Beyond "Bots" and "Trolls": Understanding Disinformation as Collaborative Work

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Office of Naval Research



Information War

Political Propaganda

Misinformation

Hybrid War

Fake News

Information Disorder

Information Operations

Active Measures

Asymmetric Warfare

disinformation

disinformation

Stumbling down

rabbit hole

of

disinformation

Goals for this talk

- 1. Define and contextualize disinformation.
- 2. Demonstrate through a few examples how online disinformation works.
- 3. Correct some misperceptions and add some nuance.
- 4. Discuss implications for technology and research.

Misinformation vs. Disinformation

Difference is one of intent

Misinformation vs. Disinformation

Carolyn Jack's Lexicon of Lies (2017):

"Disinformation is information that is deliberately false or misleading"

dezinformatsiya

dezinformatsiya

Informed by work from Lawrence Martin-Bittman (Lladislav Bittman):

Disinformation is a suite of tactics applied by influence agents as part of "active measures" to manipulate information spaces to achieve strategic, political objectives

Three Case Studies of Online Disinformation

Theoretical Perspective

Disinformation as Collaborative Work Applying a Socio-Technical Perspective

Methodological Approach

Grounded, Interpretative, Mixed Methods Expanding from Methodological Innovation in Crisis Informatics

Kathy Charmaz. 2014. Constructing Grounded Theory. Sage, Thousand Oaks, CA.

Leysia Palen and Ken Anderson. 2016. Crisis informations - New data for extraordinary times. Science.

Three Case Studies of Online Disinformation

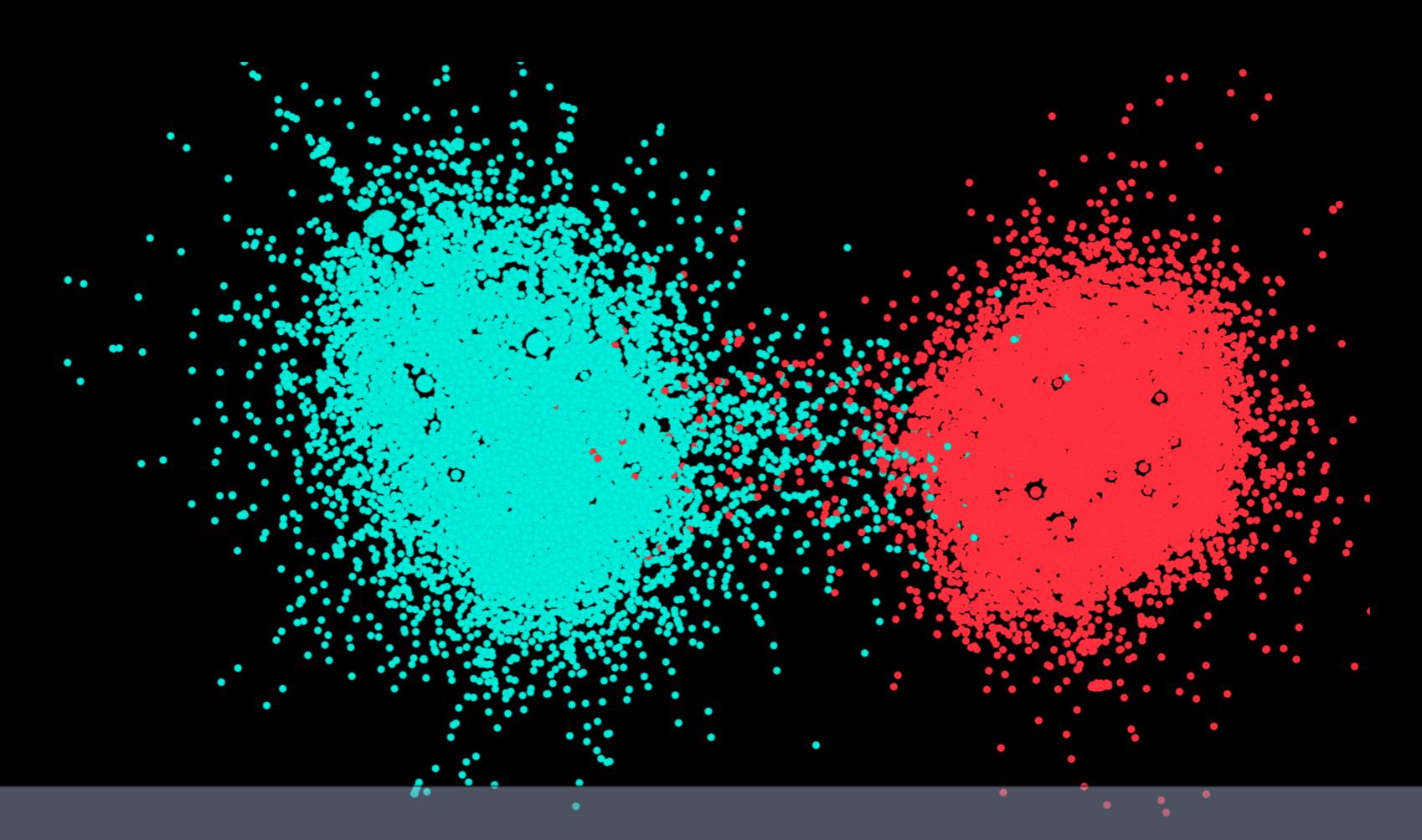
Leo G. Stewart, Ahmer Arif, A. Conrad Nied, Emma S. Spiro, and Kate Starbird. (2017). Drawing the Lines of Contention: Networked Frame Contests Within #BlackLivesMatter Discourse. *PACMHCI. 1, CSCW, Article 122* (November), 23 pages.

Leo G. Stewart, Ahmer Arif, and Kate Starbird. (2018). Examining Trolls and Polarization in a Retweet Network. *MIS2 Misinformation and Misbehavior Mining on the Web.* Workshop help in conjunction with WSDM 2018. Feb 9, 2018.

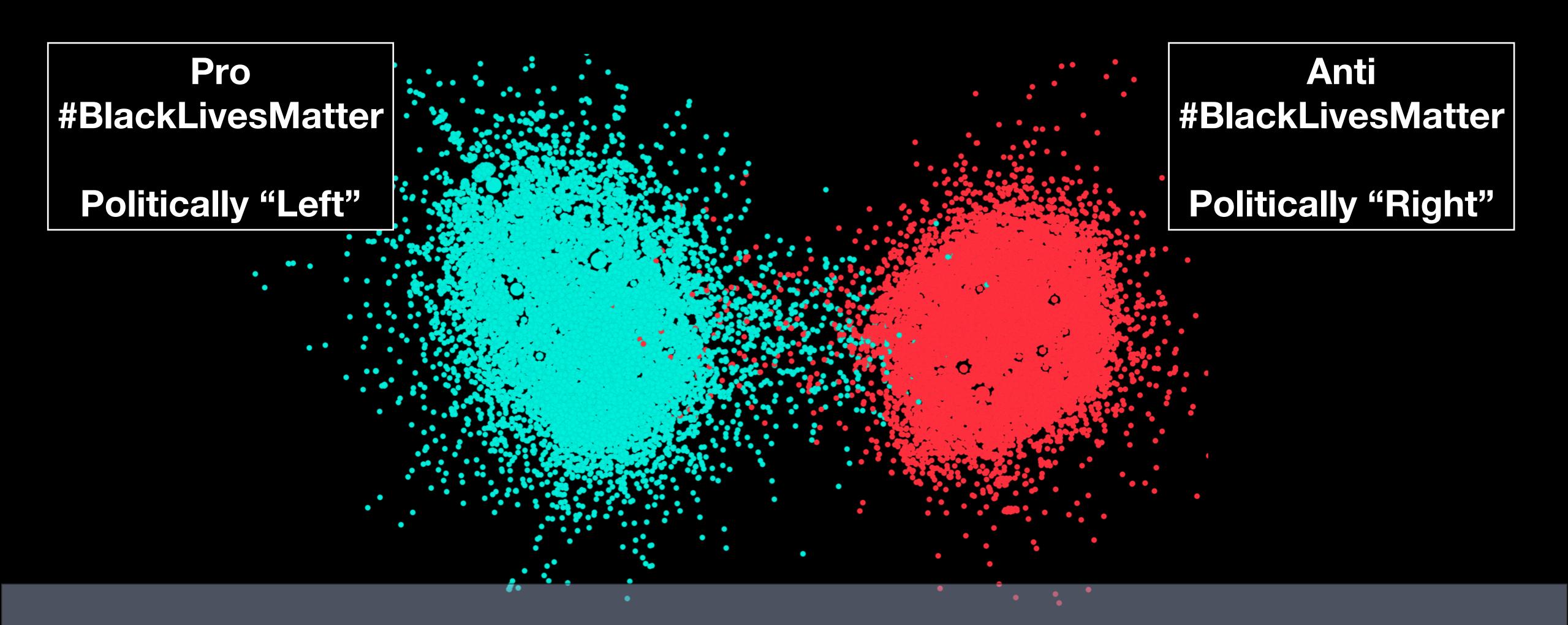
Ahmer Arif, Leo G. Stewart, and Kate Starbird. (2018). Acting the Part: Examining Information Operations within #BlackLivesMatter Discourse. *PACMHCI. 2, Computer-Supported Cooperative Work (CSCW 2018). Article 20.*

Kate Starbird, Ahmer Arif, and Tom Wilson, (2019). Disinformation as Collaborative Work: Surfacing the Participatory Nature of Strategic Information Operations. Submitted to PACMHCI. 3, Computer-Supported Cooperative Work (CSCW 2019). Article 127

