	counts / Export	
Export files for GWU official accounts		
Filename	Size	
6b0da4c9bb0e4087a48c8793effe0bab-README.txt	2.0 KB	
6b0da4c9bb0e4087a48c8793effe0bab_001.xlsx	2.8 MB	
See the data dictionary for more information about the fiel	ds in the export.	
See the guidance on citing SFM and datasets.		
Status: Success		
Format: xlsx		
Selected seeds: All seeds		
Details -		

Collecting and using data from social media platforms is subject to those platforms' terms (Twitter, Flickr, Sina Weibo, Tumblr), as you agreed to them when you created your social media account. Social Feed Manager respects those platforms' terms as an application (Twitter, Flickr, Sina Weibo, Tumblr). Social Feed Manager provides data to you for your research and academic use. Social media platforms' terms of service generally do not allow republishing of full datasets, and you should refer to their terms to understand what you may share. Authors typically retain rights and ownership to their content. In addition to respecting the platforms' terms, as a user of Social Feed Manager and data collected within it, it is your responsibility to consider the ethical aspects of collecting and using social media data. Your discipline or professional organization may offer guidance. Here are some ethical and privacy guidelines you may want to consider.

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favorite\_cc i

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tweet\_url

Social Feed Manager Collection Sets Credentials Exports Monitor Welcome, kerchner▼

#### **Collection Sets**

A collection set is a group of collections around a particular topic or theme. Collections sets are active when there is at least one active collection within them. Collection sets are inactive when all collections have been deactivated and are no longer harvesting.



Name	Collections	Date Added	Groups
115th U.S. Congress	3 collections	Jan. 27, 2017, 10:47:12 a.m. EST	GW Libraries Scholarly Technology Group
2017-2020 Federal Term	2 collections	Jan. 20, 2017, 11:26:54 a.m. EST	GW Libraries Scholarly Technology Group
Alaska Earthquake	2 collections	Nov. 30, 2018, 1:37:25 p.m. EST	GW Libraries Scholarly Technology Group
China Anti-Corruption	48 collections	June 29, 2016, 11:49:14 p.m. EDT	CEAL Grant
Climate change	1 collection	Sept. 21, 2017, 8:11:54 a.m. EDT	GW Libraries Scholarly Technology Group
Corcoran	1 collection	March 29, 2017, 5:17:54 p.m. EDT	GW Libraries Scholarly Technology Group
Foreign leaders	1 collection	March 11, 2018, 9:43:54 p.m. EDT	GW Libraries Scholarly Technology Group
Governors	1 collection	March 11, 2018, 9:34:03 p.m. EDT	GW Libraries Scholarly Technology Group

#### Infrastructure

- SFM:
  - Production
  - Sandbox: For instruction and experimentation.
  - Amazon Web Services instances for special uses.
- Access is restricted to GW network.
- Currently using 5TB out of 6TB storage

#### Infrastructure: Challenges

- Skills
- Storage Space
- Updates / Keeping up with API changes

## More tools for collecting social media data

- DocNow tools:
  - twarc: command-line tools for collecting from Twitter, with a suite of utilities for visualization and processing.
  - Hydrator: desktop app which will get the full tweet metadata for a list of tweet identifiers
     (watch for more in the second phase of their Mellon grant)
- TAGS: Google Sheet for quick and dirty collecting.
- Commercial tools

### Great list from IIPC of more tools.

<u>DocNow Slack</u>, for getting advice from the community.

## Commercial social media services

- Limitations of Twitter service providers may include:
  - A focus on marketing and business intelligence, not academic research.
  - Restricted data exports, often 50K tweets per day.
  - Analytics that are "black box" and may not be fit for academic research and archiving.
- Purchasing tweets can be pricey. Price depends on number of tweets and length of the time period.

