Different Spirals of Sameness: A Study of Content Sharing in Mainstream and Alternative Media

Benjamin D. Horne, Jeppe Nørregaard, and Sibel Adali

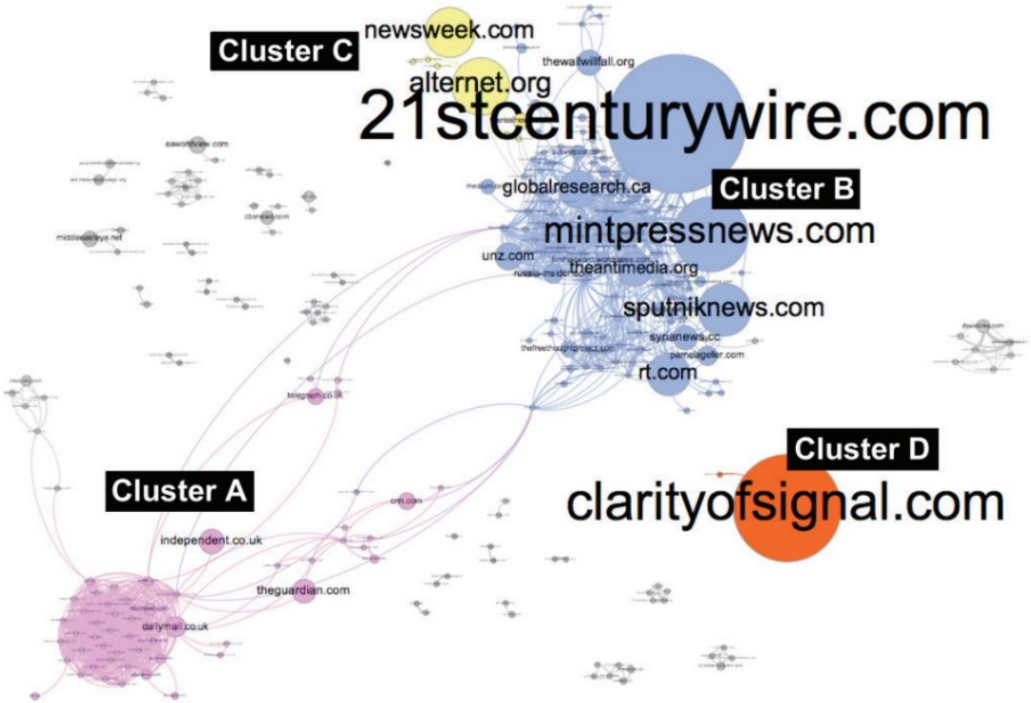
Rensselaer Polytechnic Institute, Technical University of Denmark

Primary focus of this work is on content sharing in alternative media

- Content sharing - one news producer publishes (or copies) an article published by another source
- While it is a fairly common practice in MSM, it is a lesser studied tactic by disinformation producers to get their message across
- Just as bot-driven misinformation, content sharing can be used to:
  - Make particular stories or narratives seem more important,
  - More widely reported,
  - Thus, more credible.
- If we can understand the dynamics of this tactic, we can use the behavior of these producers to better inform readers or algorithms.

Starbird et al. 2018 “Ecosystem or Echo-System?”

- First look at content sharing in alternative media, as a malicious tactic
- The paper focused on spreading alternative narratives about Syrian Civil Defense
- Build an undirected network of shared content to illustrate the narratives spread
- Used a mix-method approach to analyze the data



- “[G]overnment-funded media and geopolitical think tanks as source content for anti-White Helmets narratives.”
- Alternative media ecosystem often shared explicit critiques of MSM
- “[S]mall set of websites and authors generating content that is spread across diverse sites”

Starbird, Kate, et al. "Ecosystem or Echo-System? Exploring Content Sharing across Alternative Media Domains." *Twelfth International AAAI Conference on Web and Social Media*. 2018.

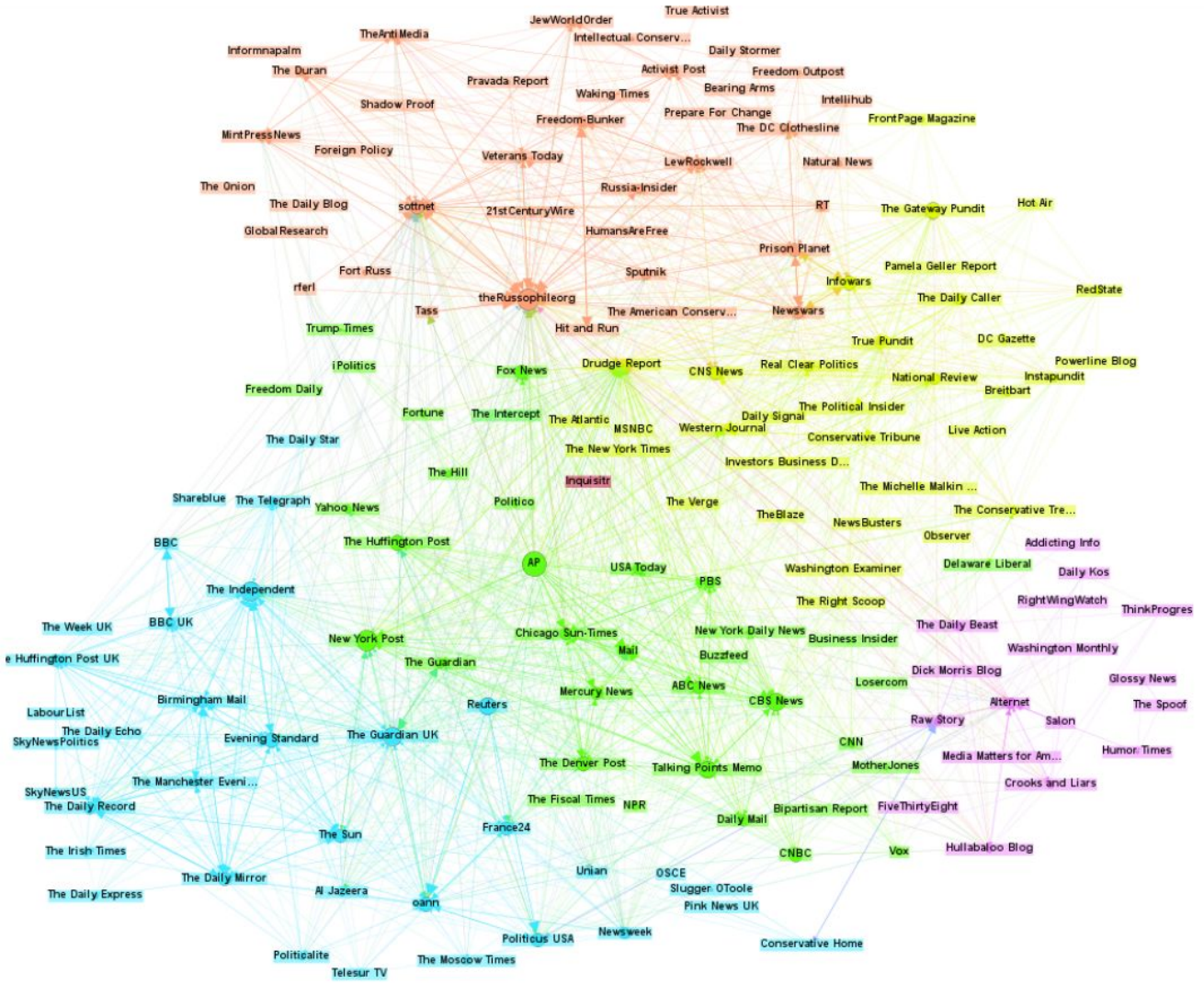
Similar exploratory study across more time and events