Retweet Network Graph 2016 Shooting + #BlackLivesMatter/#BlueLivesMatter tweets

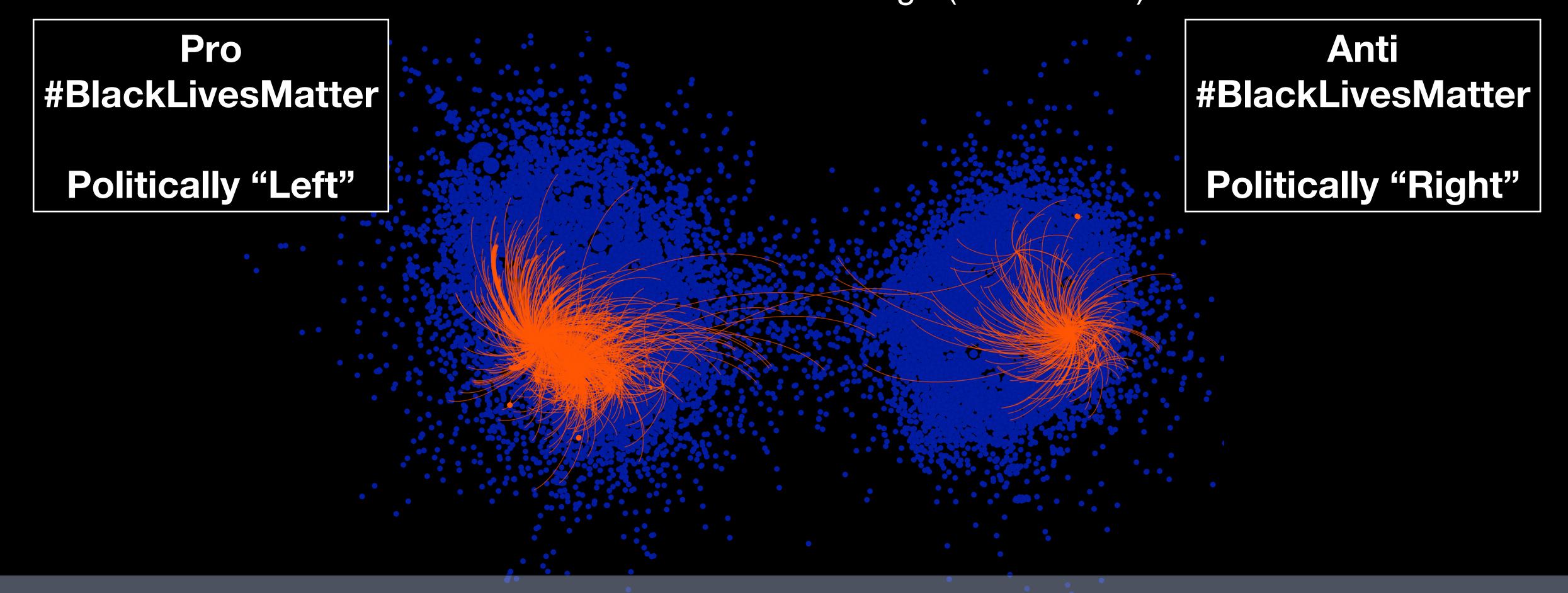


Retweet Network Graph 2016 Shooting + #BlackLivesMatter/#BlueLivesMatter tweets

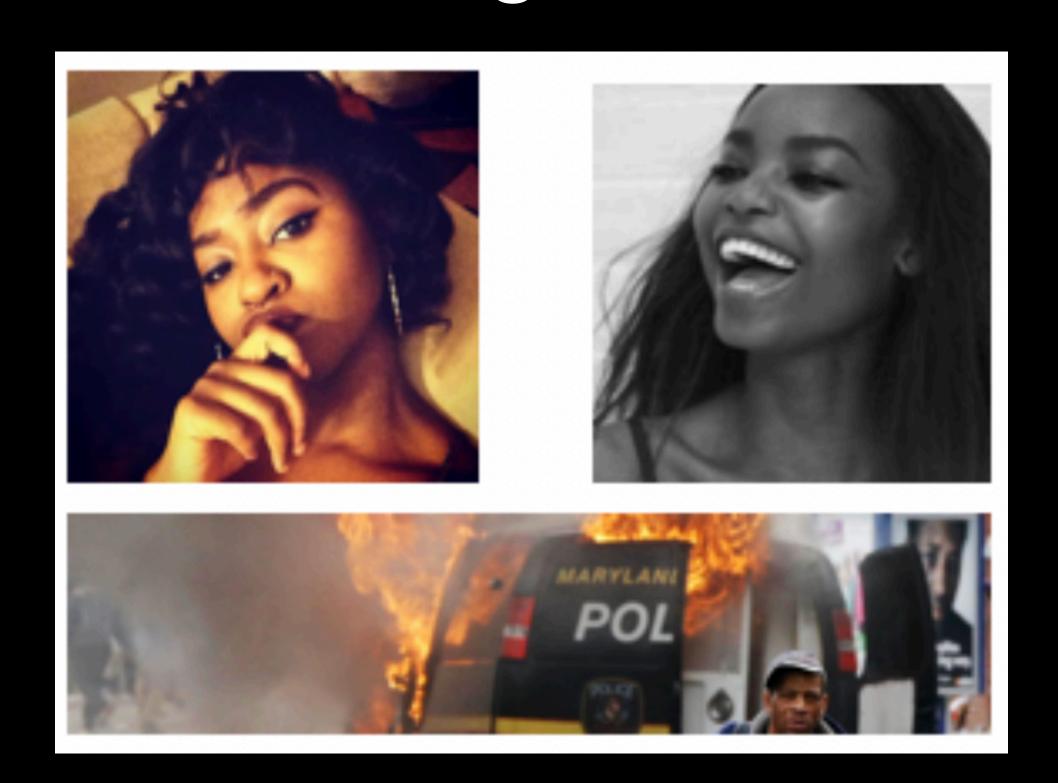


Retweet Network Graph

2016 Shooting + #BlackLivesMatter/#BlueLivesMatter tweets RU-affiliated accounts in orange (w/ retweets)

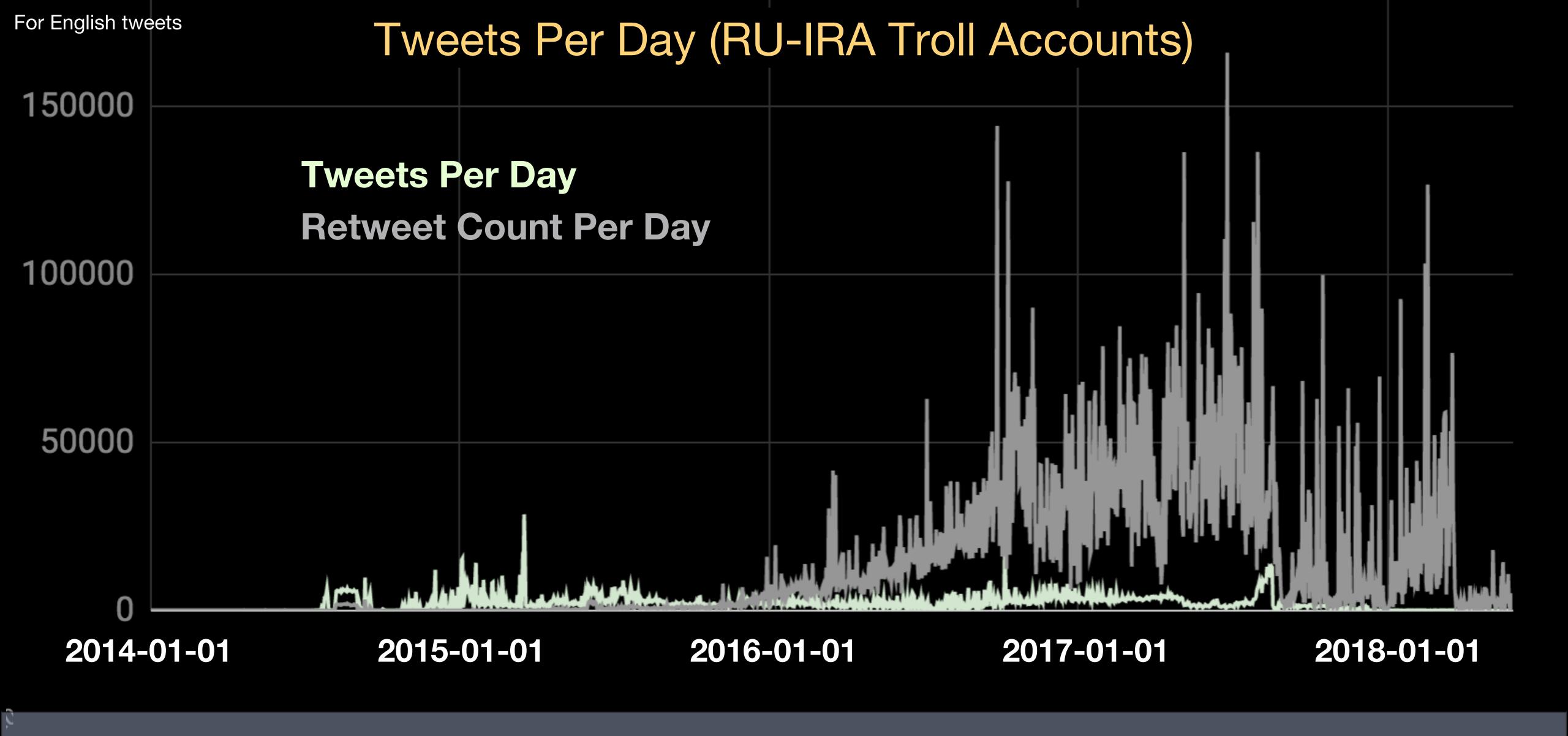


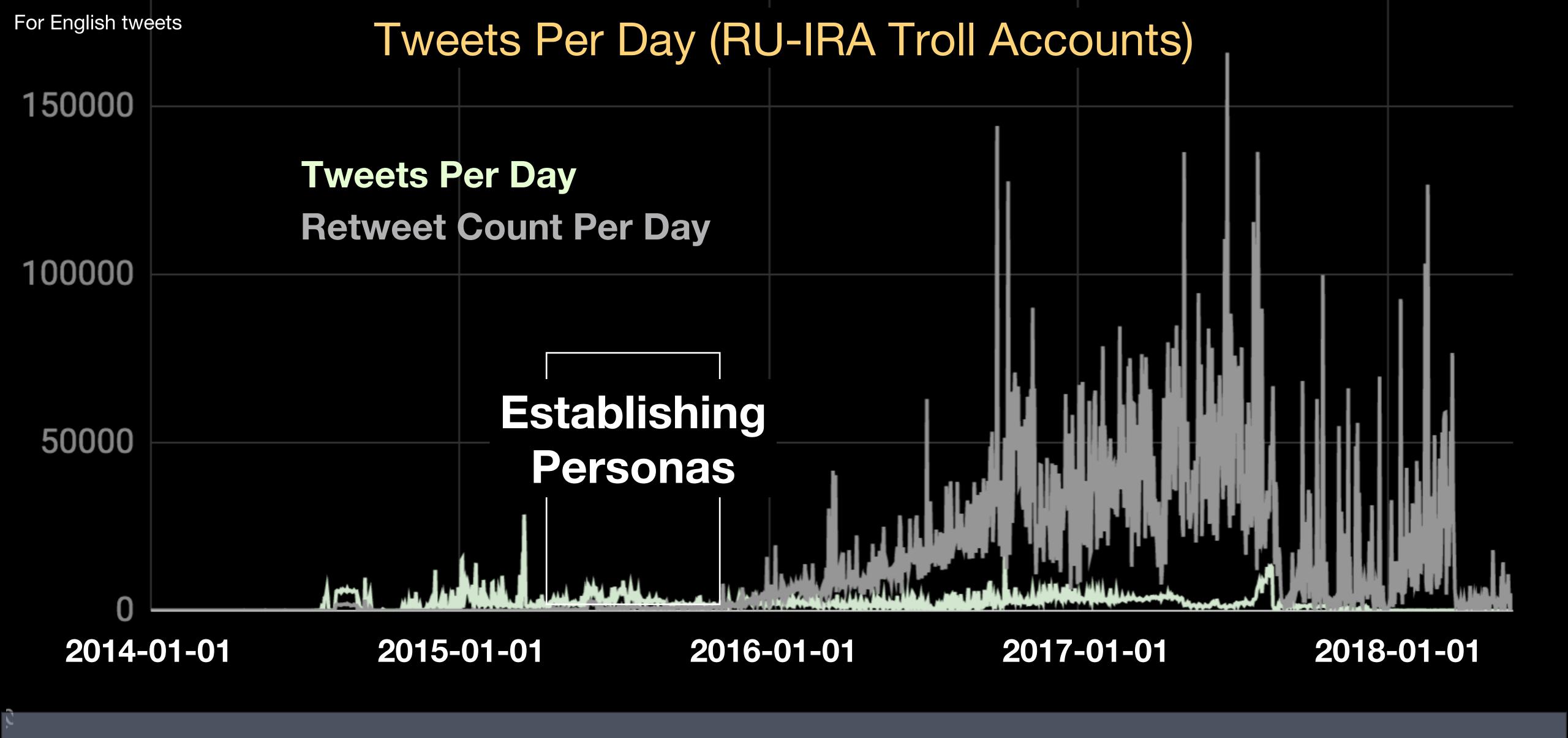
Enacting Caricatures of Political Personas



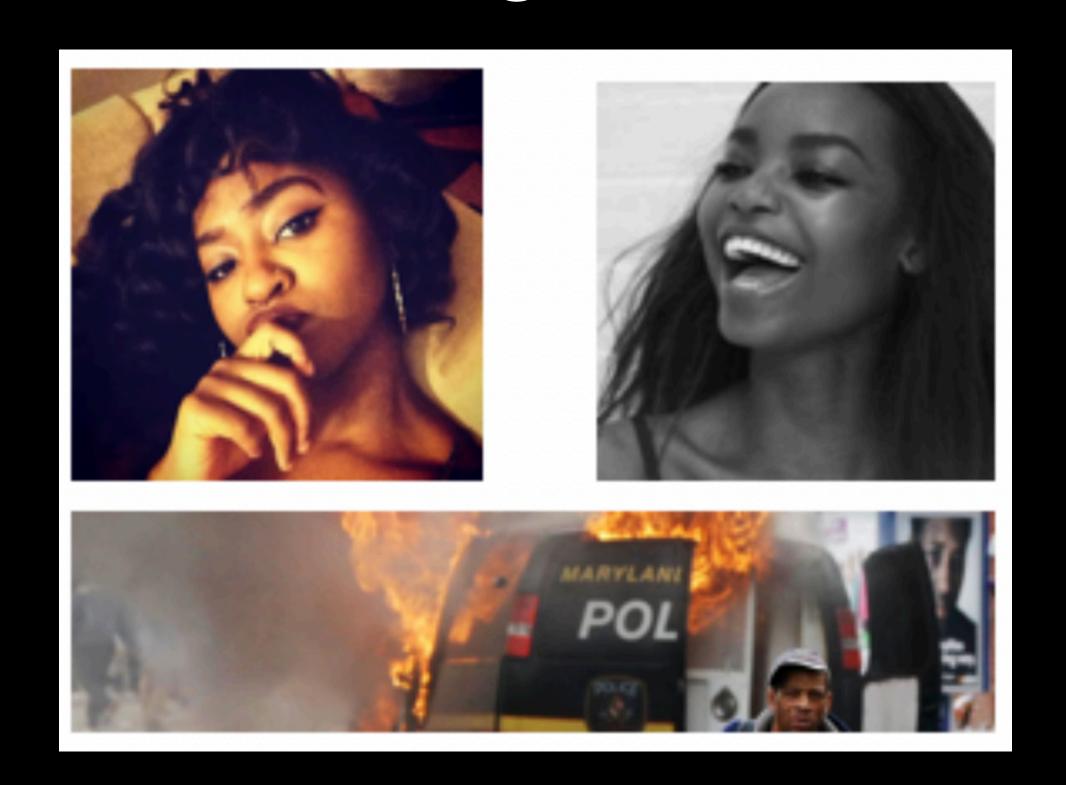


Ahmer Arif, Leo G. Stewart, and Kate Starbird. (2018). Acting the Part: Examining Information Operations within #BlackLivesMatter Discourse. *PACMHCI. 2, Computer-Supported Cooperative Work (CSCW 2018). Article 20.*





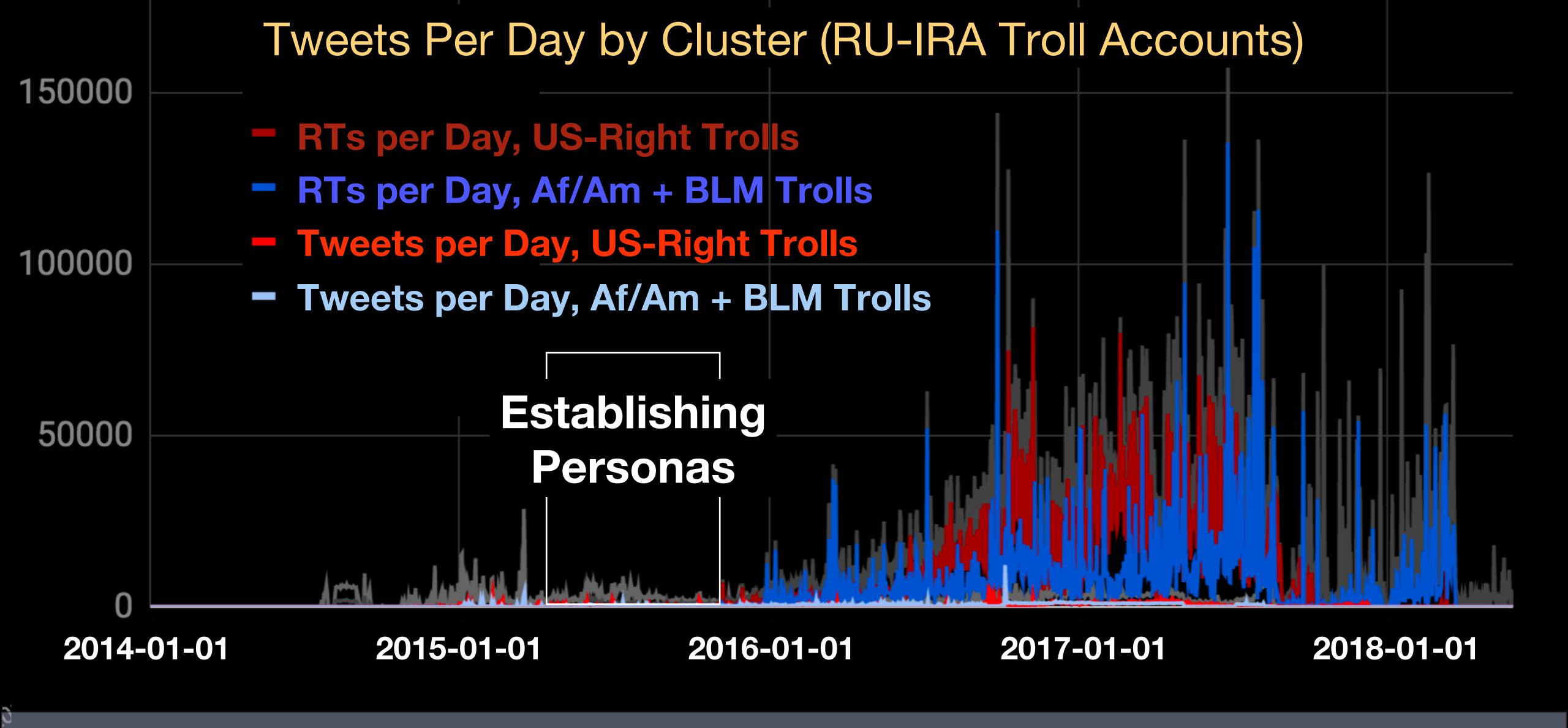
Enacting Caricatures of Political Personas

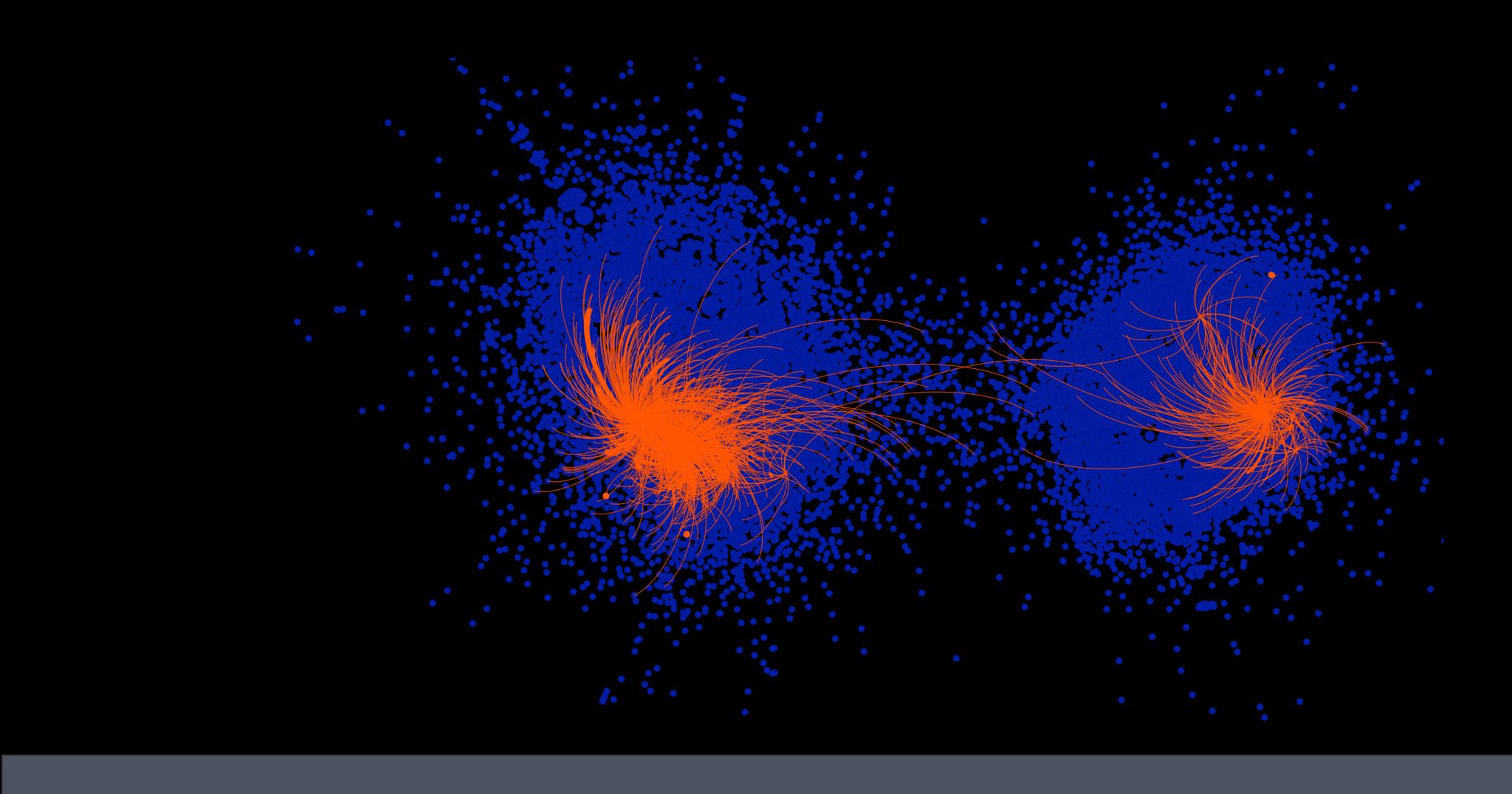


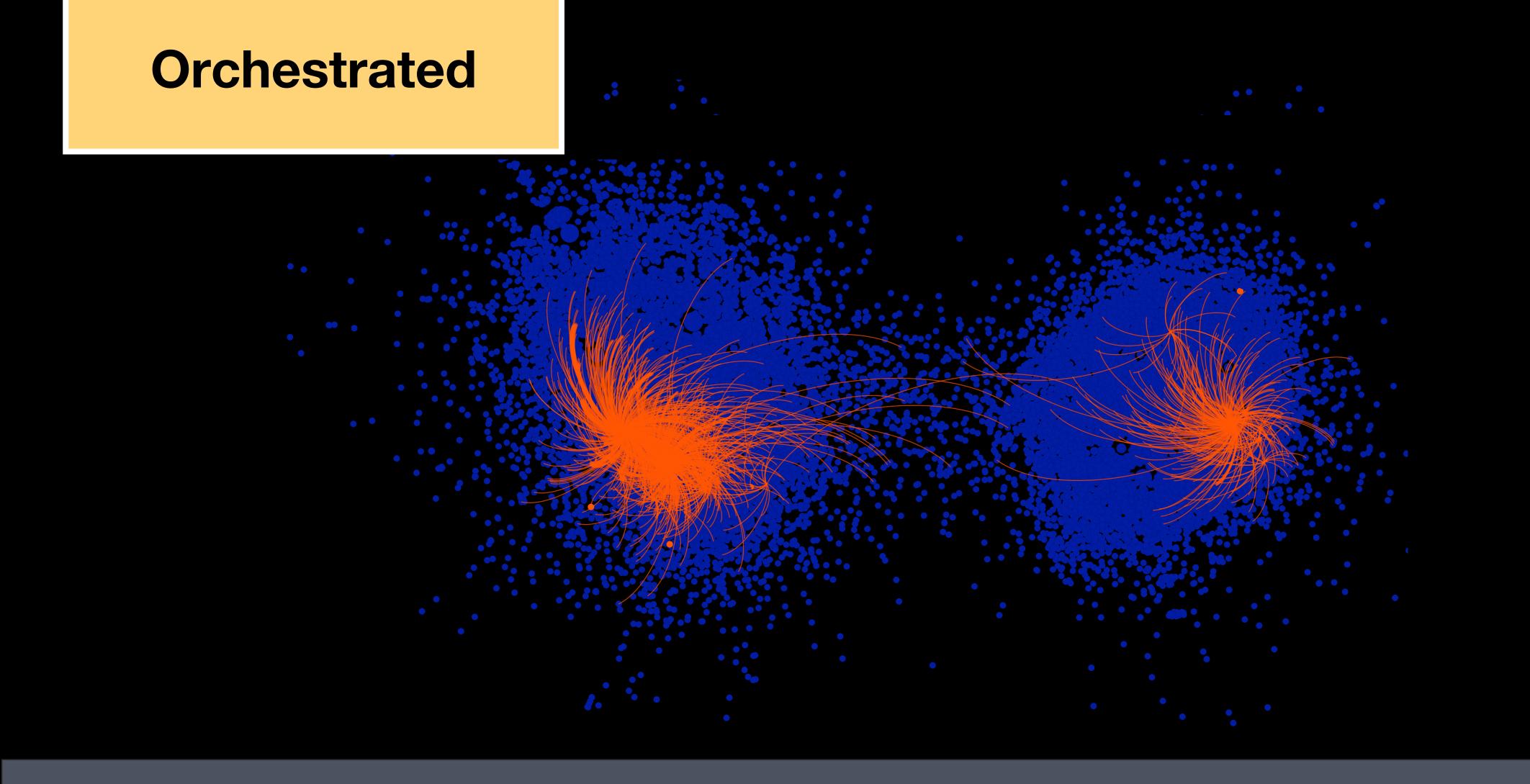


Af/Am Community + BLM Activists

US White Conservatives







Tom Wilson, Kaitlyn Zhou, and Kate Starbird. (2018). Assembling Strategic Narratives: Information Operations as Collaborative Work within an Online Community. *PACMHCI. 2, Computer-Supported Cooperative Work (CSCW 2018). Article 183.*

Kate Starbird, Ahmer Arif, Tom Wilson, Katherine Van Koevering, Katya Yefimova, and Daniel Scarnecchia. (2018). Ecosystem or Echo-System? Exploring Content Sharing across Alternative Media Domains. *ICWSM* 2018.