# Techniques for collection development

- Search Twitter website.
- Identify hashtags with DocNow App.
- Extract accounts from Twitter lists.
- Extract hashtags / accounts from collections.
- Rely on existing lists
  - o USNPL
  - U.S. Digital Registry (U.S. federal agencies)
  - Wikipedia
  - Ballotpedia

**Ethical considerations** 

## Social media data comes from people

- Consider impact of your work on the creator of the social media.
- Do not have creator's permission for research.
- Impact on creator is balanced against public good of your research.
- Requires judgement call.

### Social media research ethical and privacy guidelines at GW

"Participant' Perceptions of Twitter Research Ethics." Casey Fiesler, Nicholas Proferes, *Social Media + Society.* First published March 10, 2018. doi.org/10.1177/2056305118763366

## Data collecting

Be thoughtful collecting social media of:

- Vulnerable individuals (e.g., minors, social activists)
- Sensitive or harmful topics (e.g., questionable behavior, mental illness)
- Geography-based collecting

## **Publishing**

- When possible, get permission from creator for quotes from social media.
- Do not rely on anonymizing posts.
- Respect a user's deleting content.

## Data sharing

- Get familiar with platform terms of use.
  - Don't republish full datasets
  - Share in accordance with terms (e.g., tweet ids only)
  - Consider copyright
- Sharing summary statistics is usually OK.

### Documenting the Now White Paper on Ethics

- 1. Archivists should engage and work with the communities they wish to document.
- 2. Documentation efforts must go beyond what can be collected without permission from the web and social media.
- 3. Archivists should follow social media platforms' terms of service where they are congruent with the values of the communities they are attempting to document.
- 4. When possible, archivists should apply traditional archival practices such as appraisal, collection development, and donor relations to social media and web materials.

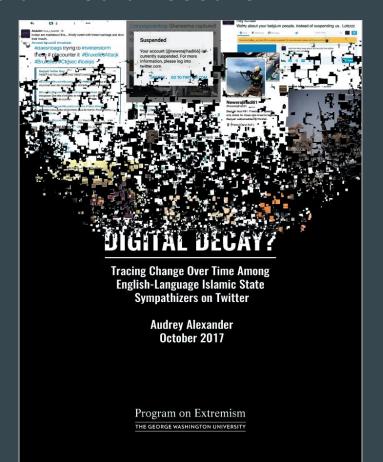
## Collecting at GW

- Performed primarily by SFM team.
- Attempt to collect on topics related to GW's research strengths.
- Have experimented collaborating with subject librarians.
- Consultations rather than self-service.
- Informed by "<u>Building Social Media Archives:</u> <u>Collection Development Guidelines</u>"

## **Example collections**

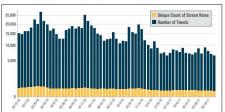
- GWU-related collecting (collecting from our own community, official accounts)
- 2016 and 2018 U.S. election:s general hashtags, Democrat hashtags, GOP hashtags, candidate accounts
- Hurricanes and natural disasters
- U.S. government accounts
- News organizations
- Climate change
- Members of Congress

### Social media research



Audrey Alexander

### Tweet Frequency and Unique Screen Names By Week



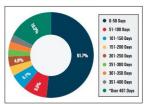
(Figure 5) This graph shows how the relationship between unique screen names and tweet frequency per week changed over the course of the 63-week period. As discussed in the method chapter, this graph, like sweral others in the study, uses square root in the y-axis to more clearly represent the relationship between the two variables.

of activity' is quantified by the number of days between an account's first and last tweet. Twitter's API does not discern the date or time at which the company suspends accounts, nor does it identify accounts that were created and then subsequently abandoned by their respective users. Consequently, this measurement allows the study to grasp the chronological span of sympathizers that actively use the platform to share content. While overwhelmingly skewed by outliers, the average lifespan for this sample of English-language pro-IS accounts on Twitter was 251 days. It is critical to note, however, that dispersion of lifespan is highly concentrated (see Figure 6). Approximately 51.7 percent of accounts did not remain active longer than 50 days. On the other hand, however, a substantive portion of accounts lasted over a year, suggesting that Twitter's attempts to detect and suspend pro-IS account may be missing some long-term users. One possible explanation for long-standing users relates to the data collection method, as researchers are more likely to identify accounts the longer they are open.13 Ultimately, accounts that opted to leave the platform are likely included in this breakdown. although multiple factors- including the threat of suspension- likely affect user activity in this regard.