- We live scrape news sites RSS feeds for **10 months** twice a day, everyday **(Feb 2018 to November 2018)**
- This live scraping allows us to get almost every published article by each source
- A broad spectrum of sources are collected, including both mainstream and alternative sources **(194 total sources)**
- Focuses broadly on politics, but covers many events
- In total we analyze **713K news articles**

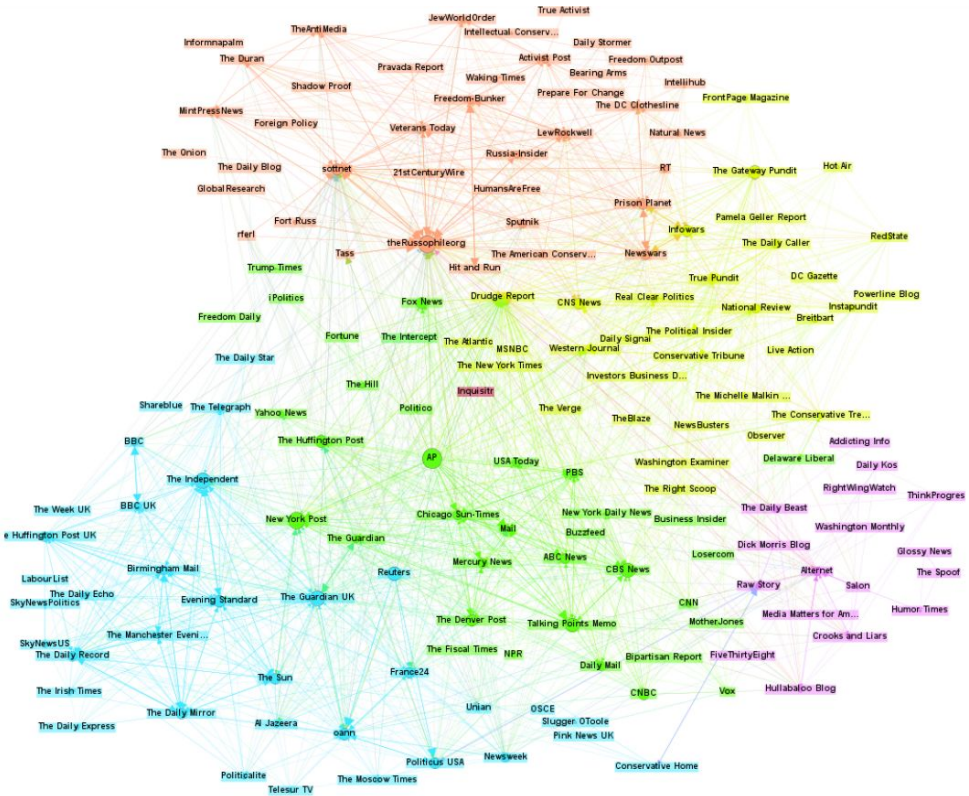
Come to our poster session to here more about the data!

Using this data, we construct a verbatim copy network

1. TFIDF matrix for each 5 day period in the dataset, for each pair of article vectors, compute the cosine similarity, choose article pairs with cosine similarity of 0.85.
2. For each pair, we order them by the UTC timestamp, as to create directed edges from the original article to the copied article.
3. We manually verify pairs, to ensure there are not mistakes due to incorrect timestamps