Kate Starbird, Ahmer Arif, and Tom Wilson, (2019). Disinformation as Collaborative Work: Surfacing the Participatory Nature of Strategic Information Operations. Submitted to *PACMHCI. 3, Computer-Supported Cooperative Work (CSCW 2019). Article 127*



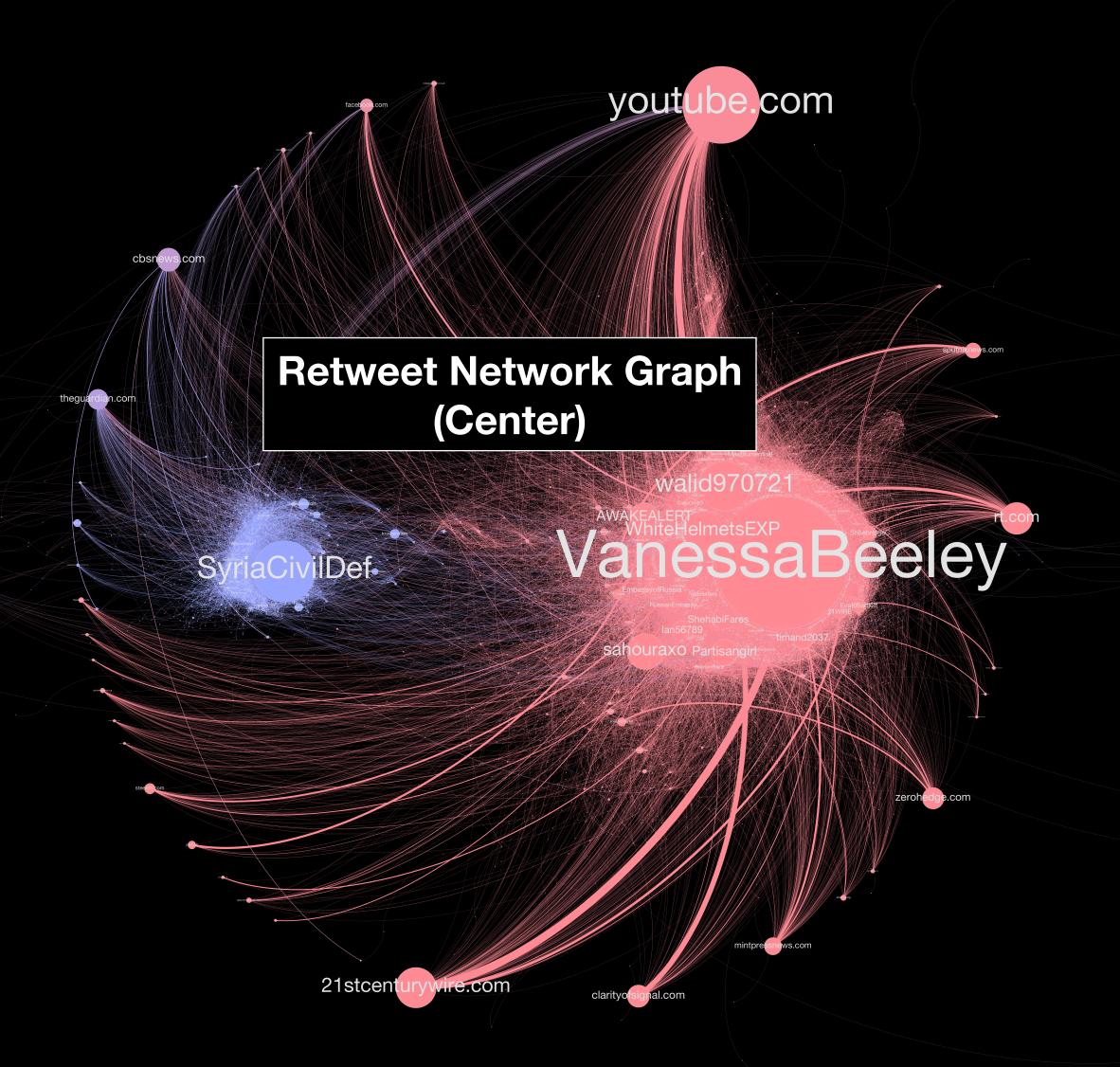






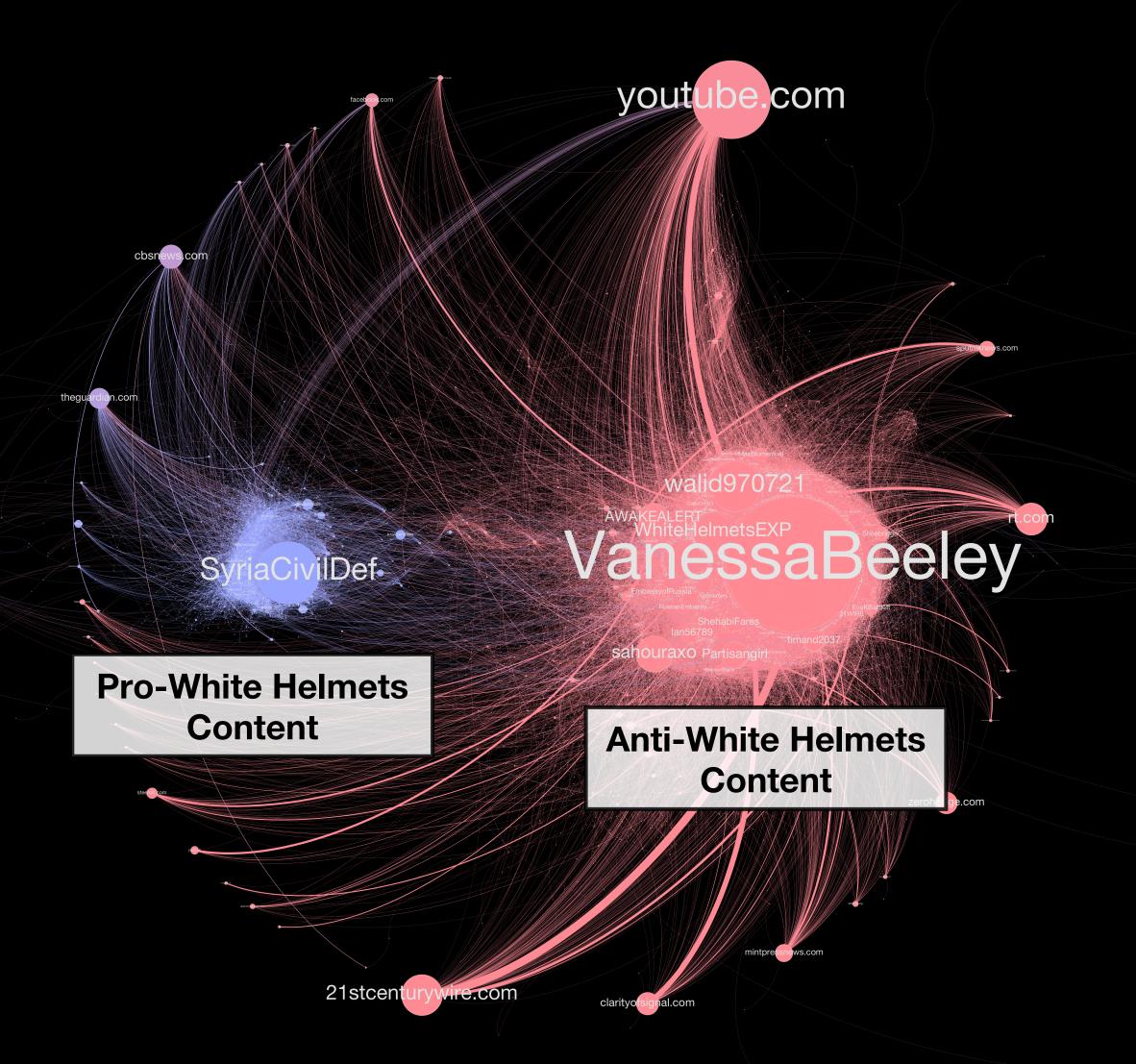






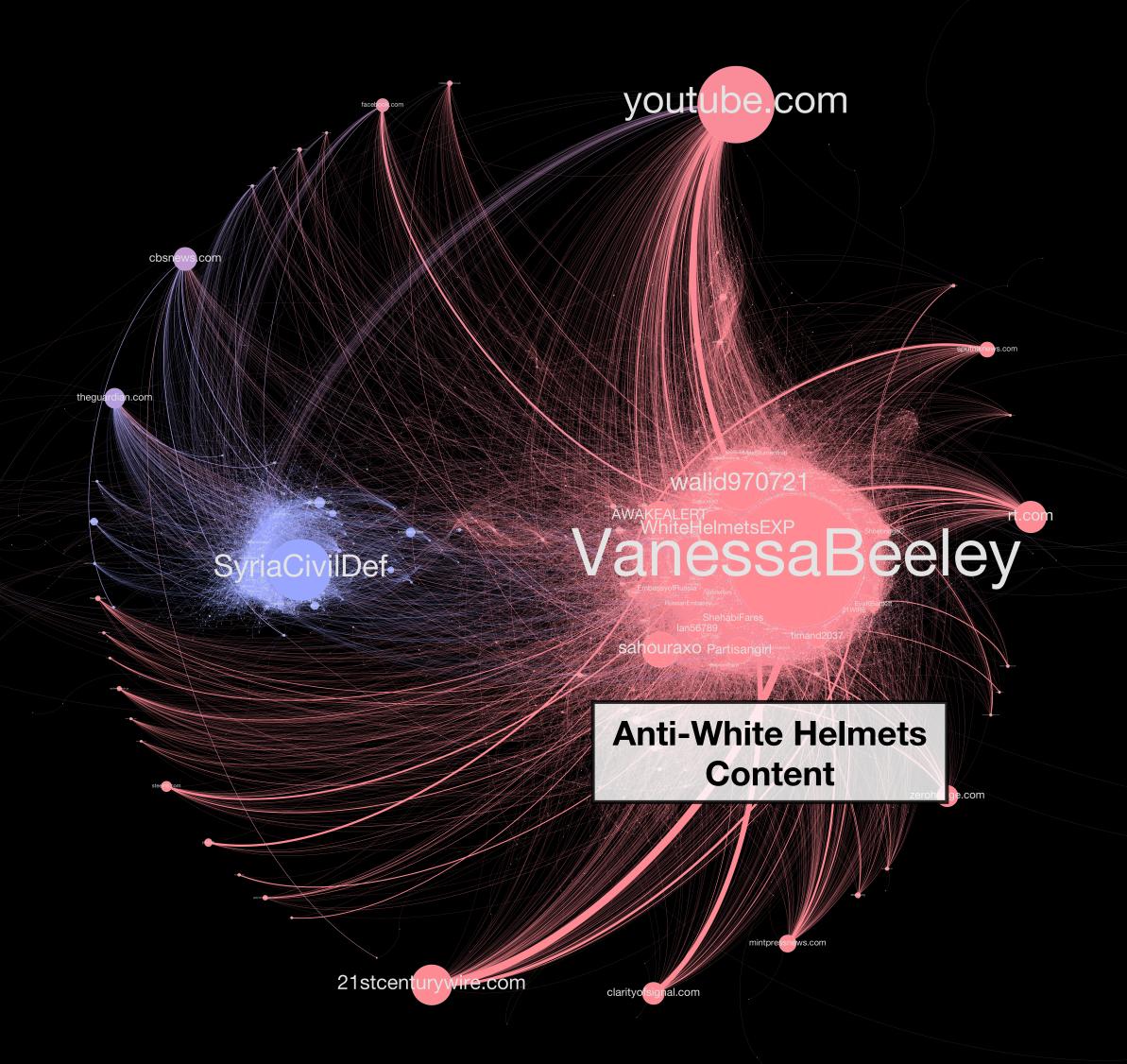
Retweet Network Graph of White Helmets Twitter conversation June 2017-2018

Graph built from tweets w/ "white helmets"



Two distinct clusters

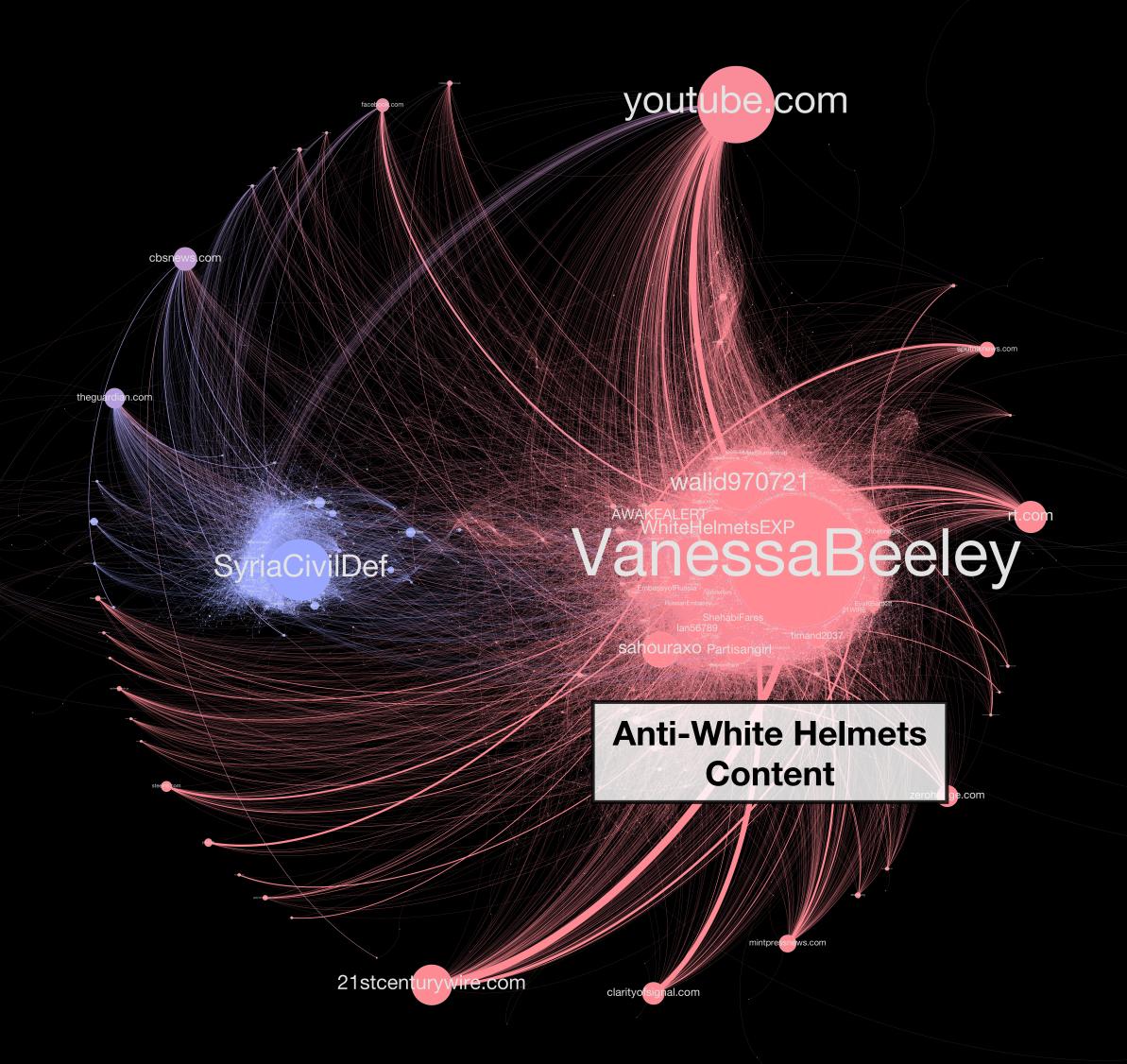
Pink dominates in terms of volume



Accounts in Pink: Journalists, Government Officials Govt & "Alternative" Media

few "Bots", few "Trolls"