In order to maintain their presence on Twitter, some English language IS sympathizers appeared to have created multiple accounts at the same time to avoid shutdowns. On February 17, 2016, for example, four separate accounts were

fashioned from a core handle," possibly from the same individual. One account (@Erhabi33) survived only eight days, whereas another account (@Erhabi39) stayed active for 62 days. Although the study attempted to annotate cases where the same individual controlled multiple accounts, as the trend is common, quantitative figures are generally not reliable due to the relative anonymity Twitter affords users. It is hard to ascertain whether users that demonstrate similar behavioral patterns are simply individuals attempting to inoculate their dieiral presence against susernious or are

### **Duration of Account Activity**



(Figure 6) This chart depicts the duration of account activity, meaning the number of days a pro-IS Twitter account was active, and displays the breakdown in percentages.

### Social media research



Research Article

Twitter Makes It
Worse: Political Journalists,
Gendered Echo Chambers,
and the Amplification of
Gender Bias

The International Journal of Press/Politics 2018, Vol. 23(3) 324–344

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### Abstract

Given both the historical legacy and the contemporary awareness about gender inequity in journalism and politics as well as the increasing importance of Twitter in political communication, this article considers whether the platform makes some of the existing gender bias against women in political journalism even worse. Using a framework that characterizes journalists' Twitter behavior in terms of the dimensions of their peer-to-peer relationships and a comprehensive sample of permanently credentialed journalists for the U.S. Congress, substantial evidence of gender bias beyond existing inequities emerges. Most alarming is that male journalists amplify and engage male peers almost exclusively, while female journalists tend to engage most with each other. The significant support for claims of gender asymmetry as well as evidence of gender silos are findings that not only underscore the importance of further research but also suggest overarching consequences for the structure of contemporary political communication.

### Keywords

political journalism, gender, Twitter, Washington journalism, beltway journalism, women in journalism

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### Populist communication by digital means: presidential Twitter in Latin America

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### ABSTRAC

In this paper, we analyze the uses of Twitter by populist presidents in contemporary Latin America in the context of the debates about whether populism truly represents a revolution in public communication - that is, overturning the traditional hierarchical model in favor of popular and participatory communication. In principle, Twitter makes it possible to promote the kind of interactive communication often praised in populist rhetoric. It offers a flattened communication structure in contrast to the topdown structure of the traditional legacy media. It is suitable for horizontal, unmediated exchanges between politicians and citizens. Our findings, however, suggest that Twitter does not signal profound changes in populist presidential communication. Rather, it represents the continuation of populism's top-down approach to public communication. Twitter has not been used to promote dialogue among presidents and publics or to shift conventional practices of presidential communication. Instead, Twitter has been used to reach out the public and the media without filters or questions, it has been incorporated into the presidential media apparatus as another platform to shape news agenda and public conversation. Rather than engaging with citizens to exchange views and listen to their ideas, populists have used Twitter to harass critical journalists, social media users and citizens. Just like legacy media, Twitter has been a megaphone for presidential attacks on the press and citizens. It has provided with a ready-made, always available platforms to lash out at critics, conduct personal battles, and get media attention.

### ARTICLE HISTORY Received 30 November 2016 Accepted 4 May 2017

KEYWORDS Social media; populism; presidential communication; political communication;

### Populism as communication style

Growing interest in the study of populism, media, and communication (Aalberg, Esser, Reinemann, Strömback, & de Vreese, 2017) inevitably confronts the long-standing fuzziness of the concept of populism. It is commonly acknowledged that 'populism' is perennially imprecise. Definitions have underscored differs aspects as essential characteristics of populism, including economic policies, style of political leadership, political discourse, and ideology (Moffit, 2016). Populism remains the subject of constant semantic squabbles, largely because it has taken various shapes across time and

# **Questions?**

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