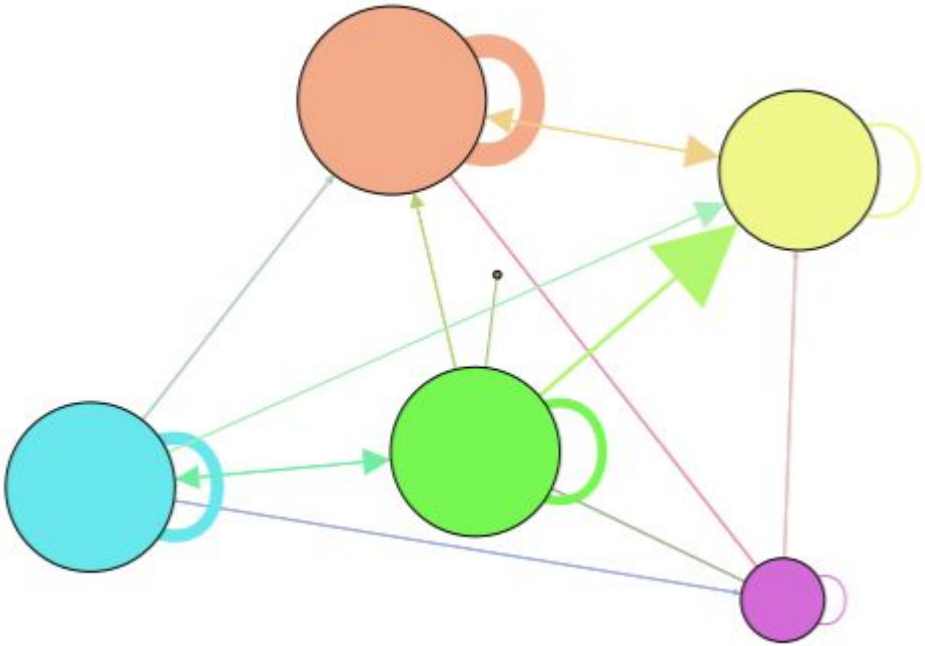

True Activist
JewWorldOrder
TheAntiMedia
Intellectual Conserv...
Informnapalm
Daily Stormer
The Duran
Activist Post
Freedom Outpost
Pravada Report
Bearing Arms
Waking Times
Intellihub
Shadow Proof
Prepare For Change
Freedom-Bunker
FrontPage Magazine
The DC Clothesline
MintPressNews
Foreign Policy
Veterans Today
LewRockwell
Natural News
The Onion
Russia-Insider
The Daily Blog
sottnet
21stCenturyWire
RT
The Gateway Pundit
Hot Air
Global Research
HumansAreFree
Prison Planet
Fort Russ
Sputnik
Pamela Geller Report
rferl
Infowars
theRussophileorg
The Daily Caller
RedState
Tass
The American Conserv...
Newswars
Trump Times
Hit and Run
True Pundit
DC Gazette
iPolitics
Fox News
Drudge Report
CNS News
Real Clear Politics
Powerline Blog
National Review
Instapundit
Freedom Daily
Breitbart
Fortune
The Intercept
The Atlantic
The Political Insider
Daily Signal
MSNBC
Western Journal
Live Action
The Daily Star
Conservative Tribune
The New York Times
Investors Business D...
The Hill
Inquisitr
The Michelle Malkin ...
Shareblue
The Telegraph
Politico
The Verge
The Conservative Tre...
Yahoo News
TheBlaze
NewsBusters
Observer
BBC
The Huffington Post
Addicting Info
AP
USA Today
Washington Examiner
Delaware Liberal
Daily Kos
PBS
The Independent
The Right Scoop
RightWingWatch
ThinkProgres
BBC UK
The Week UK
Chicago Sun-Times
New York Daily News
The Daily Beast
New York Post
Business Insider
Mail
Washington Monthly
e Huffington Post UK
The Guardian
Buzzfeed
Dick Morris Blog
Losercom
Glossy News
Mercury News
ABC News
Birmingham Mail
Reuters
CBS News
Alternet
The Spoof
LabourList
Raw Story
Salon
The Daily Echo
Evening Standard
The Guardian UK
SkyNewsPolitics
CNN
Humor Times
The Denver Post
Talking Points Memo
MotherJones
Media Matters for Am...
The Manchester Eveni...
Crooks and Liars
SkyNewsUS
The Fiscal Times
NPR
The Daily Record
Bipartisan Report
FiveThirtyEight
Daily Mail
France24
The Sun
The Irish Times
CNBC
Vox
Hullabaloo Blog
Unian
OSCE
The Daily Mirror
Slugger OToole
Al Jazeera
The Daily Express
oann
Pink News UK
Politicus USA
Newsweek
Conservative Home
Politicalite
The Moscow Times
Telesur TV

Content sharing communities represent distinct parts of the media



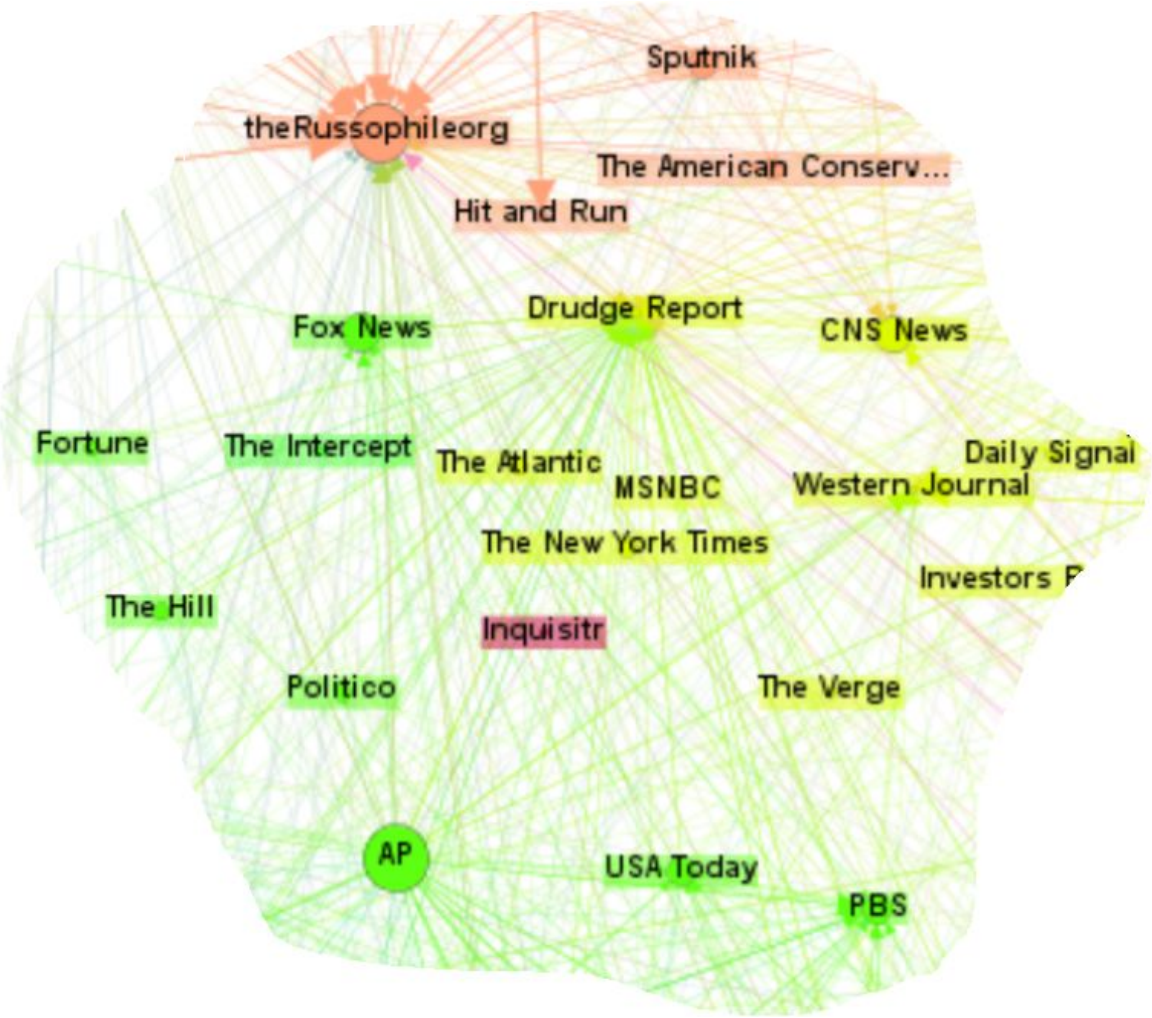
- **O** Russian/conspiracy community
- **Y** Right-wing/conspiracy community
- **G** U.S. mainstream community
- **M** Left-wing blog community
- **C** U.K. mainstream community