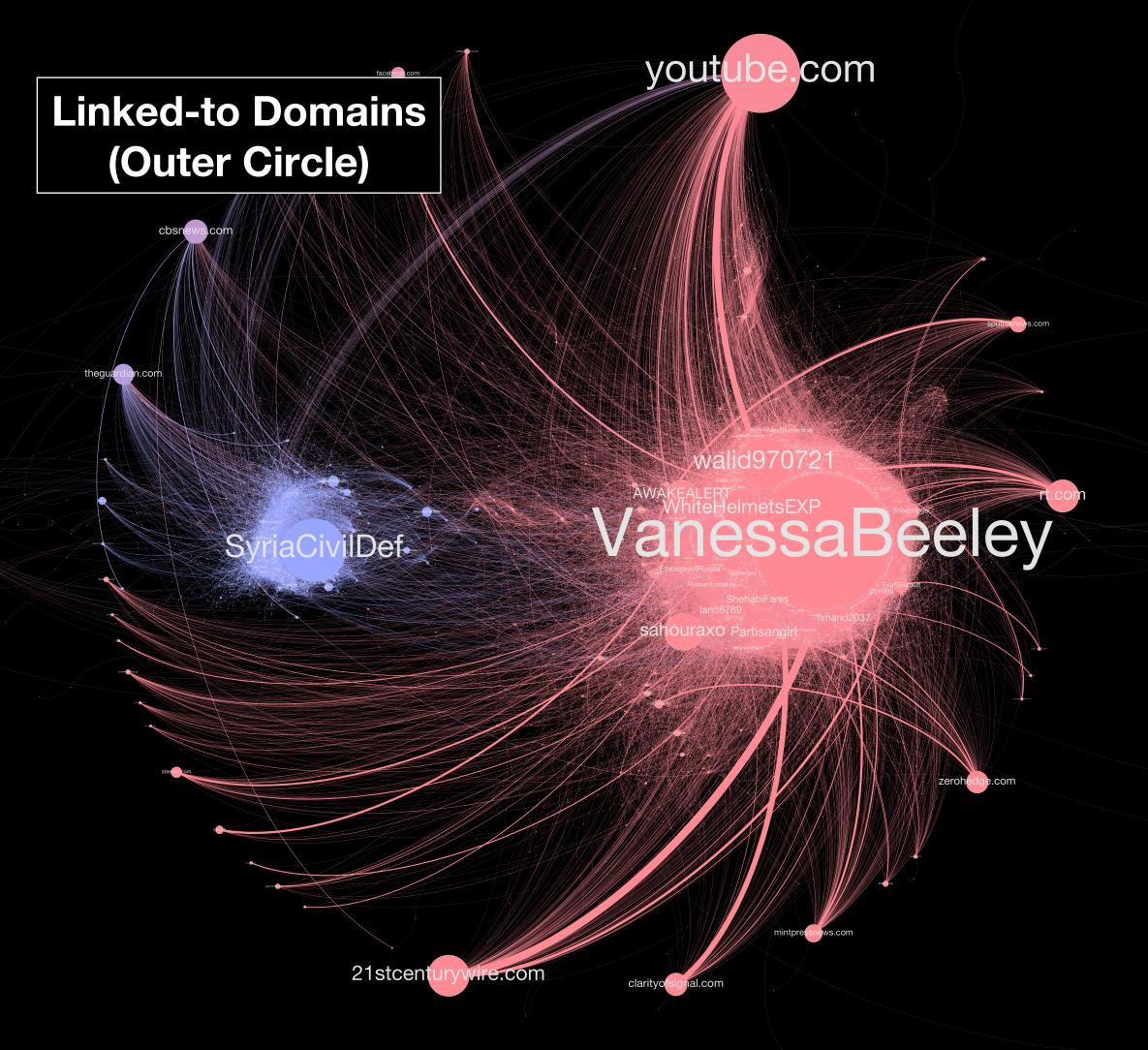
MOST appear to be SINCERE ACTIVISTS



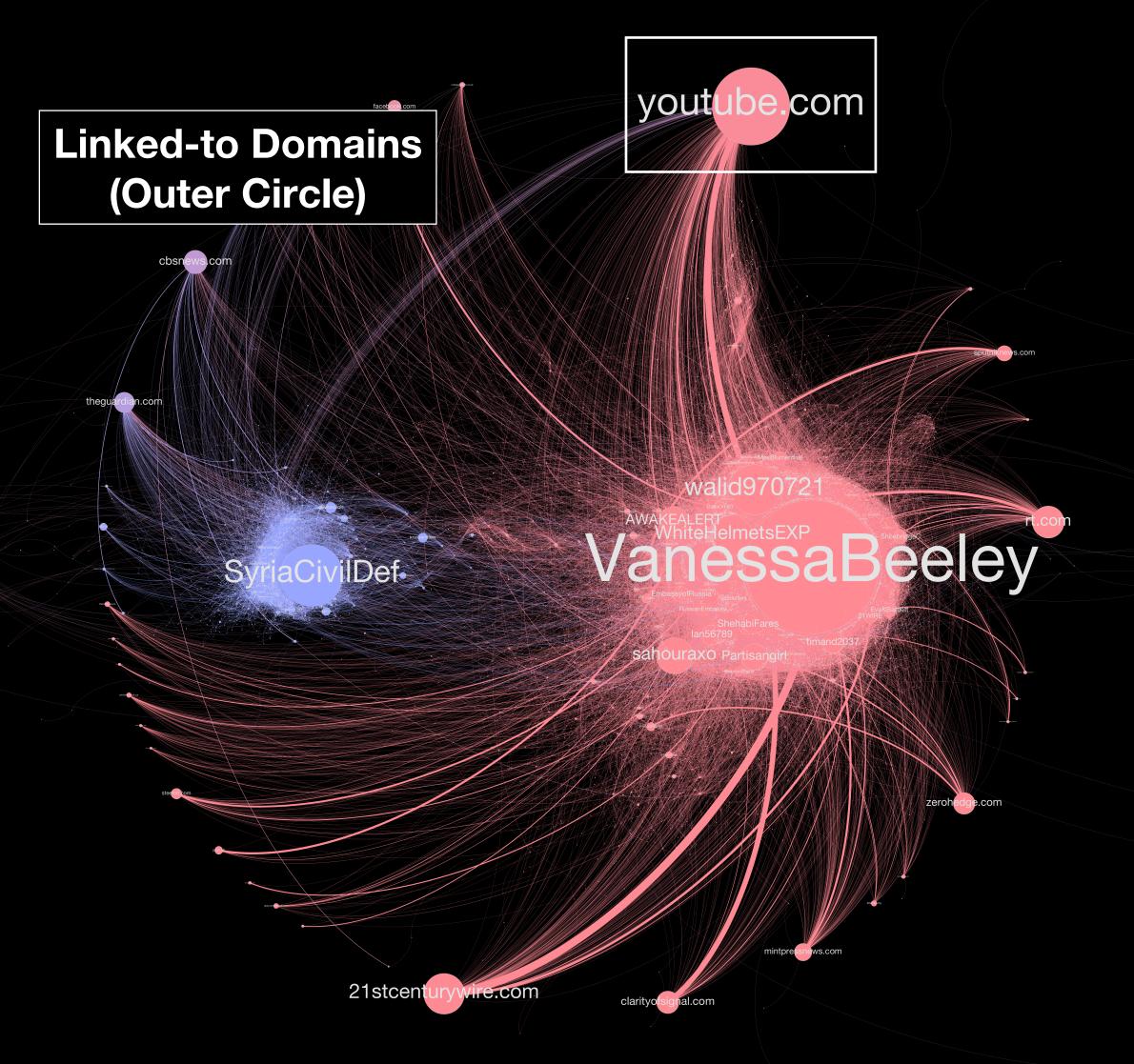
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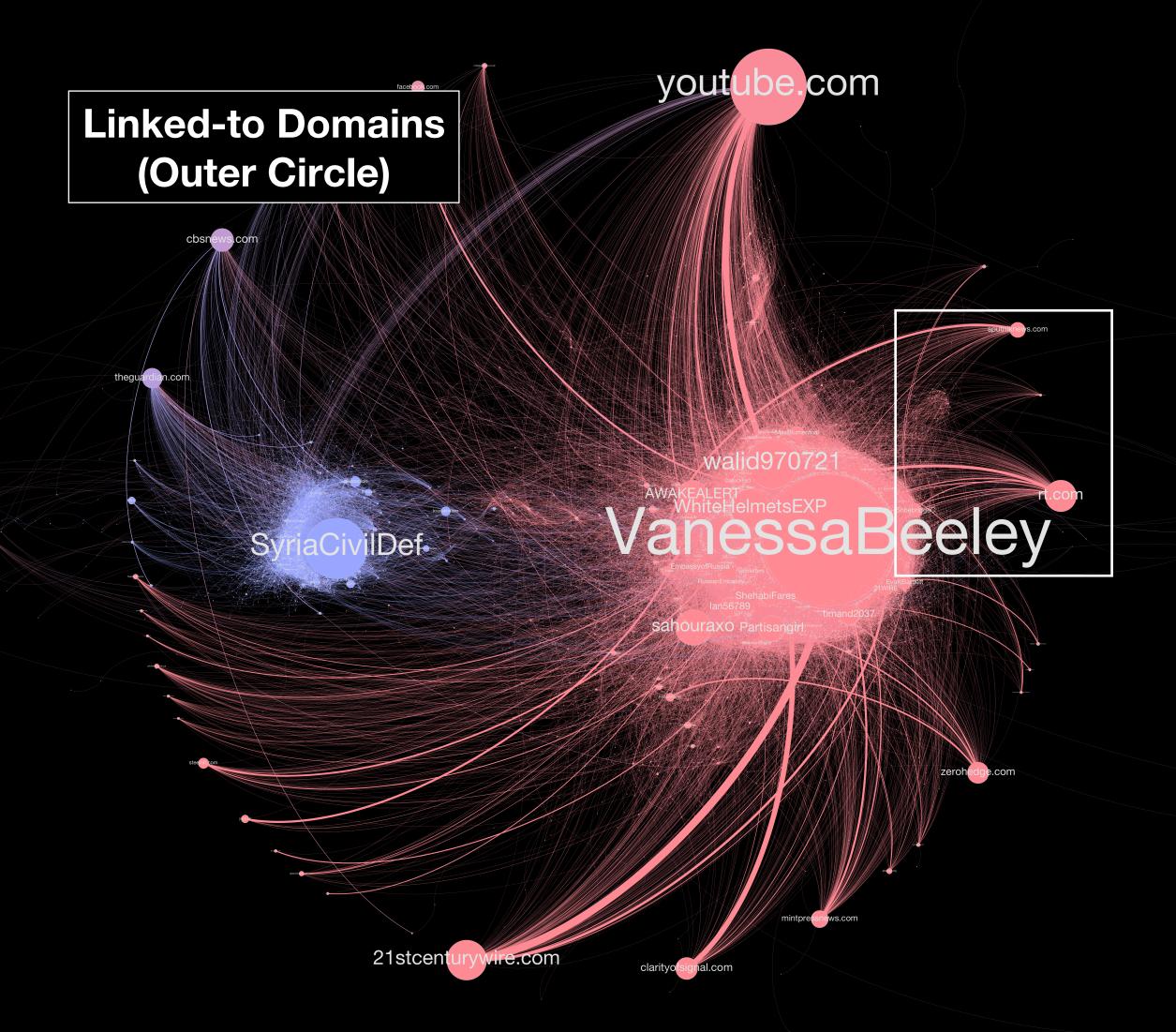
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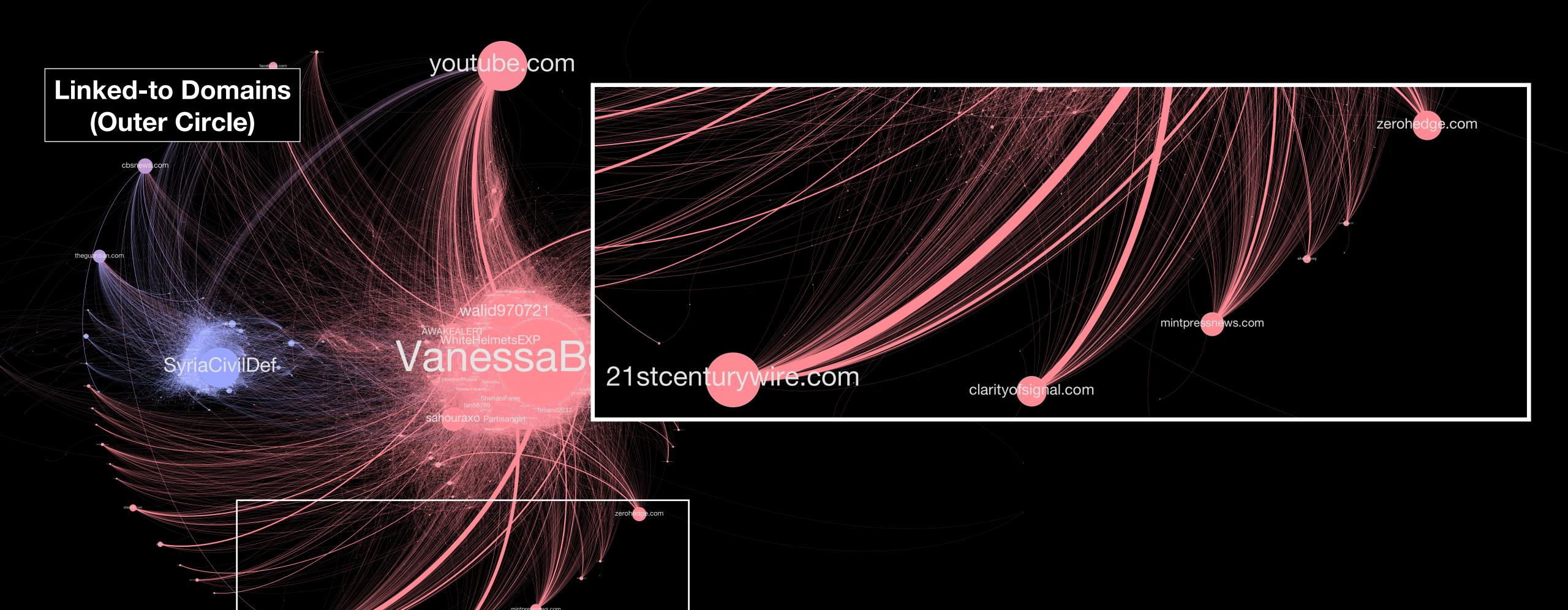
Considering the broader media ecosystem



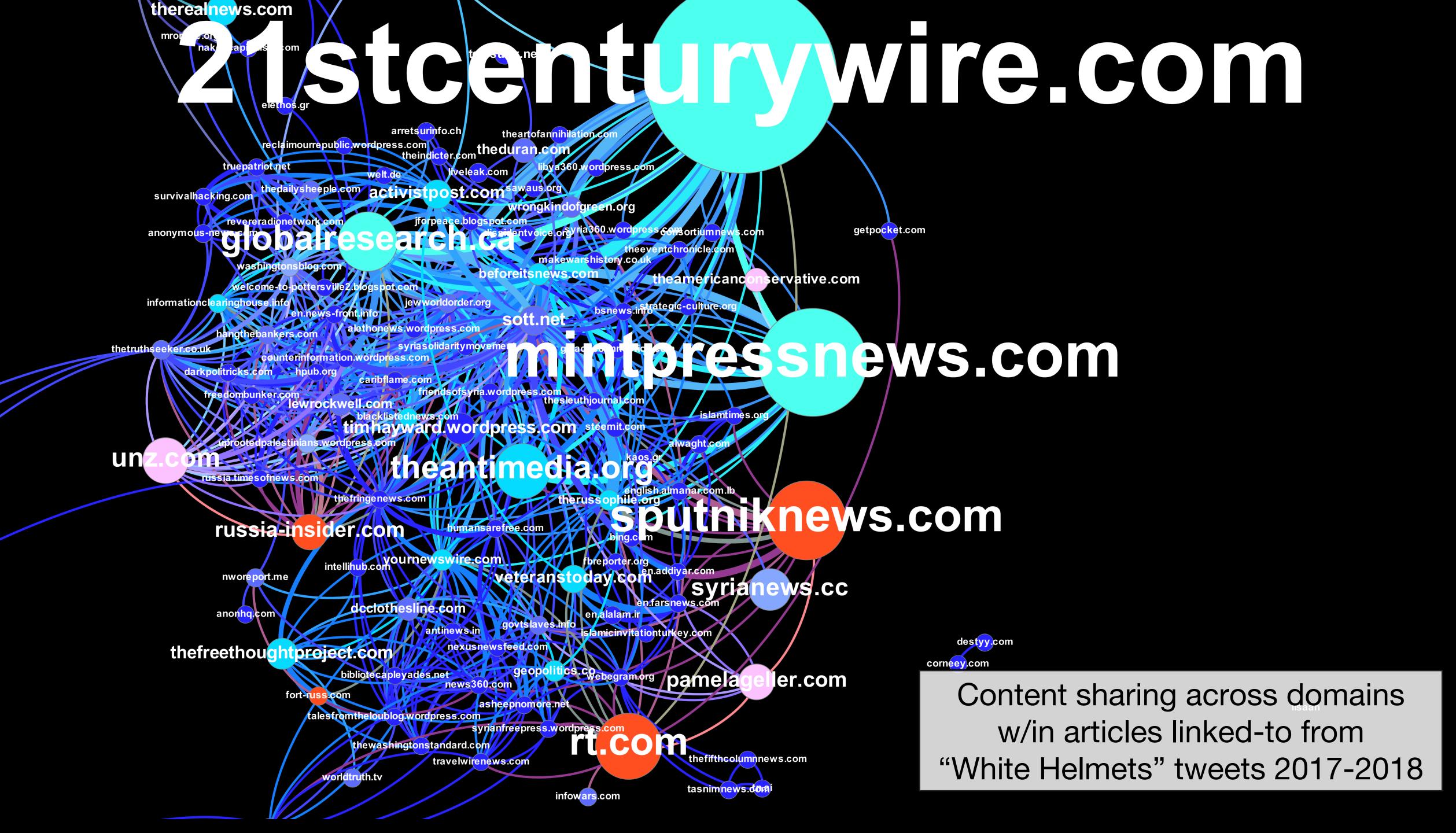
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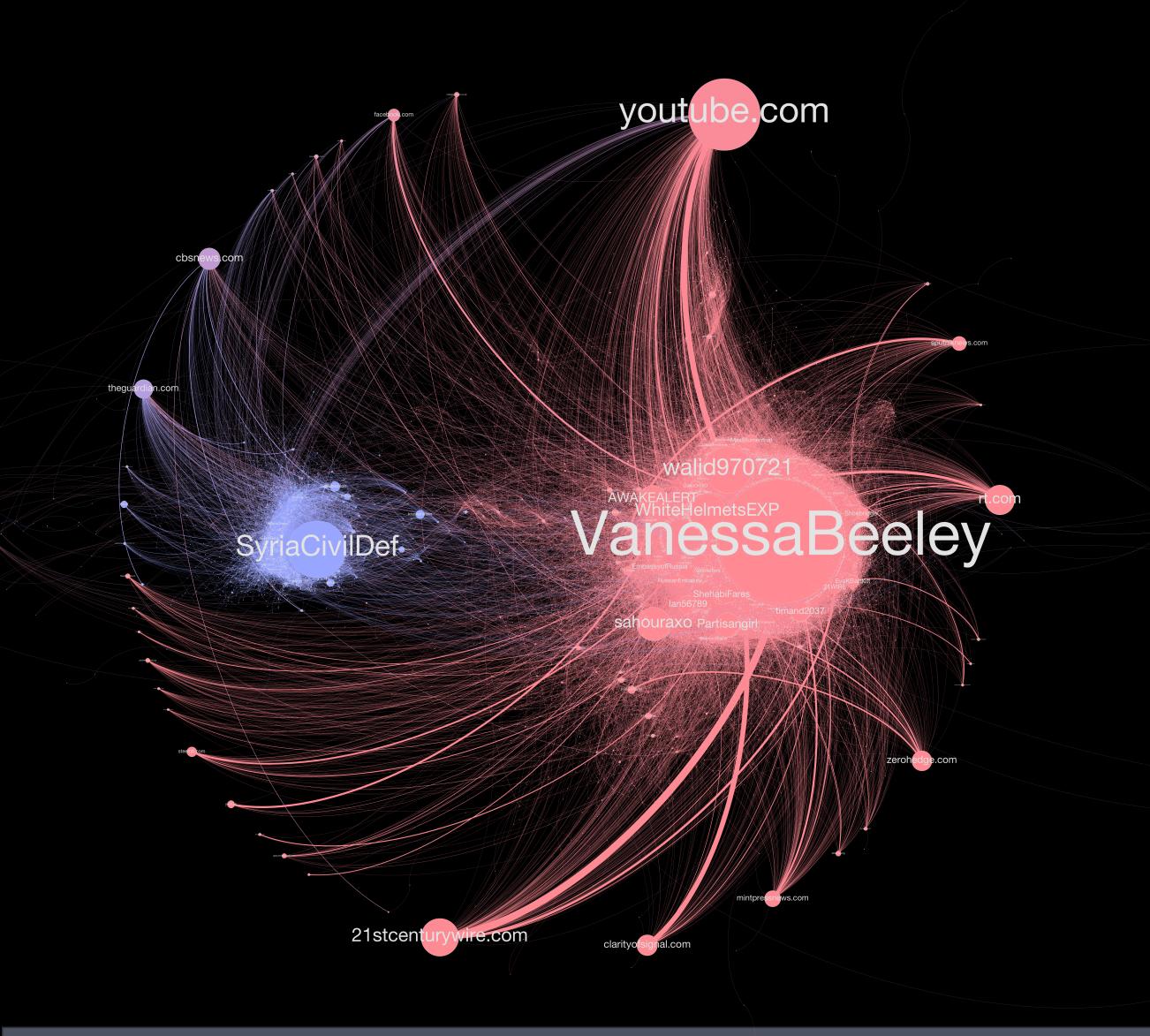






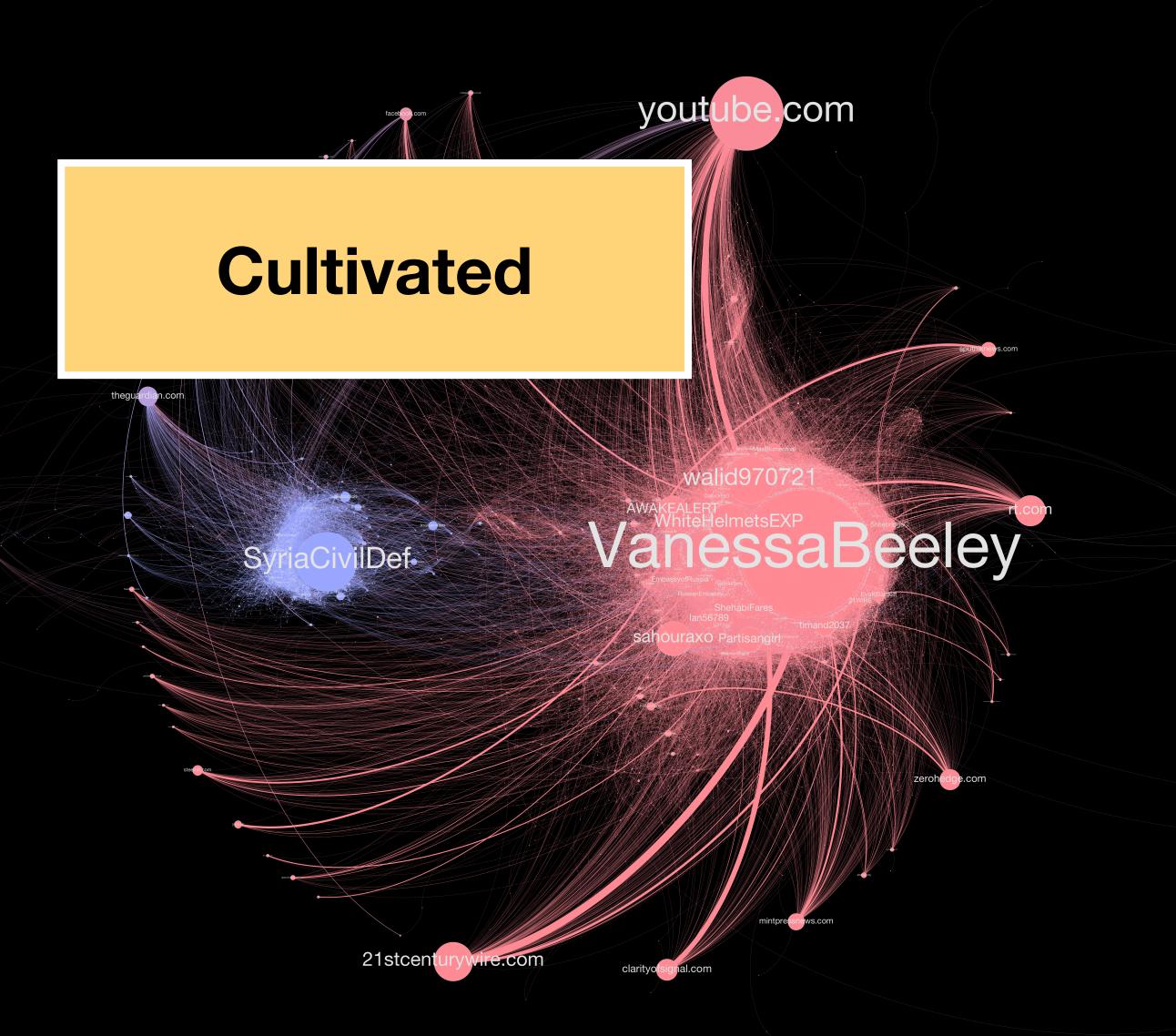
re.com







Disinformation during Conflict The Case of the Syria Civil Defence (the "White Helmets") in Syria



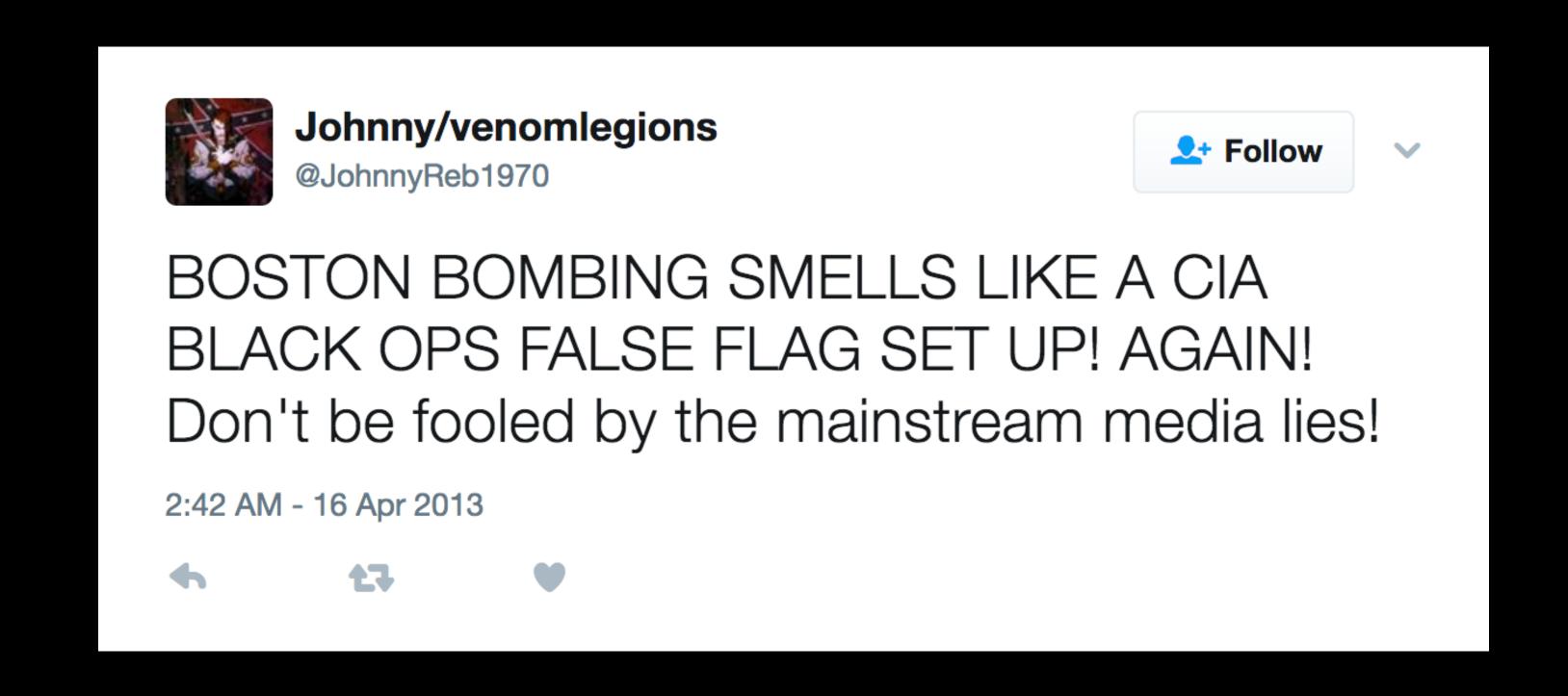


Disinformation during Conflict The Case of the Syria Civil Defence (the "White Helmets") in Syria

Kate Starbird. (2017). Examining the Alternative Media Ecosystem through the Production of Alternative Narratives of Mass Shooting Events on Twitter. In *11th International AAAI Conference on Web and Social Media (ICWSM 2017)*, Montreal, Canada, (pp. 230-339).

A. Conrad Nied, Leo Stewart, Emma Spiro, and Kate Starbird. (2017). Alternative Narratives of Crisis Events: Communities and Social Botnets Engaged on Social Media. In Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2017), pp. 263-266. ACM, 2017.

Kate Starbird, Jim Maddock, Mania Orand, Peg Achterman, and Robert M. Mason. (2014). Rumors, False Flags, and Digital Vigilantes: Misinformation on Twitter after the 2013 Boston Marathon Bombings. Short paper. *iConference* 2014, Berlin, Germany, (9 pages).



9/11 (2001)

Sandy Hook Shootings (2012)

Boston Marathon Bombing (2013)

Downing of Flight MH17 (2014)

San Bernardino Shootings (2015)

Umpqua School Shootings (2015)

Paris Attacks (2015)

Orlando Nightclub Shooting (2016)

Munich Market Shooting (2016)

Las Vegas Concert Shootings (2017)

Parkland School Shooting (2018)

"Hoax"

"False Flag"

"Crisis Actors"

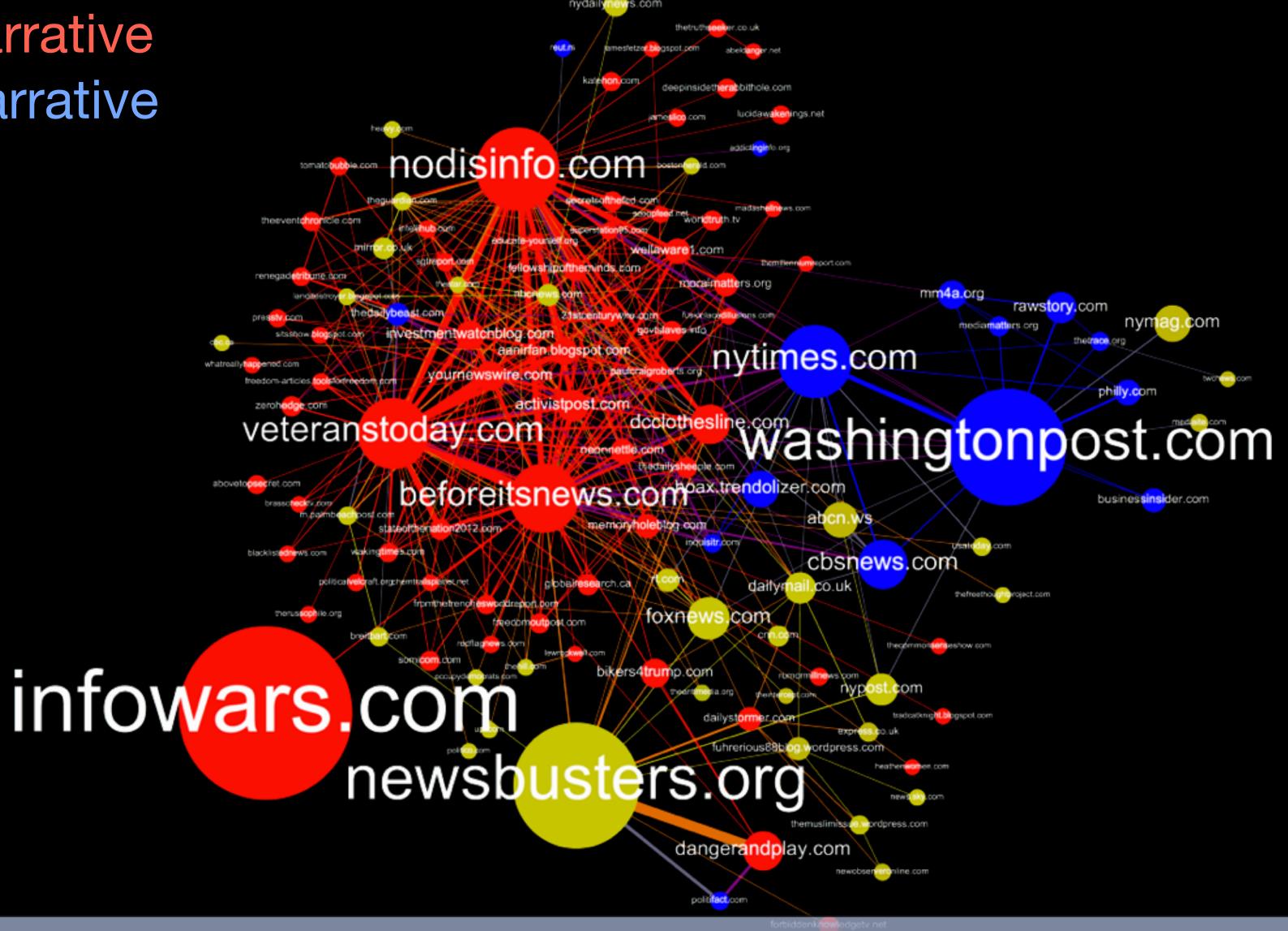




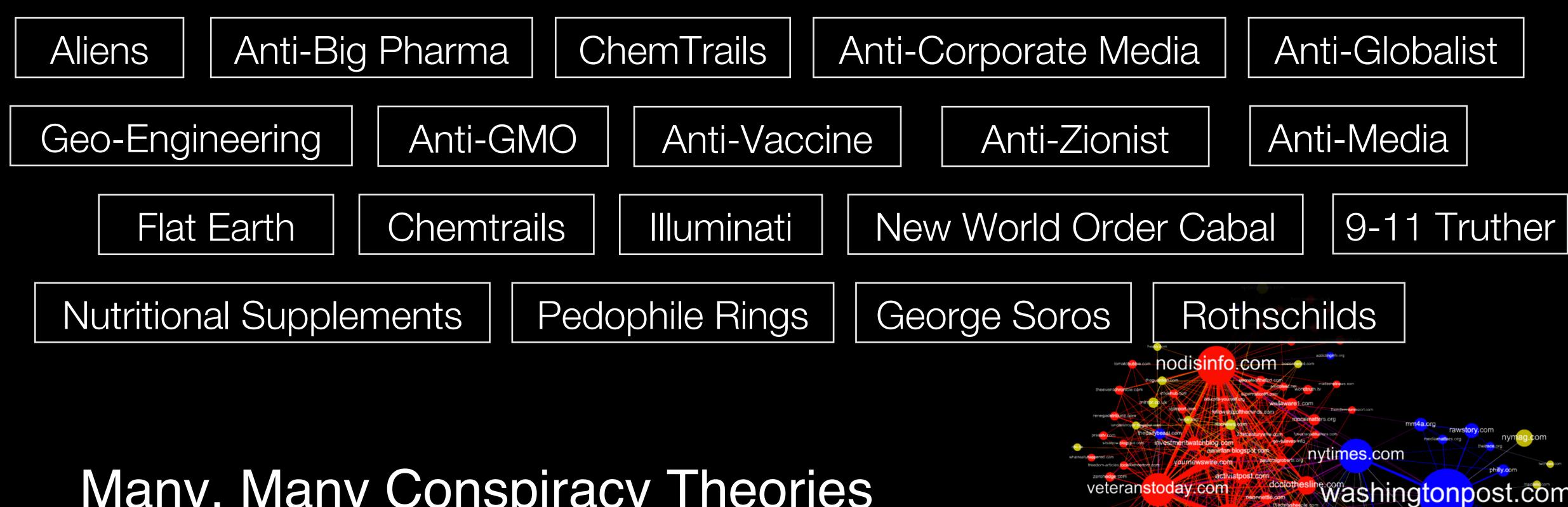
Red: Affirms Alternative Narrative

Blue: Denies Alternative Narrative

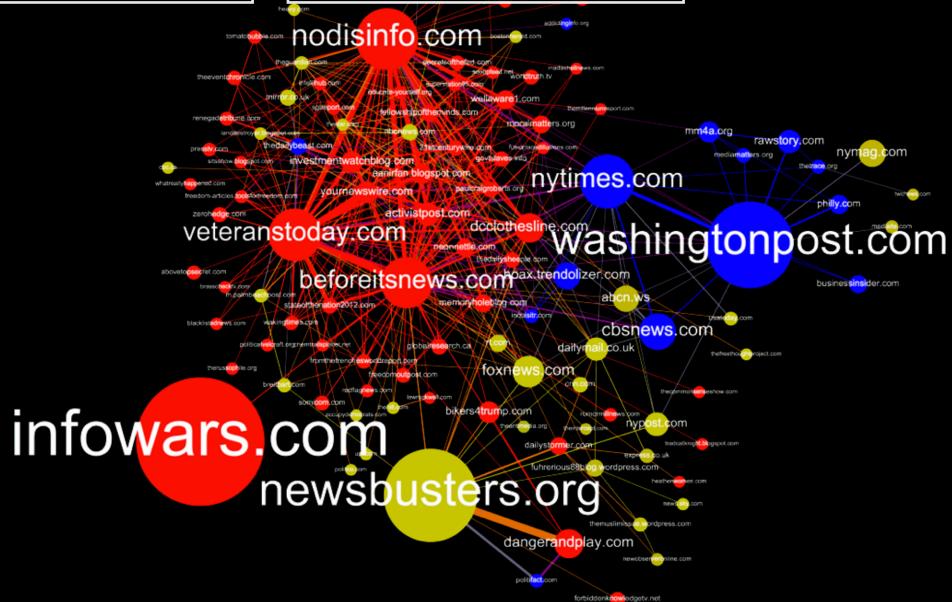
Yellow: Used as Evidence



Online Conspiracy Theorizing during Crisis Events Examining the Alternative Media Ecosystem



Many, Many Conspiracy Theories "Corrupted Epistemology"

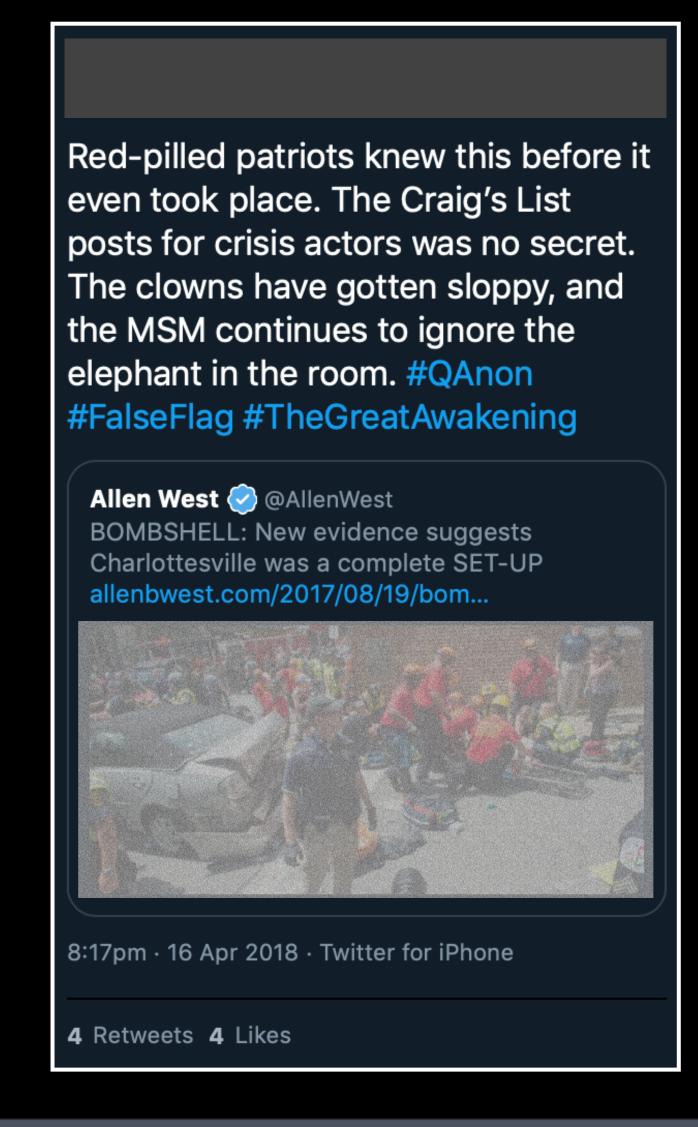


Presence of Government-Affiliated Media

- RT, Sputnik (Russian government)
- PressTV (Iranian government)
- Katehon (Russian Think Tank)

Organic & Emergent

Organic & Emergent



Adding Nuance to our Evolving Understanding of Online Disinformation

Disinformation is not simply "false information".