Echo Chambers & Content Mixing

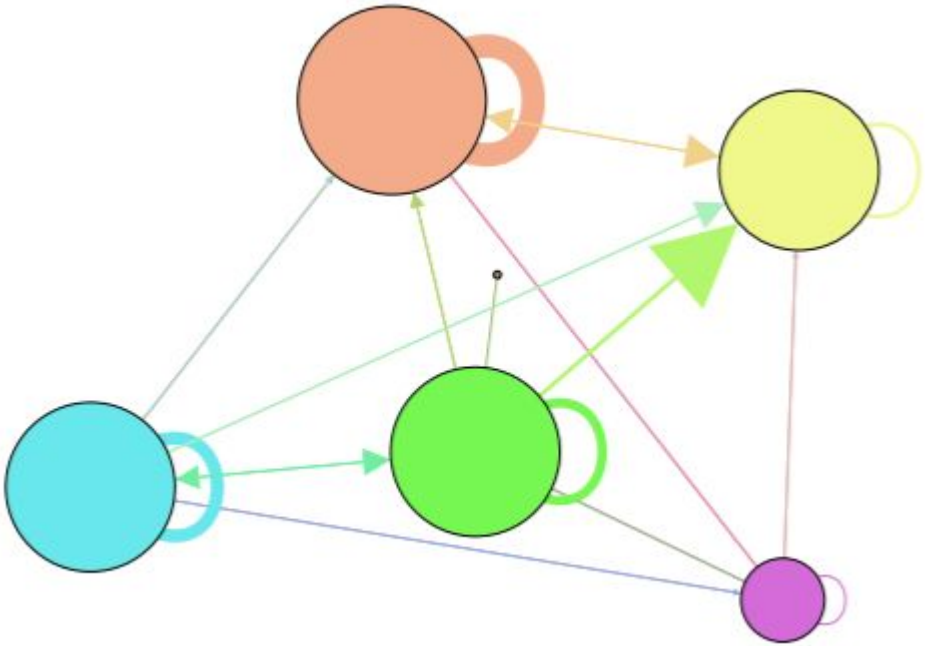


- **O** Russian/conspiracy community
- **Y** Right-wing/conspiracy community
- **G** U.S. mainstream community
- **M** Left-wing blog community
- **C** U.K. mainstream community