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Jack (2017): "Disinformation is information that is deliberately false or misleading"

5): "Most campaigns are a carefully designed mixture of facts, half-truths, exaggerations, and de

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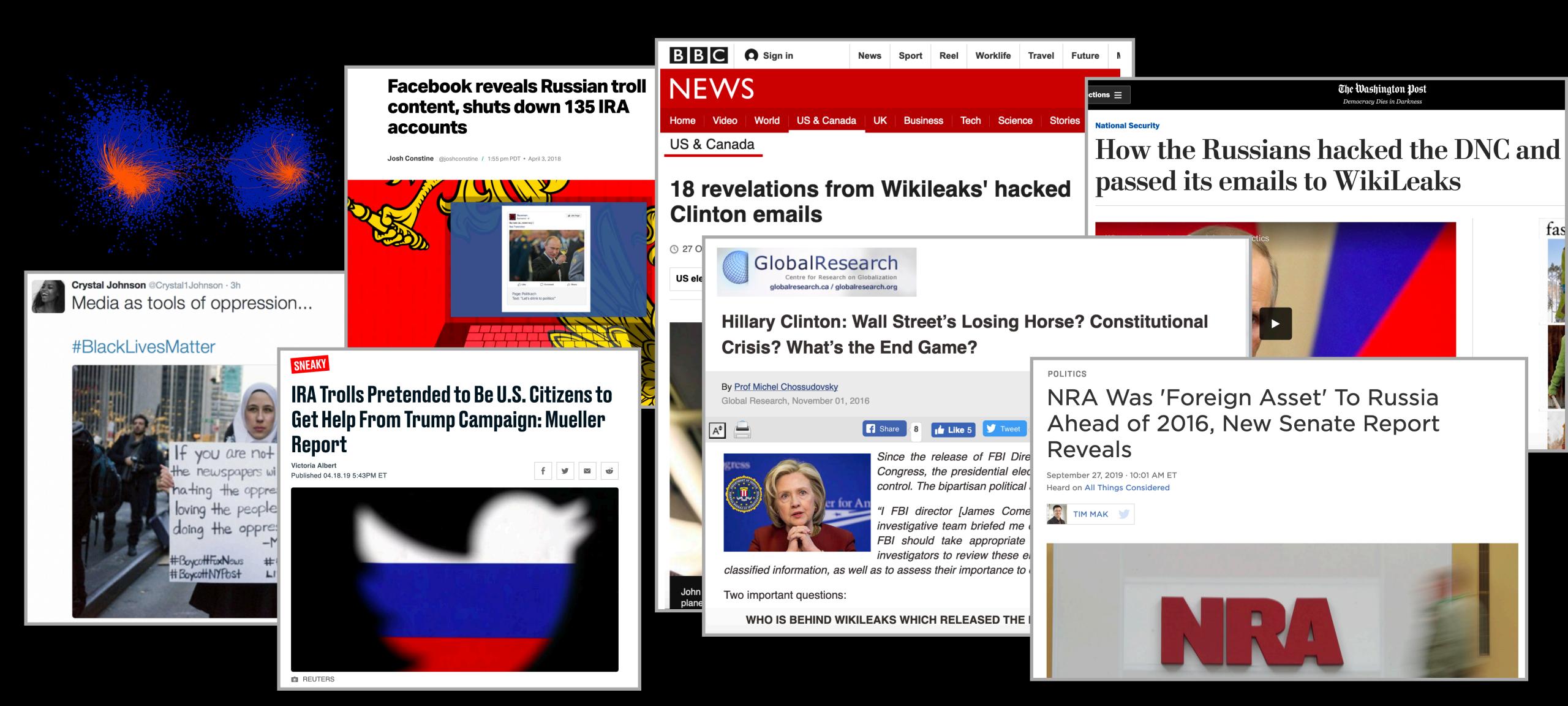
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Starbird et al (2019): "It is therefore useful to think of disinformation ...
not as a quality of a specific piece of information,
but as a collection of information-actions—or a campaign."

5): "Most campaigns are a carefully designed mixture of facts, half-truths, exaggerations, and de







hnpilger to @afshinrattansi

Russia in RSA 💳 🤣

@EmbassyofRussia

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omple

MintPress News @MintPressNews

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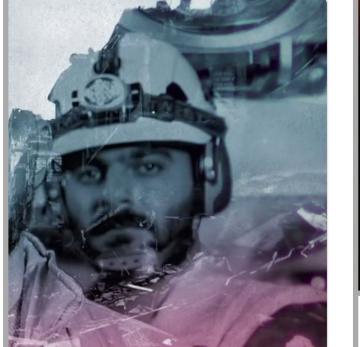
Investigation: White Helmets Committing hiteHe

Going Underground on RT @Underground RT

tigation- ...

rocities "in Syria com/2017/06/25/syr @netflix @clarissaward

" Media is complicit w/



Follow

hite Helmets Lied to the

Aleppo Boy Just Exposed B #CIAisISIS

mad Kheir Dagneesh, the father of Or

Qaeda

our choice

"The White Helmets would take children with light injuries to the Turkish border and then the children's bodies are returned and the organs have clearly been REMOVED"

Arab Army Soldie Endorsed by Cha /2017/06/21/whi



WHITE HELMETS: Severed He Vanessa Beeley | How much Ion terrorism in Syria? 21stcenturywire.com

5:34 AM - 21 Jun 2017

442 Retweets 264 Likes

WHITE HELMETS STEAL & LOOT HOUSES, TERRORIST LE...

I interviewed Ahmad Aldayh in May 2017, in his shop in East Aleppo. He had been held prisoner by Jabhat al Shamiya brigade [affiliated with Nusra Front aka A...

outube.com

8:39 AM - 19 Aug 2017

189 Retweets 148 Likes







mintpressnews.com

3:54 PM - 11 Jun 2017



John Pilger: The White Helmets Are A "Complete Propagand:

In yesterday's interview with RT's Going Underground, John Pilge Helmets as nothing more than a "complete propaganda construc

@VanessaBeeley discusses the White

Helmets' alleged organ trafficking operations

WEDNESDAY ON RT!



9:56 AM - 19 Feb 2019

563 Retweets 462 Likes

distans pervent us



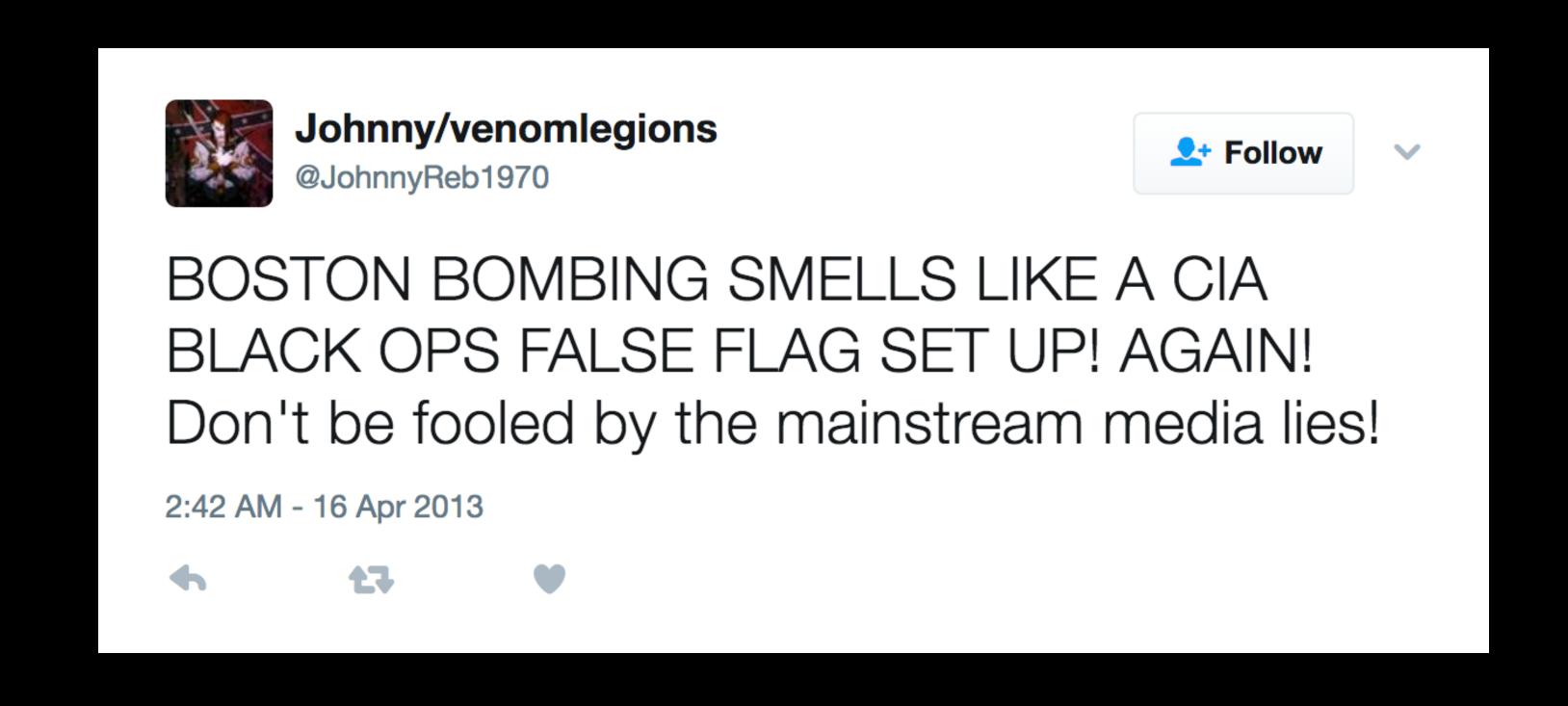
Email Address

Father of Famous Aleppo Boy Just Exposed How the US & White Helmets Lie...

Omran, the dusty and bloodied boy in the ambulance did not suffer grave injuries from the Syrian government — the whole story was an elaborate lie.

thefreethoughtproject.com

12:51 PM - 7 Jun 2017



Disinformation is not simply "false information".

Disinformation is not simply "false information".

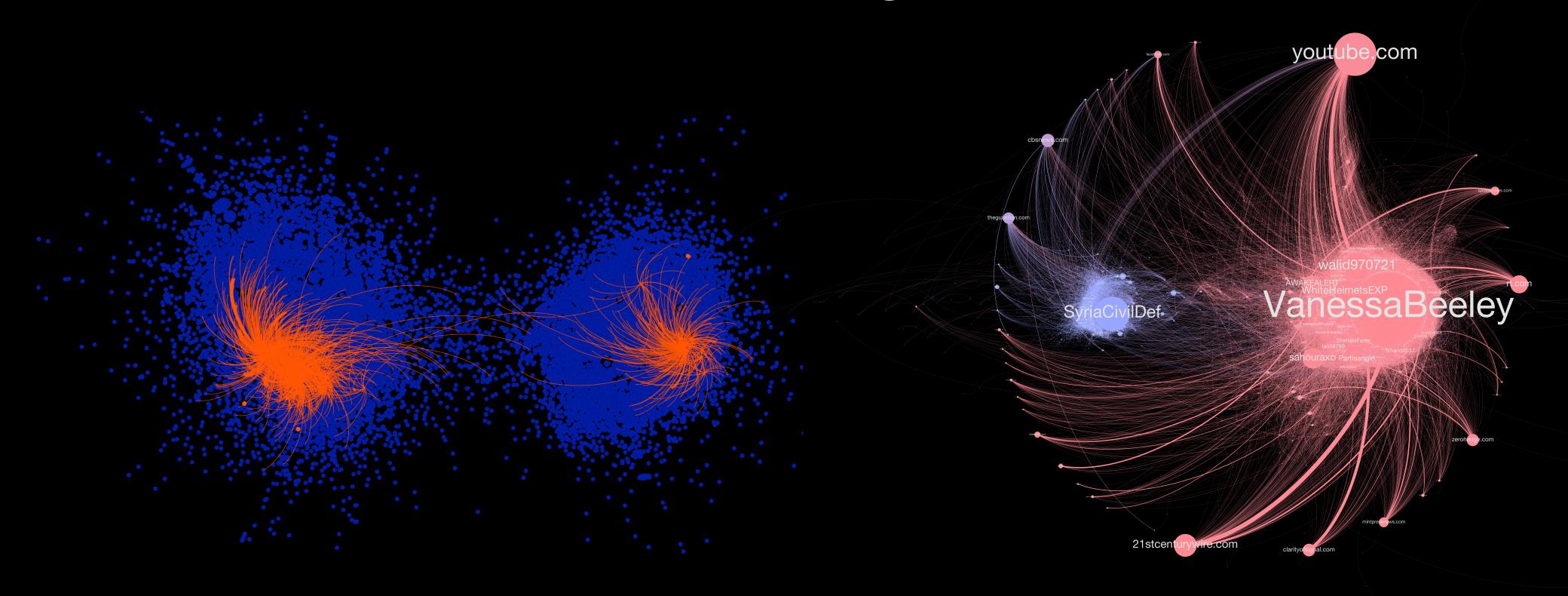
Identifying disinformation is not merely about determining the truth value of a single piece of information, but about inferring the intent (to mislead) of a collection of information actions.

Disinformation remains disinformation, no matter who is spreads it.

Identifying disinformation is not merely about determining the truth value of a single piece of information, but about inferring the intent (to mislead) of a collection of information actions.

Online disinformation is bots and trolls—and "unwitting crowds"

Online disinformation is bots and trolls—and "unwitting crowds"

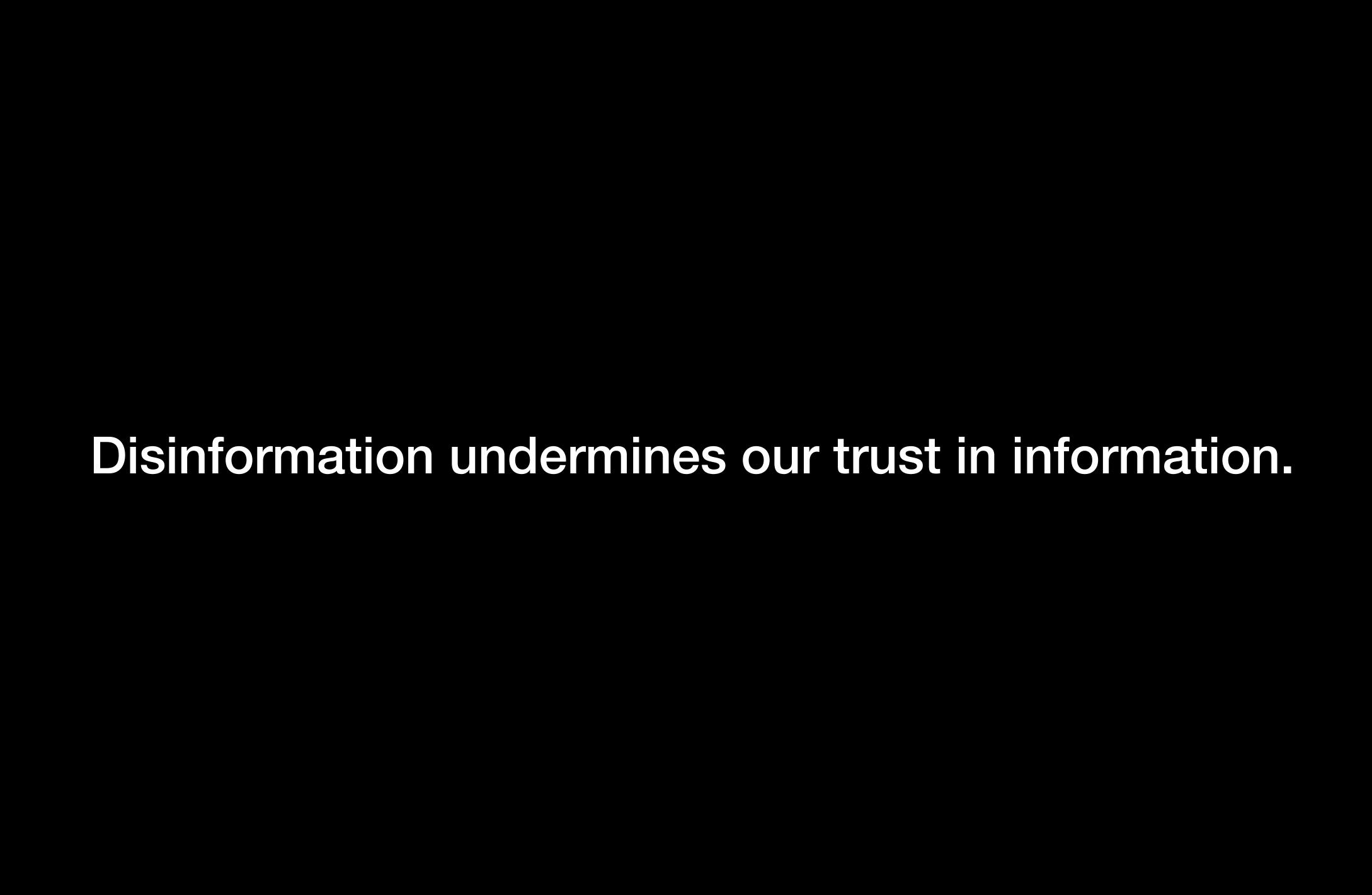


Disinformation is not just about "bots" and "trolls".

It targets, infiltrates, cultivates, shapes, and ultimately leverages online communities (or "unwitting crowds")

to further its spread and achieve its objectives.

We are all vulnerable to disinformation.