	O	Y	G	M	C
O	13395	1762	484	102	334
Y		2133	2477	225	872
G			5405	66	1480
M				266	323
C					7448

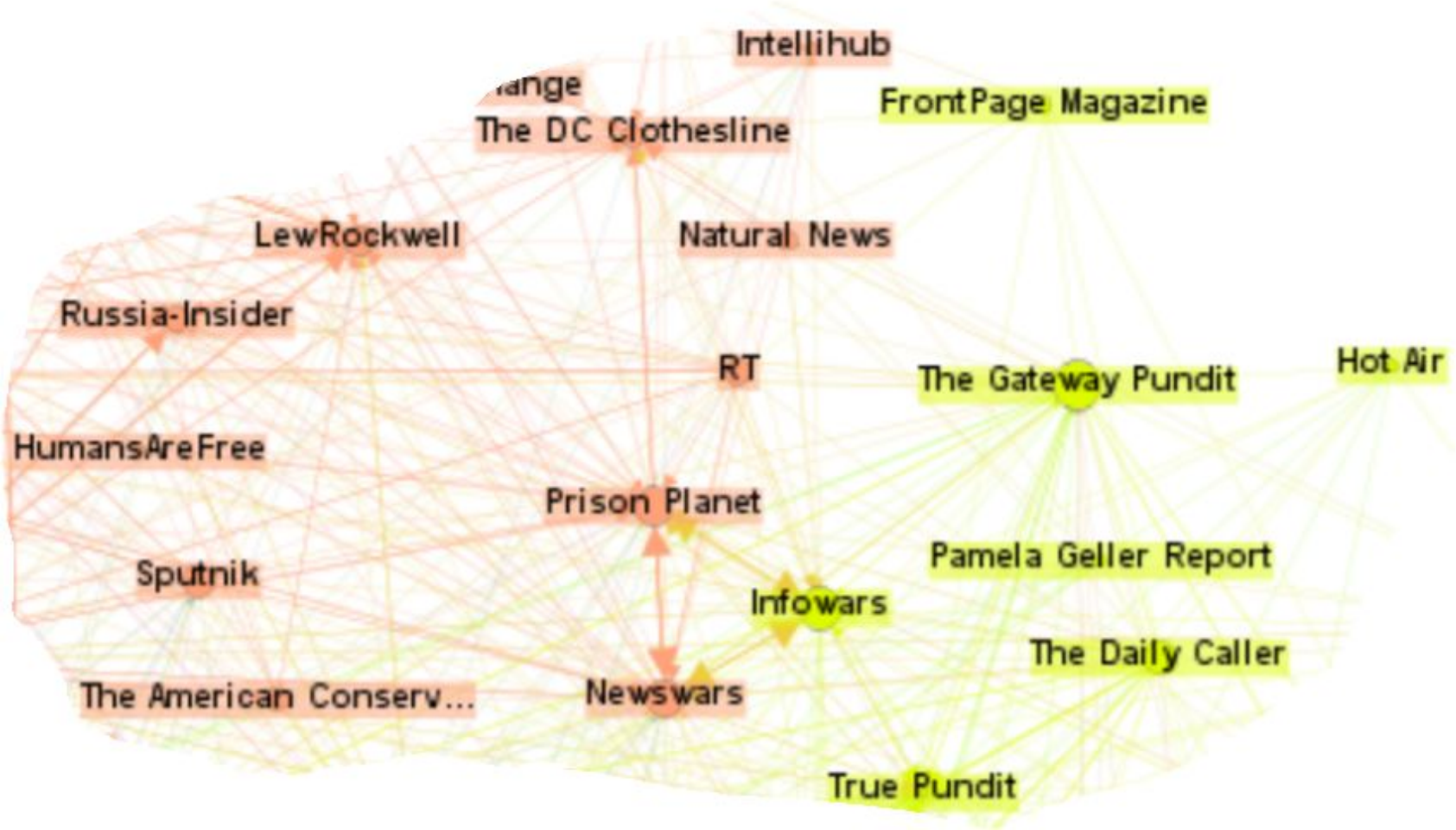


- 2038 of the 2477 articles copied from the green to yellow are by The Drudge Report
- 160 of these articles are copied by Western Journal.
- **Drudge had 138.34M visits in December 2018**
- **CNN had 497.01M visits in December 2018**



- **O** Russian/conspiracy community
- **Y** Right-wing/conspiracy community
- **G** U.S. mainstream community
- **M** Left-wing blog community
- **C** U.K. mainstream community

	O	Y	G	M	C
O	13395	1762	484	102	334
Y		2133	2477	225	872
G			5405	66	1480
M				266	323
C					7448


Intellihub
FrontPage Magazine
The DC Clothesline
LewRockwell
Natural News
Russia-Insider
RT
The Gateway Pundit
Hot Air
HumansAreFree
Prison Planet
Pamela Geller Report
Sputnik
Infowars
The Daily Caller
The American Conserv...
Newswars
True Pundit

Competing Narratives

- News articles are not shared (verbatim or partial) across communities, but the event or topic often is.
- Completely different articles are written based on the same event and are published in several different news communities
- Ultimately creating various narratives around a broad event
- These competing narratives are often repeatedly shared in the alternative news communities, sometimes multiple times by the same source
- Very similar to the competing narrative behavior surrounding the role of the Syrian Civil Defence (Starbird et al. 2018)

- Reuters - Kavanaugh accuser agrees to testify in Senate hearing - verbatim copied by OANN. - partially copied by NPR, CBS News, USA Today, Fortune, Mother Jones, Politicus USA, and The Russophile.

- AP - Kavanaugh accuser commits to hearing - copied verbatim by Mail, Drudge Report - copied partially by PBS, The Denver Post, ABC News, Mercury News, and The Independent.

- Natural News - BOMBSHELL Christine Blasey Fords letter to Sen Dianne Feinstein revealed to be a total FAKE - copied verbatim by The D.C. Clothesline and The Russophile
- Natural News - Kavanaugh accuser Christine Blasey Ford ran mass hypnotic inductions of psychiatric subjects - copied verbatim by The Russophile - copied partially by HumansAreFree.
- The Gateway Pundit - Christine Blasey Fords High School Yearbook Was Scrubbed to Hide Culture of Racism Binge Drinking - copied partially by Natural News, The Right Scoop, True Pundit, The Russophile, and Sign of the Times (sottnet).

- Hot Air - Hmmm Ford hires former Clinton Biden adviser as potential hearing sherpa as attorneys bargain for - copied partially by The Gateway Pundit and Sign of the Times (sottnet)
- The Gateway Pundit - Far Left Activist and Kavanaugh Accuser Christine Blasey Ford Spotted at Anti-Trump March in LA VID - copied partially by The Political Insider and True Pundit.
- The Gateway Pundit - Christine Blasey Fords Complete List of Lies and Misrepresentations Related to Judge Kavanaugh - copied partially by LewRockwell, The Russophile.
- The Gateway Pundit - Women Support Judge Brett Kavanaugh Criticize Accuser Dr Christine Blasey Ford - copied partially by Prison Planet and The Daily Caller.

Counter-narratives (Justifying long-standing narratives)

- The Guardian published a story alleging that Paul Manafort, former campaign manager to President Donald Trump, held a secret meeting with Julian Assange, the founder of Wikileaks, inside the Ecuadorian embassy.
- The story was criticized by other well reputed sources for:
  - Relying on anonymous sources,
  - Not providing any verifiable details
  - Being unbelievable given the high level of surveillance in the area surrounding the embassy
- The story was edited by The Guardian multiple times within five hours, weakening the language surrounding the claims
- The story remains unverified
- Yet, The Guardian has not retracted the article or demonstrated any further investigation to verify the report

- The Guardian - Manafort held secret talks with Assange in Ecuadorian embassy sources say - copied verbatim by Drudge Report and The Russophile - copied partially by Alternet, Daily Kos, Crooks and Liars, Raw Story, CNN, The Huffington Post, Yahoo News, Mother Jones, Chicago Sun-Times, The Hill, USA Today, Mail The Independent, Politicus USA, Hot Air, and MSNBC.

- Natural News - The Guardian caught publishing completely fake news - copied partially by The Duran
- The Gateway Pundit - Guardian Stealth Edits Junk Report to Save Their Ass After Assange-Manafort Fiction Crumbles - copied verbatim by Prison Planet and Newswars.
- The Gateway Pundit - IT WAS A HOAX Guardian Report Blows Up Manafort Passport Shows NO UK TRIPS Never Met with Assange
- Russia-Insider - Greenwald Goes Ballistic on Politicos Theory That Guardians Assange-Manafort Story Was Planted - copied verbatim by Mint Press News, The Russophile, Sign of The Times (sott.net)

- 21stCenturyWire - Wikileaks Rips Guardians Manafort-Assange Report by Serial Fabricator Offers Million Dollar Challenge - copied verbatim by The Russophile
- Sputnik - As Guardians Manafort-Assange Story Exposed as Fake Ex-CIA Agent Blames Russia
- True Pundit - The Guardian Faceplants As Manaforts Passport Stamps Dont Match Fabricated Assange Story
- Daily Stormer - Manafort DID NOT Visit Julian Assange The Guardian Made it All Up
- LewRockwell - The Assange-Manafort Fabricated Story - copied verbatim by The Russophile and Sign of The Times (sott.net).
- Natural News - WOW The Guardian reporters of bogus Manafort-Assange meetings accused of faking stories about WikiL - copied partially by Mint Press News,

Small breach of journalistic standards can make it uncertain who to trust

- At the surface level, these articles seem to be pushing the standard conspiracy narrative that “the mainstream media is the fake media,”
- Ultimately takes power away from the proper news and gives power to conspiracy theorist
- Due to limited attention and information overload, this small breach may be enough to erode trust

In Conclusion

1. We find that content sharing happens in tightly formed communities, and these communities represent relatively homogeneous portions of the media landscape
2. We discover mainstream and conspiracy content mixing by several highly read sources in the right-wing community (ex. Drudge Report)
3. We find that alternative news sources repeatedly share content about competing contemporaneous narratives

Thanks to my Co-authors Jeppe and Sibel

I am on the job market!