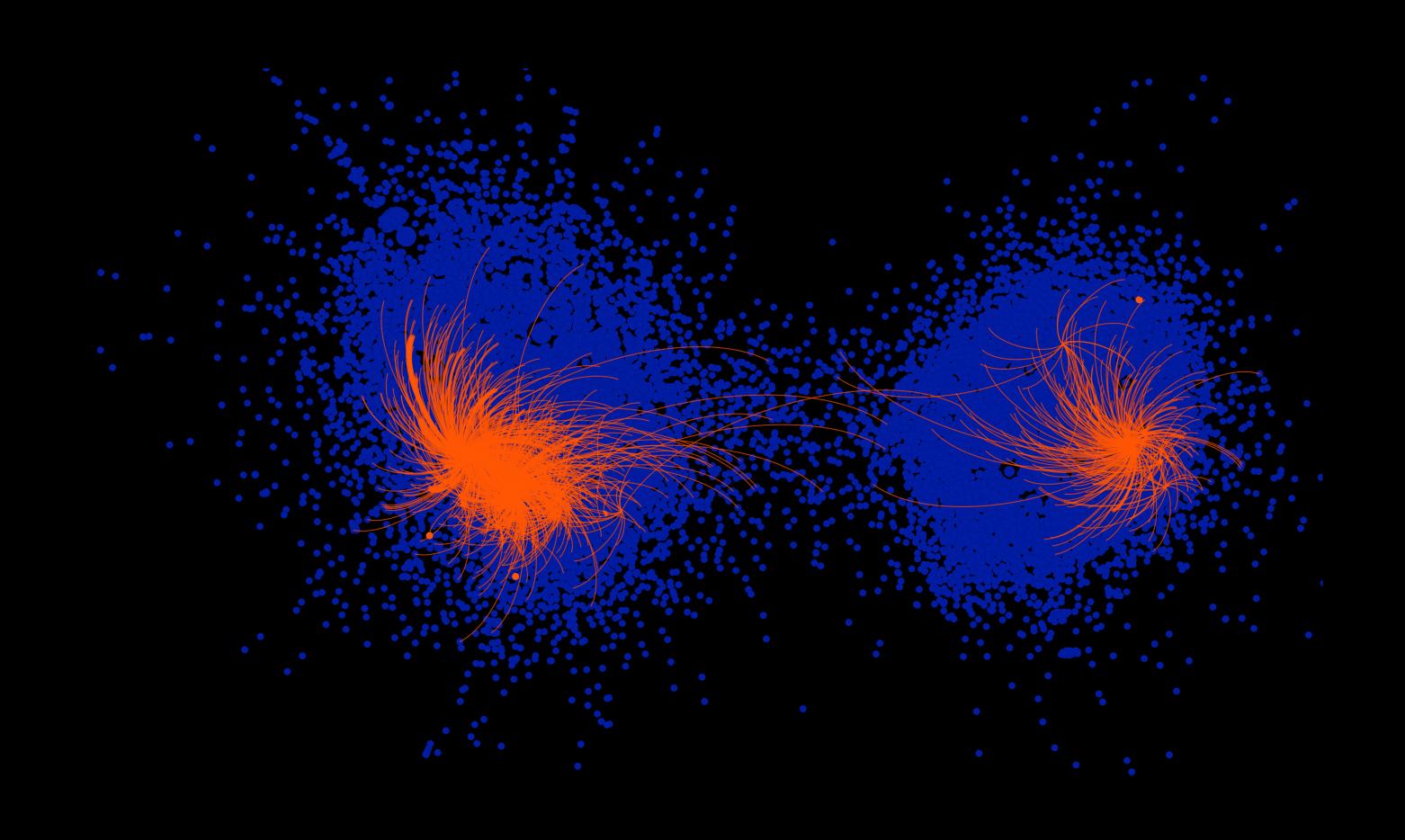


Disinformation undermines our trust in information.

Pomerantsev and Weiss (2014):

The purpose of disinformation is not to convince. The purpose of disinformation is to confuse... to create "muddled thinking" across society.

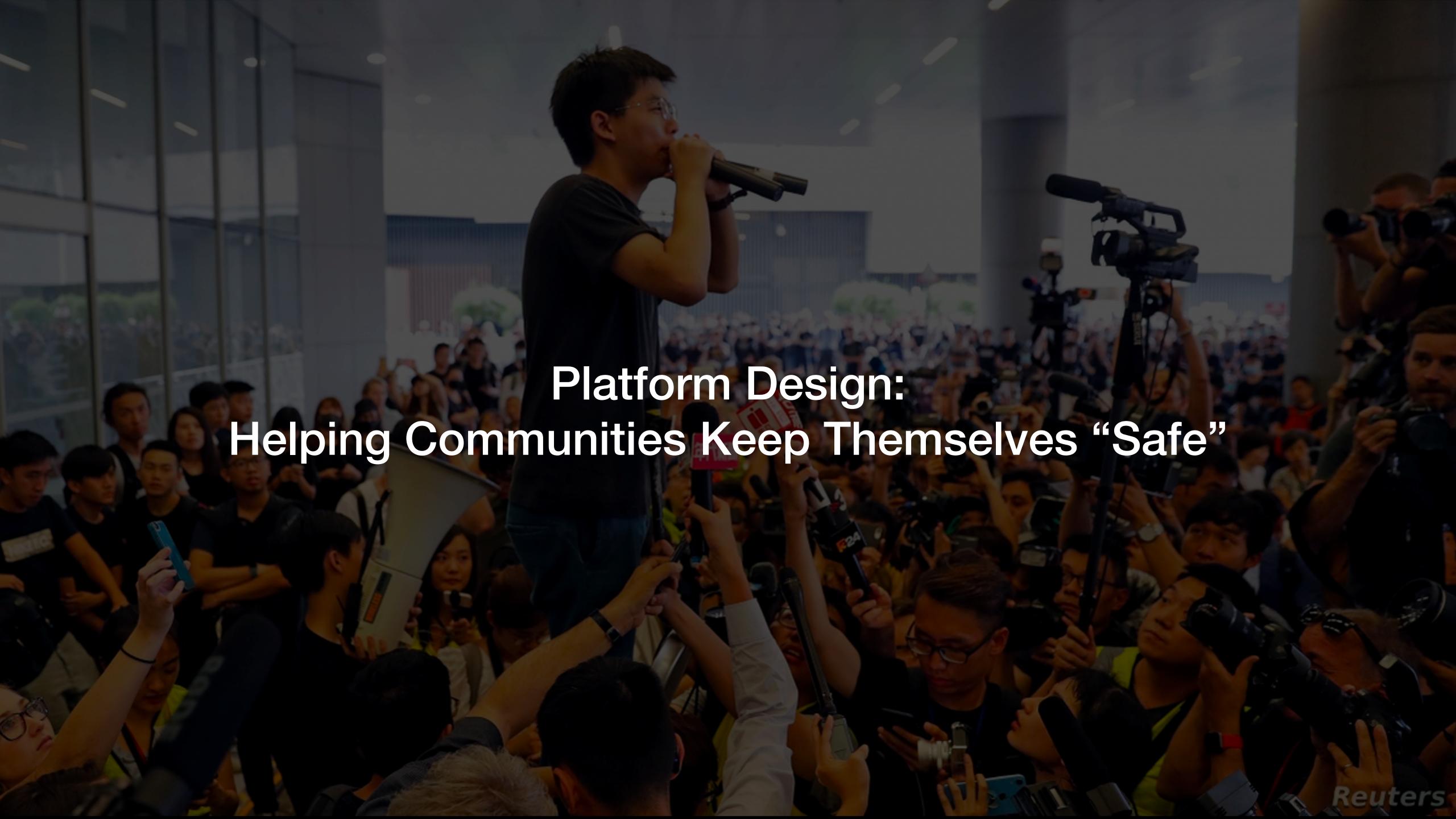
Disinformation undermines democratic societies.



Farrell, Henry, and Bruce Schneier. (2018). Common-Knowledge Attacks on Democracy. *Berkman Klein Center Research Publication* 2018-7.



Addressing the problem will require research and innovation in technology, education, journalism, and policy.



Fostering Trust / Designing Trustworthy Systems



Thank you.

Students

Ahmer Arif, Tom Wilson, Leo Stewart, John Robinson, Kaitlyn Zhou, Katya Yefimova, A. Conrad Nied, Katherine Von Koevering Many more students from HCDE and the iSchool who participated through Directed Research Groups during 2013-2018

Collaborators

Daniel Scarnecchia, formerly at the Harvard Humanitarian Initiative Emma Spiro and Robert Mason, UW iSchool SOME Lab - University of Washington

Kate Starbird

@katestarbird emCOMP Lab

US National Science Foundation

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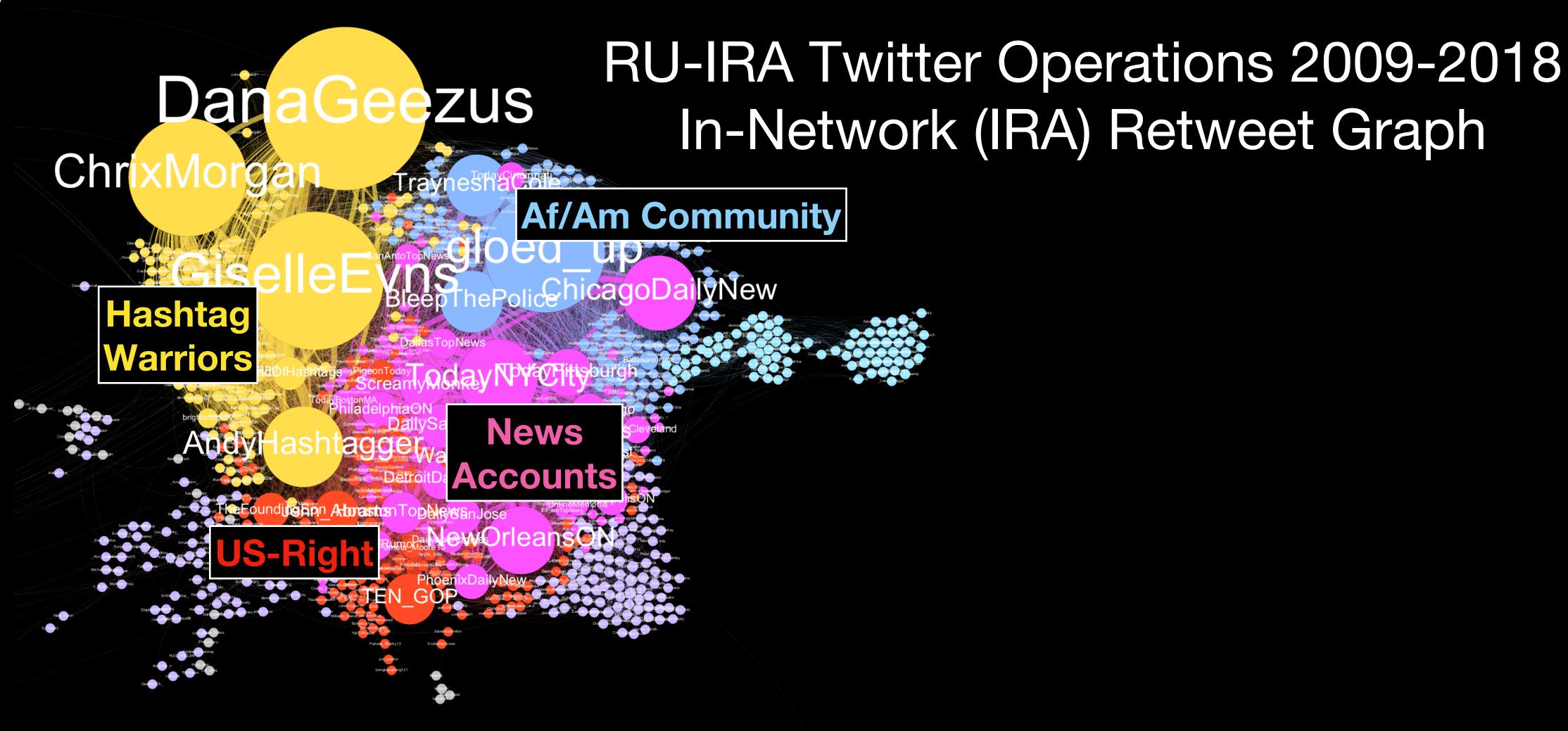
Office of Naval Research





Fostering Trust / Designing Trustworthy Systems

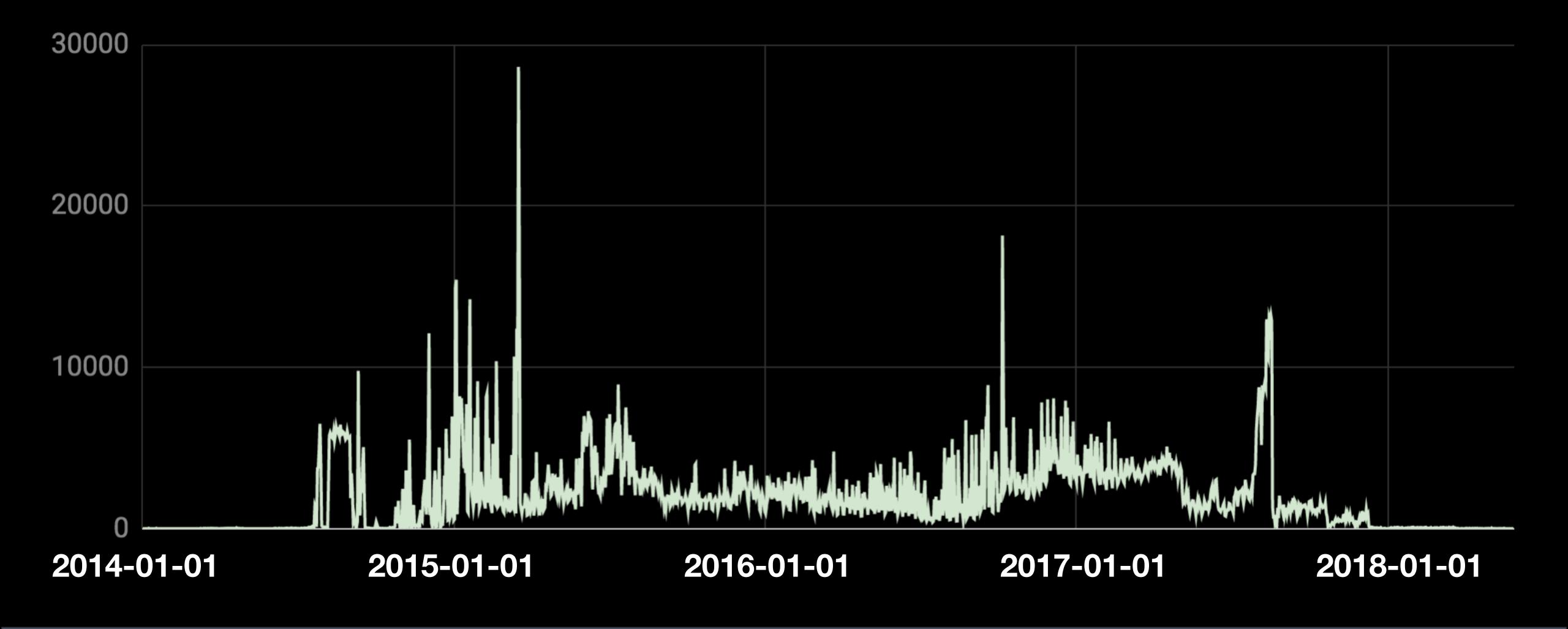
The tactics and effects of disinformation are resonating with features of socio-technical environments.

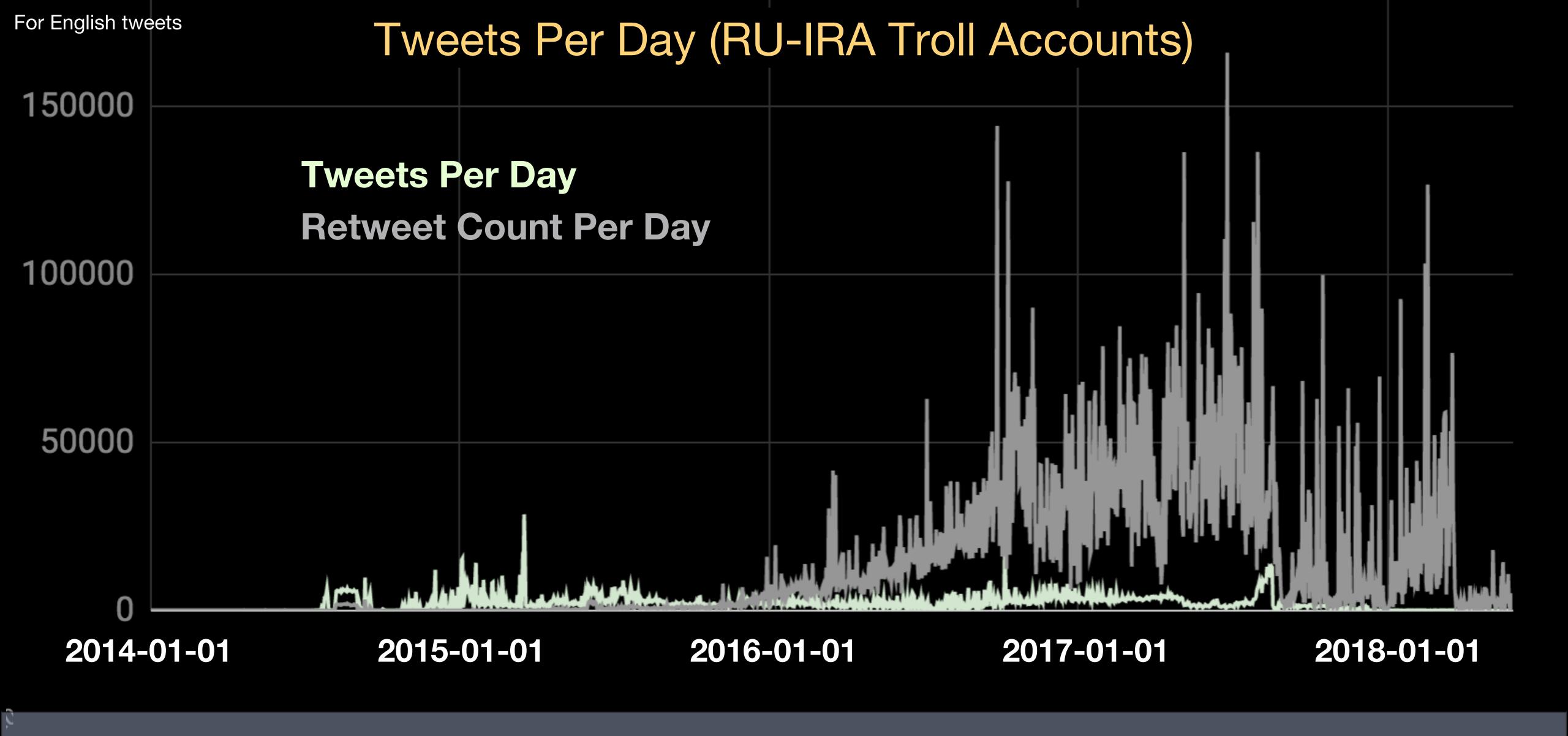


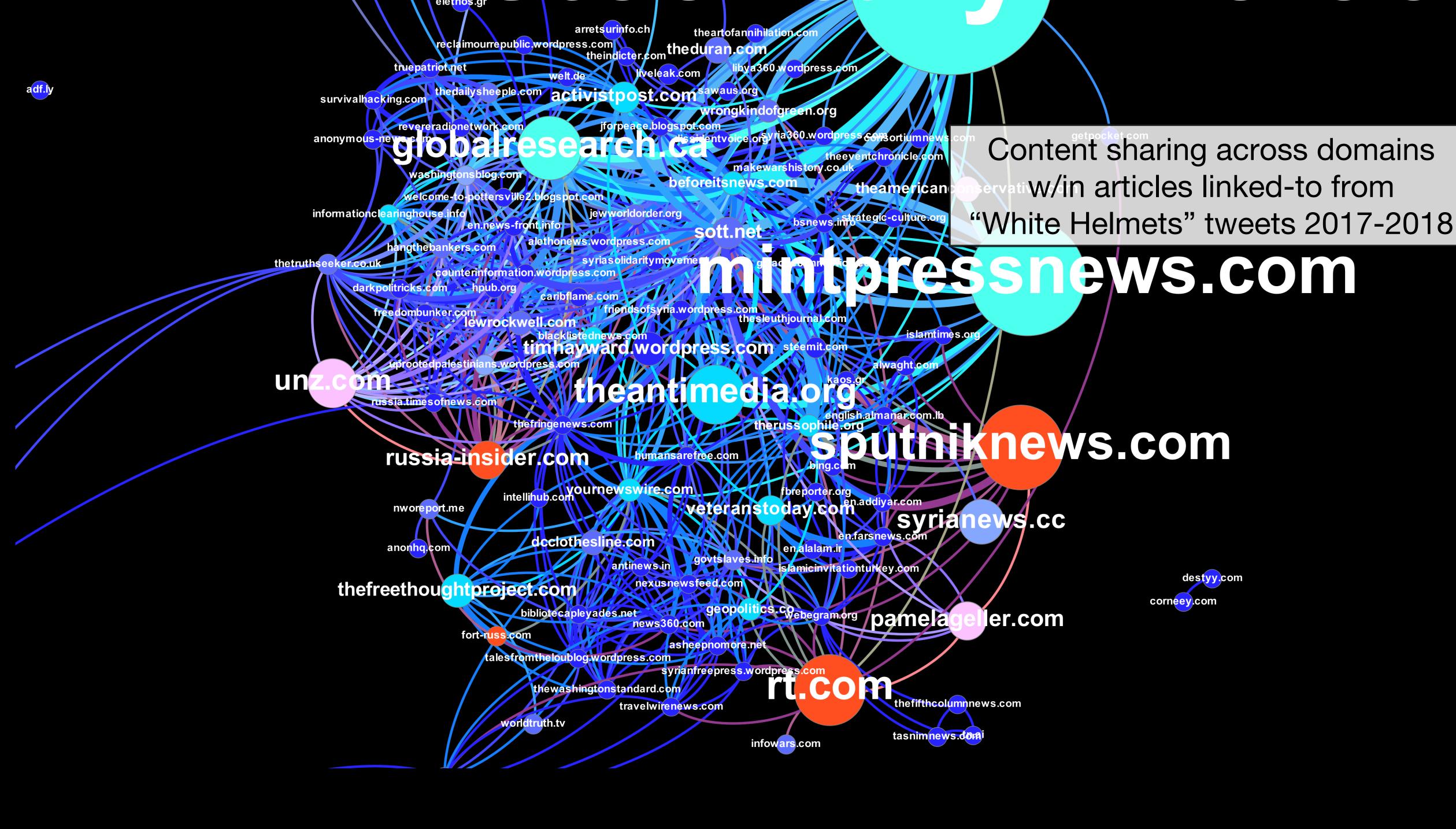


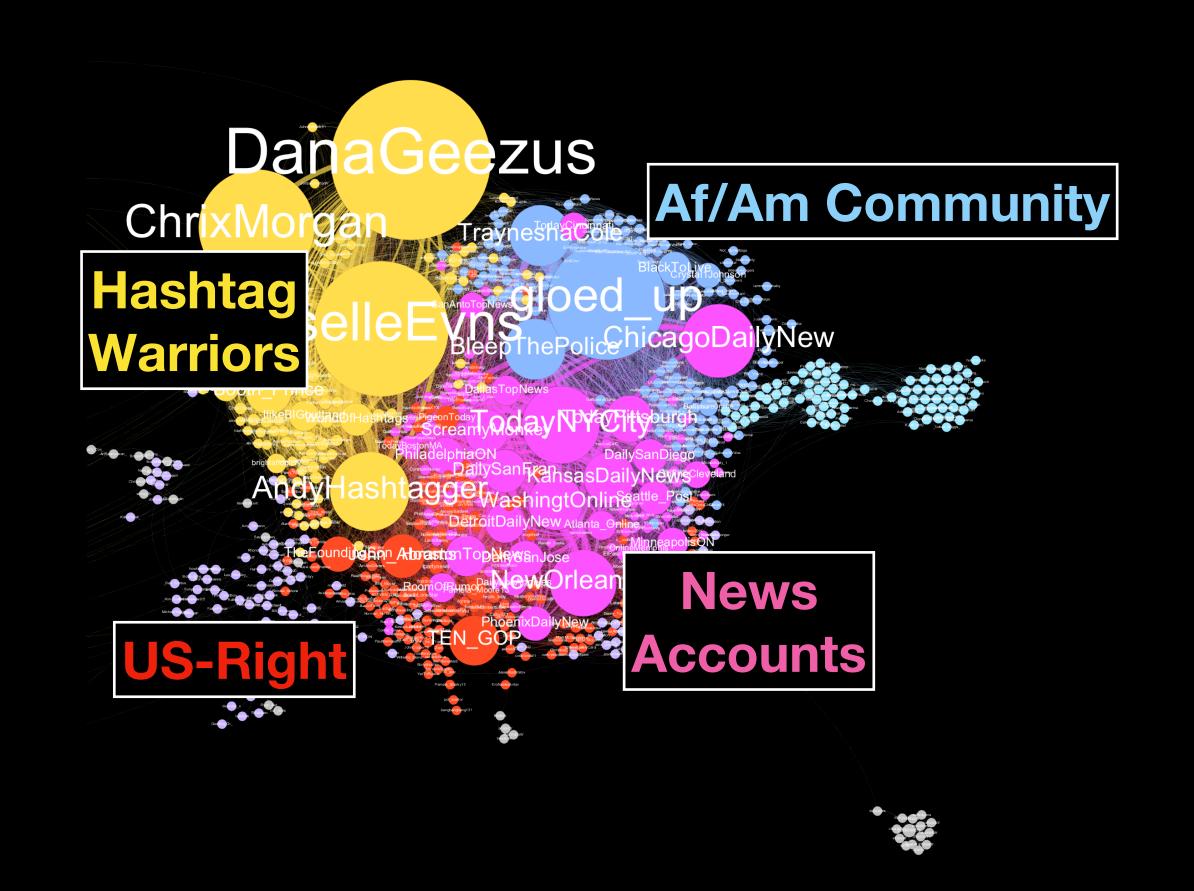
Cluster	# Accounts	Total # Tweets	Popular Hashtags	
Total	3259	3,261,931	follow, love, life, conservative, trump, news, maga, god, tcot, christian, people, proud, patriot, america, country, best, 2a, family	
News	96	900,342	news, DM, more, breaking, conservative, not, tcot, local, entertainment, sports, endorsements, 24, christian, politics, weather	
Af/AmComm unity	134	540,041	blacklivesmatter, black, people, news, blacktolive, blm, DM, staywoke, blacktivist, justice, god, nigga, color, america	
US-Right Conservative	154	510,156	conservative, tcot, wakeupamerica, christian, pjnet, god, patriot, country, rednationrising, 2a, godblessamerica, ingodwetrust, family	
HashtagWarri ors	127	388,188	life, love, one, only, better, never, once, living, world, remember, man, nothing, things, more, live, success, dreams	

Tweets Per Day (RU-IRA Troll Accounts)

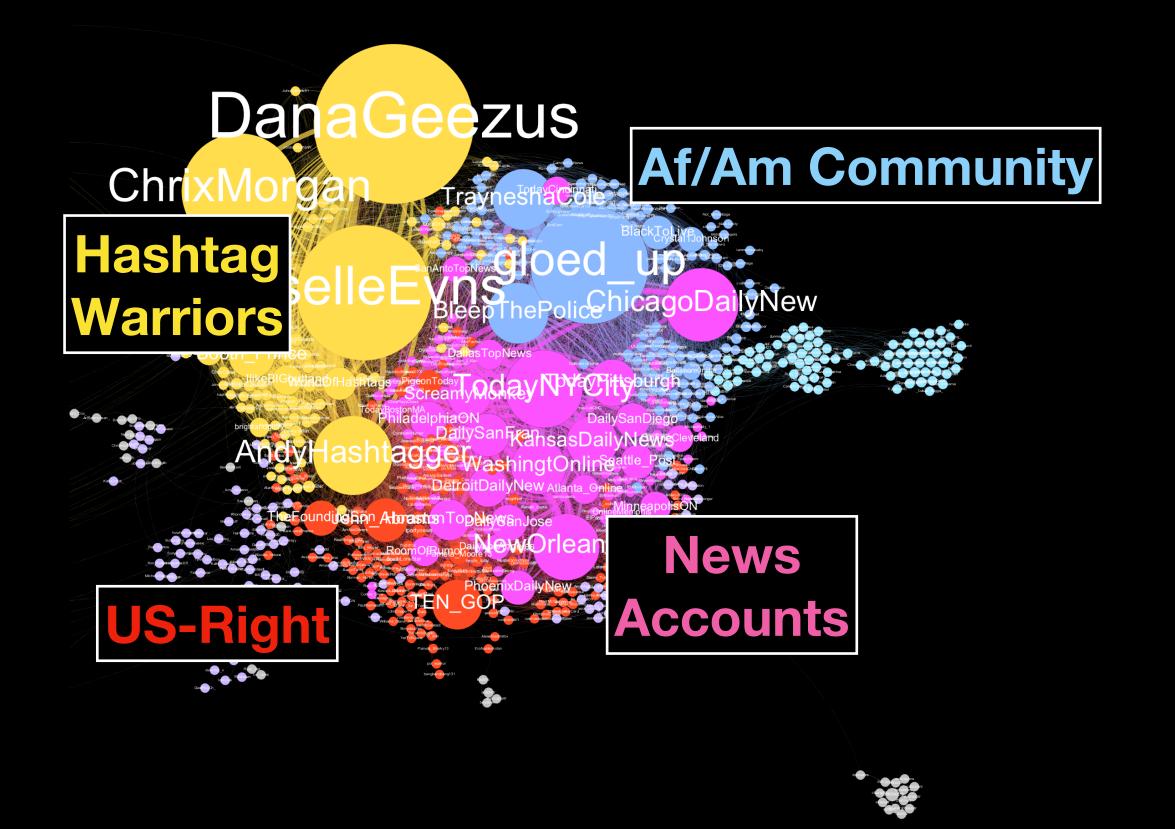




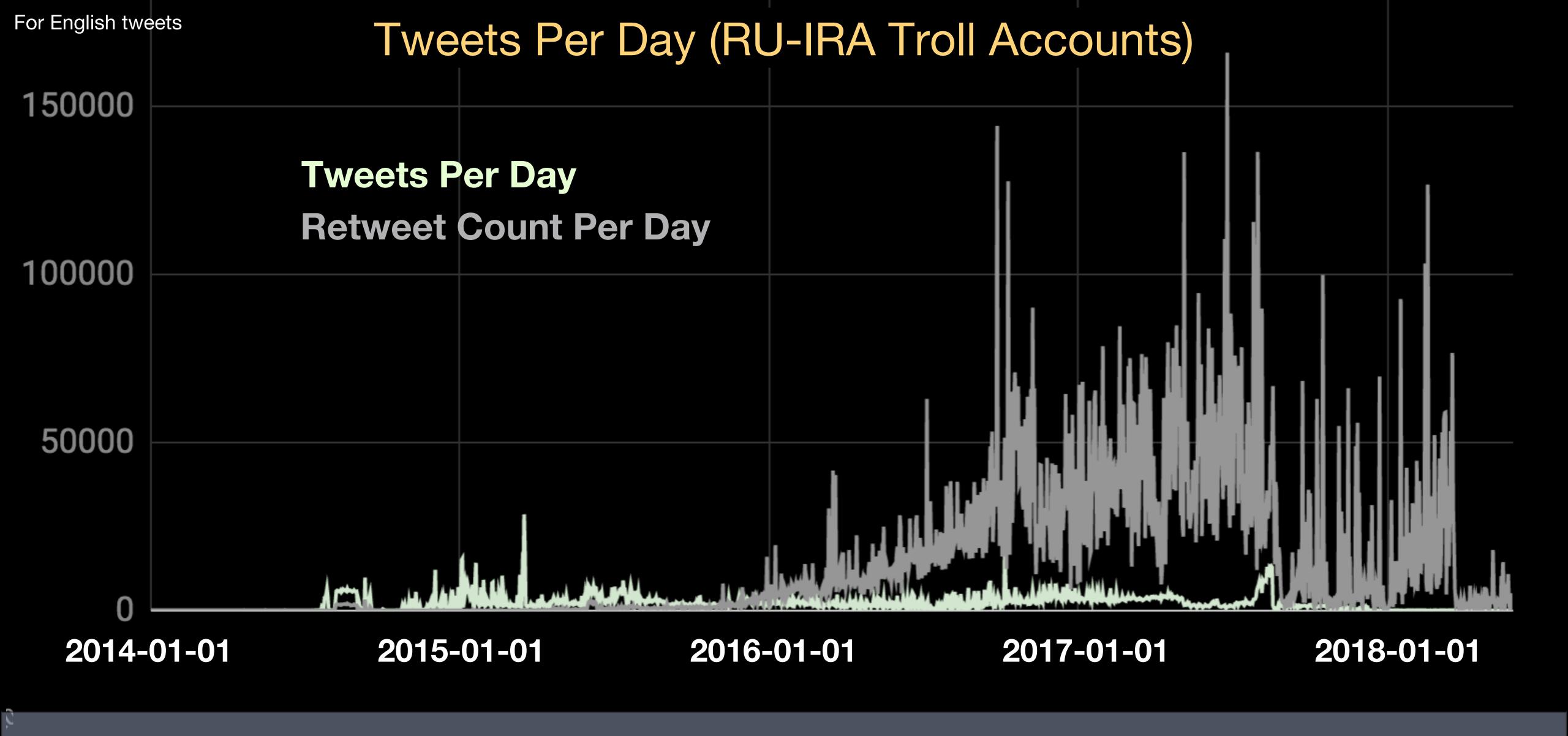


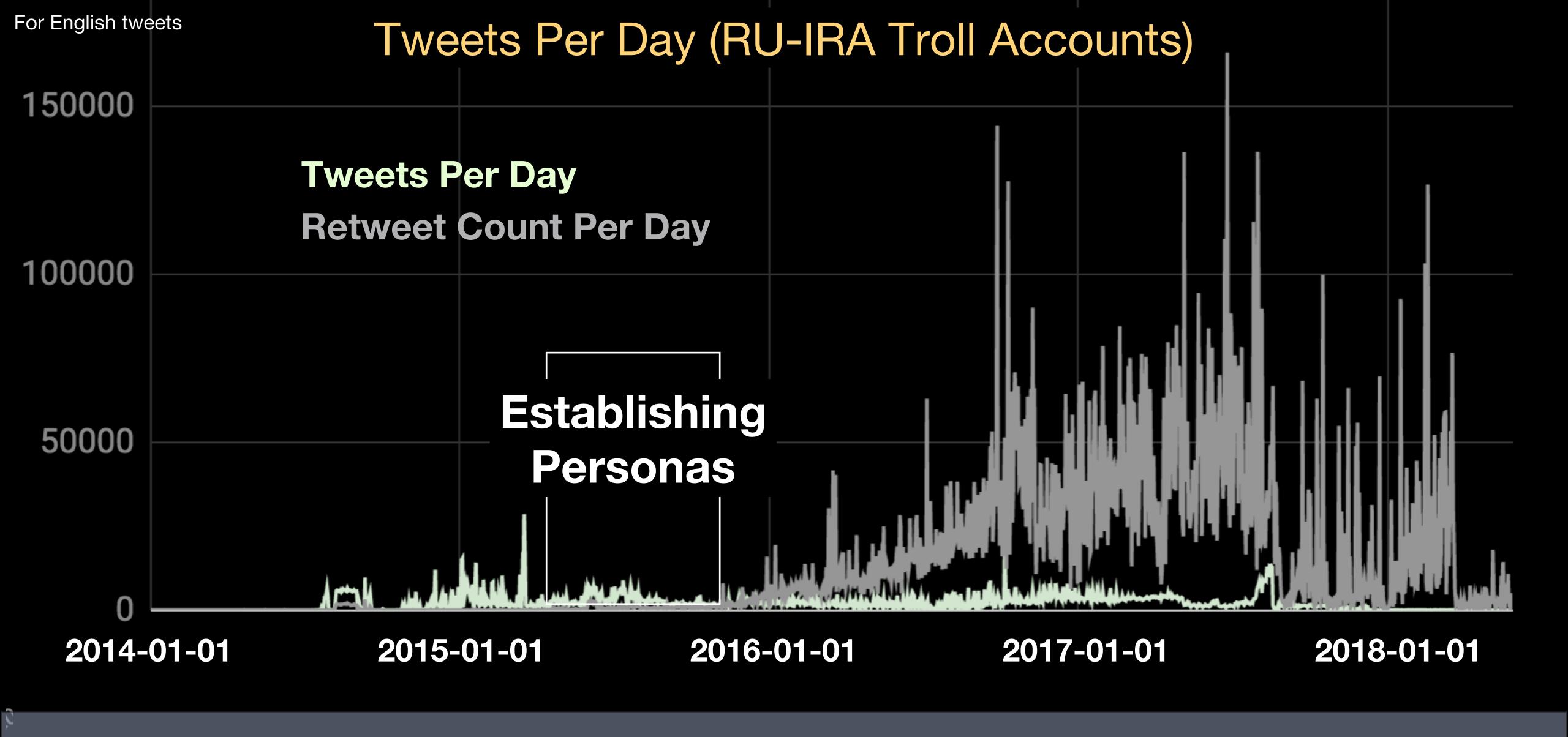


Cluster	Num Accounts	Prominent Hashtags in Profiles	
Total	3259	follow, love, life, conservative, trump, news, maga, god, tcot, christian, people, proud, patriot, america, country, best, 2a, family	
News	96	news, DM, more, breaking, conservative, tcot, local, entertainment, sports, endorsements, 24, christian, politics, weather	
Af/Am CommBLM Activists	134	blacklivesmatter, black, people, news, blacktolive, blm, DM, staywoke, blacktivist, justice, god, nigga, color, america	
US-Right Conservative	154	conservative, tcot, wakeupamerica, christian, pjnet, god, patriot, country, rednationrising, 2a, godblessamerica, ingodwetrust	
HashtagWarrior s	127	life, love, one, only, better, never, once, living, world, remember, man, nothing, things, more, live, success, dreams	



Cluster	# Accounts	Total # Tweets	Sum RT Count
Total	3259	3,261,931	21,913,266
News	96	900,342	380,387
Af/Am CommBLM Activists	134	540,041	7,869,857
US-Right Conservative	154	510,156	10,837,572
HashtagWarrio rs	127	388,188	111,584







Follow

The FAKE NEWS media (failing @nytimes, @NBCNews, @ABC, @CBS, @CNN) is not my enemy, it is the enemy of the American People!

1:48 PM - 17 Feb 2017

52,720 Retweets **162,029** Likes



