Twitter: @benjamindhorne

Extending to Partial Content Sharing

- Extend to partial content sharing by utilizing methods from plagiarism detection
- “Winnowing” - combination of hashing and windowing to create fingerprints for text (Schleimer, Wilkerson, and Aiken 2003)
- This method is only used to extend paths in qualitative analysis, not build a new network

Content sharing among journalistic organizations is well known

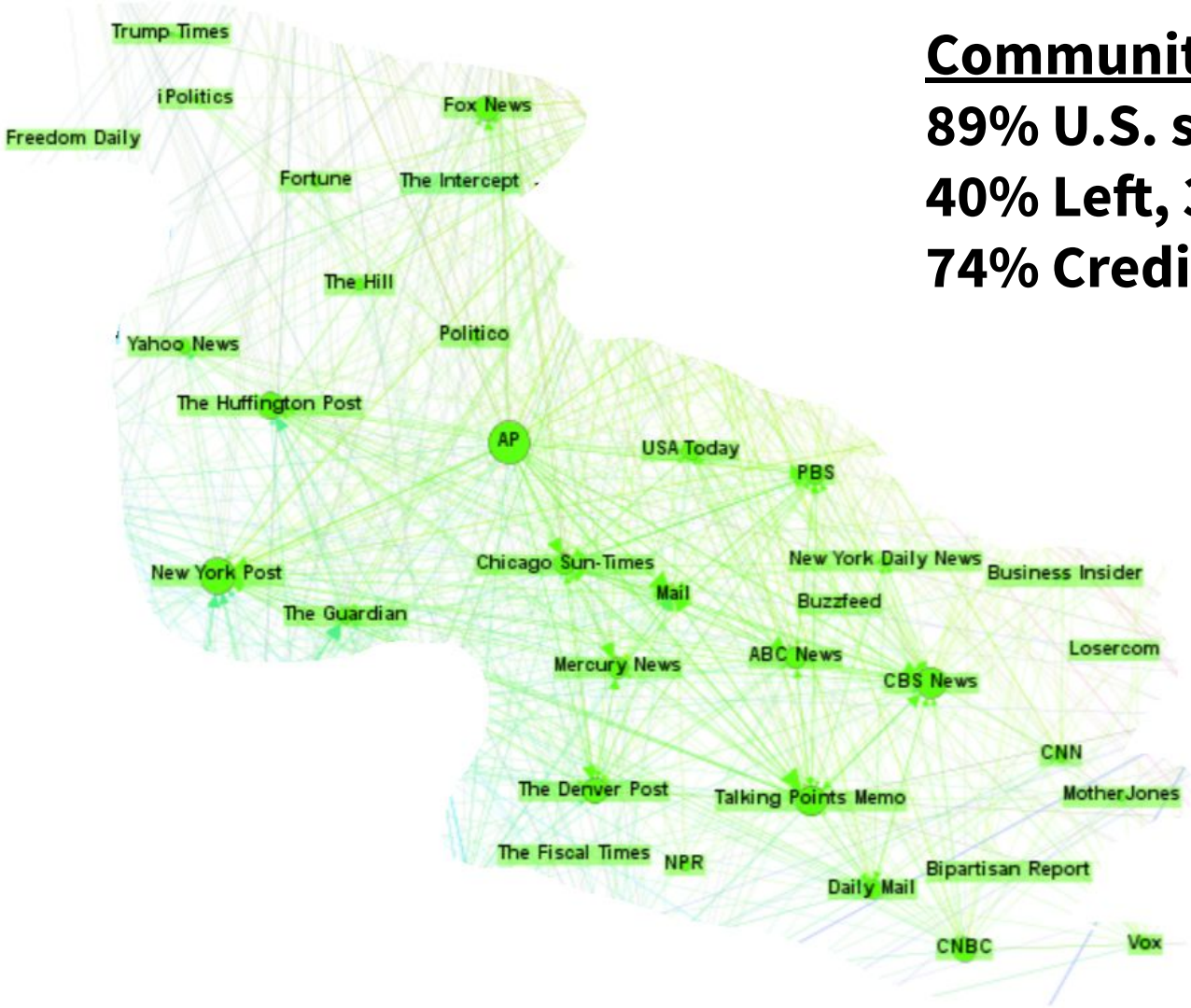
- Long line of work in communications, typically focused on imitation in order to meet demand and be competitive
- This imitation behavior has been discussed as early as 1955, **“many newspapers feature the same news stories atop their front pages”** (Breed 1955)
- Various reasons for this behavior have been argued:
  - Popularity of the internet
  - Reading news during the work day rather than the ends of days
- Primary concern: news has become homogeneous and significantly less diverse, representing less views and covering less events

Today this homogenized view of the news has been complicated by “alternative” media

- The rise of false, hyper-partisan, and propagandist news producers has created a media environment where:
  - Competing narratives around the same event (Starbird 2017)
  - No gatekeepers to curate quality information (Reese et al. 2009; Allcott and Gentzkow 2017)
  - Add 1 more here
- More diverse news, but lower quality
- Due to this, research has shifted to
  - Detecting low quality information
  - Understanding tactics used to spread low quality information (headline structure, social bots, etc.)

We characterize these communities by using multiple expert labeling systems

1. Credibility -
    a. **NewsGuard** - a group of trained journalists to assess credibility and transparency of news websites. NewsGuard assesses nine journalistic criteria which are combined into a good or bad
    b. **Media Bias/Fact Check** - analyzes news sources to determine their credibility using trained team for factuality
    c. We combine their factual-reporting score with NewsGuard's credibility label, for a final label of source reliability
2. Political Leaning -
    a. **Media Bias/Fact Check** - MBFC provides a descriptive label for sites, which often includes the source's political bias across the political spectrum
    b. **Buzzfeed hyperpartisan list** - list hyper-partisan sites with binary left or right label
    c. We aggregate a bias score for each source by normalizing each rating from -1 (left) to 1 (right)
3. Country - manually check the country of origin of each source if known

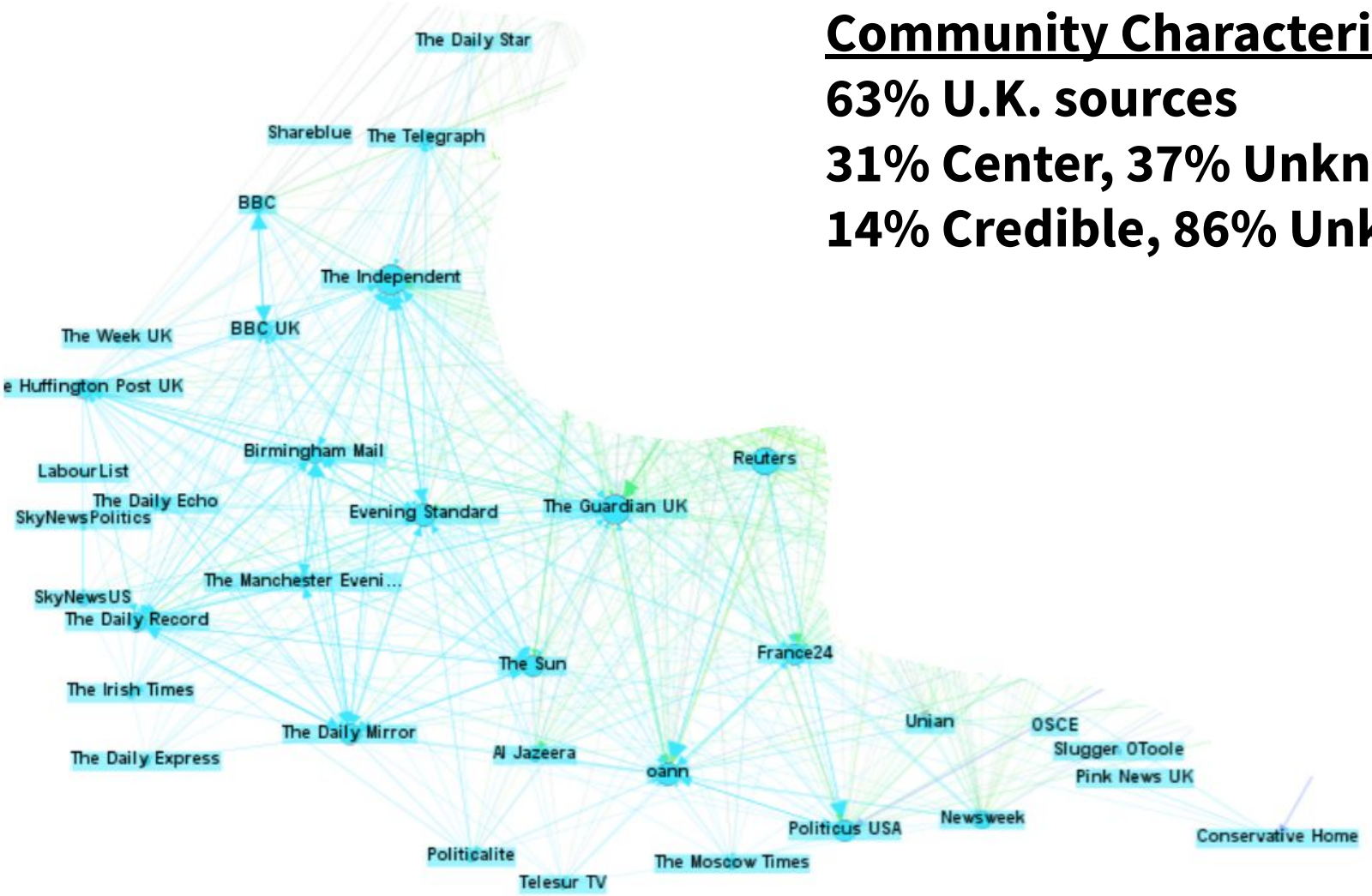


Community Characteristics:

89% U.S. sources

40% Left, 34% Center

74% Credible



Community Characteristics:

63% U.K. sources

31% Center, 37% Unknown

14% Credible, 86% Unknown

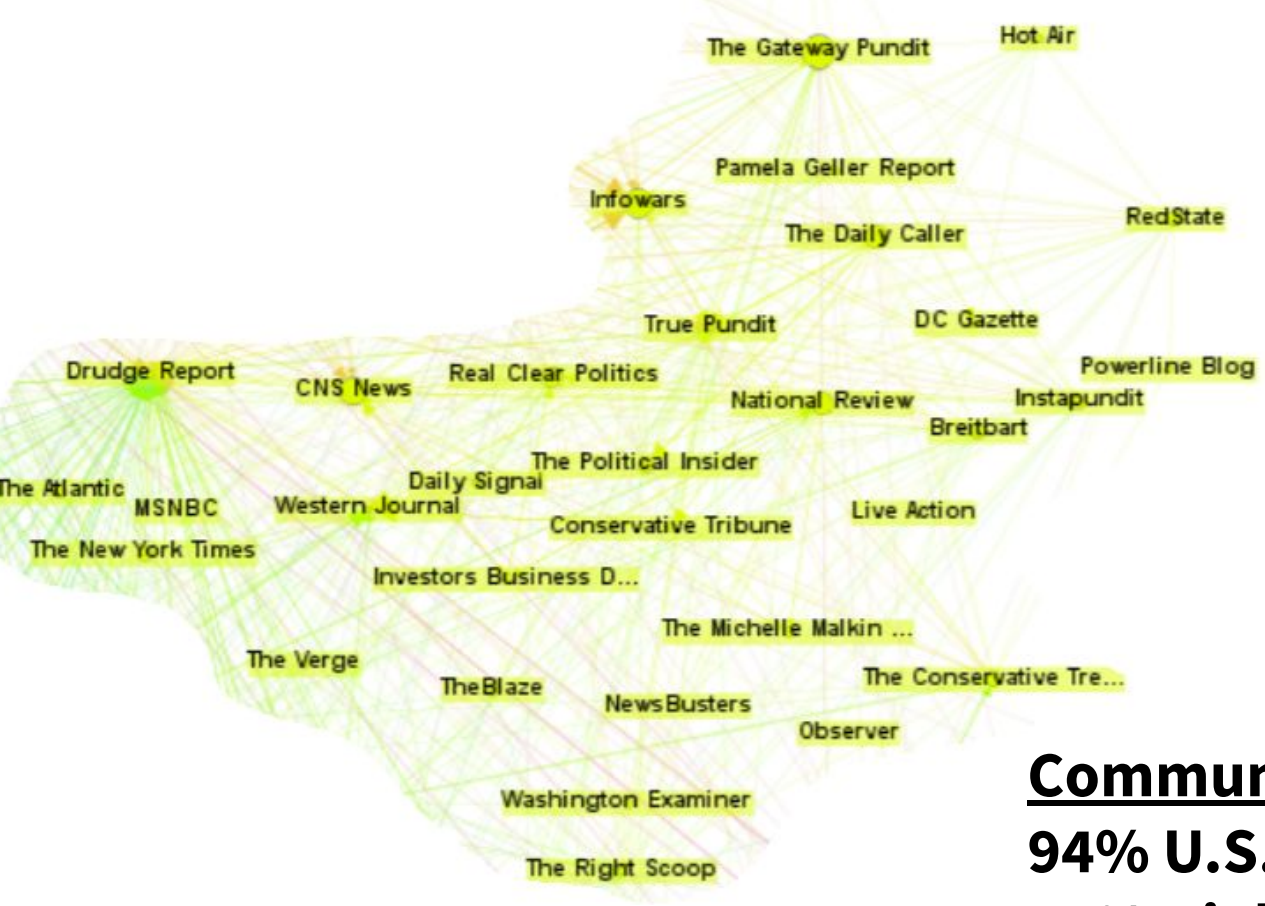
<u>Community Characteristics:</u>

94% U.S. sources

31% Center, 37% Unknown

47% Credible, 53% Unknown

Small size is not due to imbalance in data, but less verbatim copying done by this community



Community Characteristics:

94% U.S. sources

70% Right, 15% Unknown

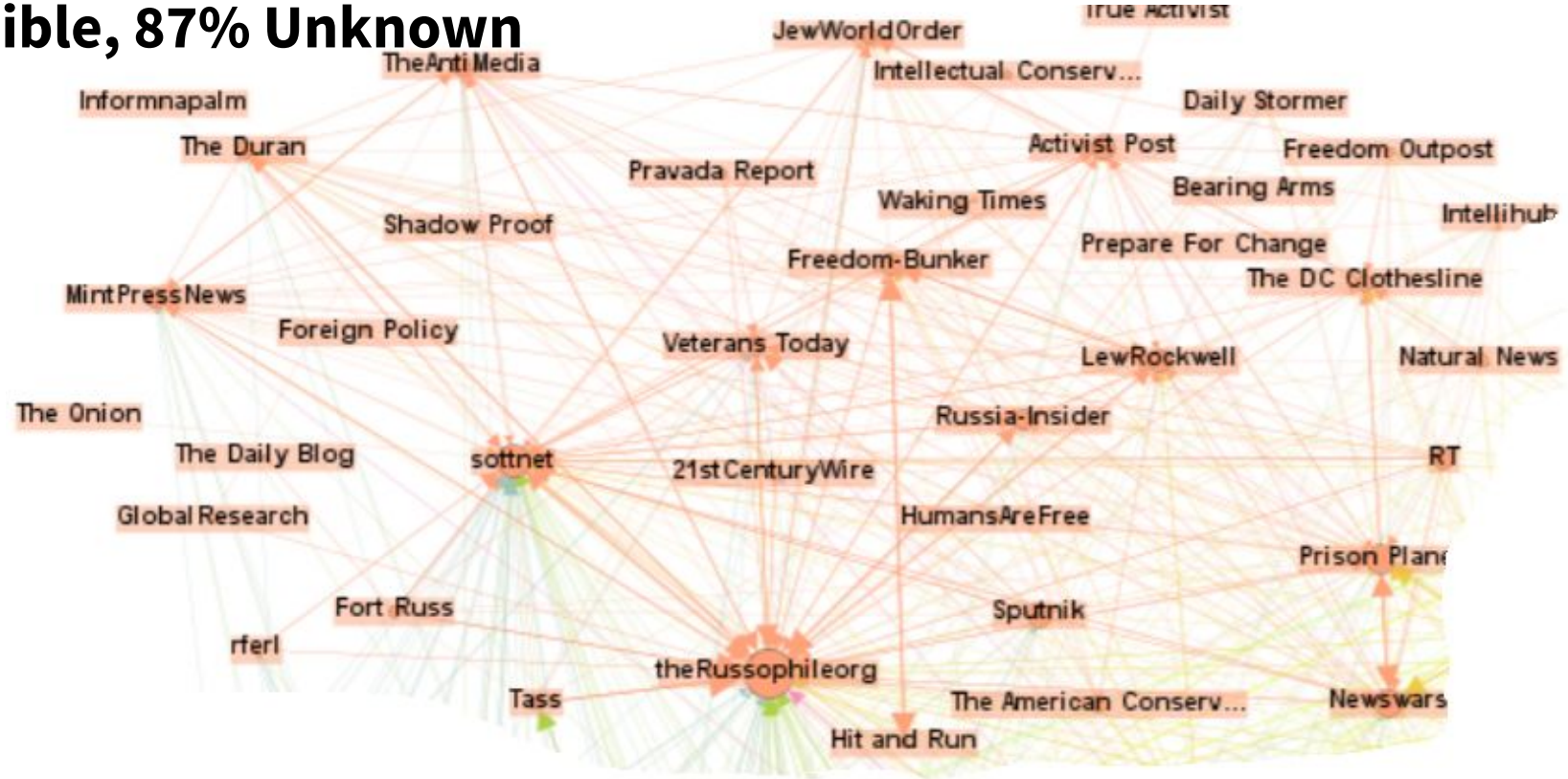
27% Credible, 57% Unknown

Community Characteristics:

54% U.S. sources, 21% Russian

10% Right, 62% Unknown

8% Credible, 87% Unknown



Using these communities, we perform a mixed-method analysis

1. Echo Chambers
2. Content Mixing
3. Competing Narratives
4. Counter Narratives