

Examining Strategic Integration of Social Media Platforms in Tracking Disinformation Campaign Coordination

Muhammad Nihal Hussain, Kiran Kumar Bandeli, Samer Al-Khateeb, Serpil Tokdemir, Nitin Agarwal
Collaboratorium for Social Media and Online Behavioral Studies (COSMOS)
University of Arkansas – Little Rock
{mnhussain, kxbandeli, sxalkhateeb, sxtokdemir, nxagarwal}@ualr.edu

Abstract

Social media is a widely used communication platform that affords easier sharing and access to information. Although social media is used for benign purposes, a few use this platform for deviant activities such as cyberbullying, cyber warfare or propaganda, disinformation and fake news dissemination to influence the masses. With the availability of inexpensive and ubiquitous mass communication tools like social media, disseminating hoax, false information, and propaganda is both convenient and effective. Social media in general and blogs in particular act as virtual spaces where narratives are framed. In order to generate discourse, web traffic needs to be driven to these virtual spaces. Social media platforms such as Twitter, Facebook and other websites are therefore used as vehicles to disseminate the content. This link between blogs and social media platforms is vital to examine disinformation campaigns. In this research, we examine the role of media orchestration strategies, more specifically, cross-media and mix-media strategies in conducting disinformation campaigns. The research presents in-depth examination of the information networks using social network analysis and cyber forensic-based methodology, to identify prominent information actors and leading coordinators of the disinformation campaigns. Using the developed research methodology, the study reveals a massive disinformation coordination campaign pertaining to the Baltic region conducted primarily on blogs but strategically linking to a variety of other social media platforms, e.g., Twitter, Facebook, YouTube, VKontakte, among others.

Keywords: Social Media, Blogs, YouTube, Twitter, Social Network Analysis, Cyber Forensics, Disinformation, Mix Media, Cross Media.

1. Introduction

During the 2011 Egyptian revolution, the 2012 Arab Spring, and the subsequent Occupy movements worldwide, blogs and social media were regarded as powerful democratizing tools. These modern social information systems have since been largely considered as positive vehicles of transformation – be it social, political, or economic. However, the democratizing power of blogs and social media has been recently harnessed by state/non-state actors, extremists, and terrorist groups to influence online discourse, steer mass thinking, and polarize communities, posing a dangerous force against democracy. Coupled with the proliferation of high-speed Internet-enabled mobile devices, we are in an age where a lie can travel around the world several times reaching literally our fingertips before the truth has had a chance to verify the claims (Vosoughi et al., 2018).

Weblogs, or blogs, are first-person diary entry style postings presented in reverse chronological order. Absolutely zero cost to setup a blog has made blogs one of the most popular platforms for people to voice their opinions. Blogs have become the mode of carriage for all other media, i.e., everything digital (photos, videos, etc.) migrates to blogs. Information consumers are now the producers as well as distributors. These beliefs and practices have led to a meteoric rise in the popularity of blogs, and their influence in reshaping political communication. The growth of blogs ranks among the highest for any web-based forum (Jost & Hiploitt, 2006). With less than one million blogs in existence at the start of 2003, the number of blogs doubled every six months through 2006. By 2011, there were 158 million blogs with more than 1 million posts being produced every day. According to recent estimates, this number has grown to over 3 million new posts being produced in the blogosphere¹. According to WordPress, over 409 million people view more close to 22 billion pages each month². Most assume that blogs are empowering ordinary citizens and expanding the social and ideological diversity of the voices that find an audience. Blogs are assumed to make political discourse less exclusive hence making blogs fertile ground for ideal *citizen journalism*. Many of these beliefs were mistaken (Hindman, 2008). Free to use, low barrier of publication, and a casual environment of blogosphere puts the quality of the information presented on these blogs at a great risk. Though there are several million blogs, a very tiny fraction maintains good readership. Moreover, these voices are quite unrepresentative of the broader electorate. Blogs have done far less to amplify the political voice of average citizens. Instead certain narratives get amplified. Low barrier to publication have guaranteed anyone with anything on mind – true or false, fact or opinion, fair or biased – can post it on a blog that is available for the entire world to peruse. At a time when people like to get their news from

¹ <http://www.worldometers.info/blogs/> (last accessed June 3, 2018)

² <https://wordpress.com/activity/> (last accessed June 3, 2018)

social media rather than mainstream media, irresponsible citizen journalism poses a threat to democratic principles and institutions by misrepresenting facts and information. Pew Research Center conducted a poll in the U.S. on reputable sources of information (Barthell and Mitchell, 2017) and reported that over one-third (34%) people trusted news from social media sources. Over three-fourth (77%) people trusted information from friends and family shared through a variety of means including blogs and social media channels. These statistics show the dangerous ability of blogs and social media in conducting influence operations to manipulate public discourse.

Plenty of empirical evidence exists that demonstrates the role blogs have played in the constant barrage of fake news and misinformation during various regional as well as global geopolitical events during the last several years. The 2016 U.S. Presidential elections (Subramanian, 2017) is one of the most prominent examples, where several misinformation-riddled stories were planted in clickbait-driven post truth media for financial and political incentives. Macedonian teens tapped into the digital gold rush by setting up several blogs with content copied verbatim from alt-right news sites. During the Ukraine-Russia crisis, sites like LiveJournal, blogging platforms, and ВКонтакте (VKontakte – a Russian social media platform) have been used as propaganda machines to justify Kremlin’s policies and actions (Allen 2014, Bohlen 2014). According to Interpret Magazine, Kremlin recruited over 250 trolls, each being paid \$917 per month to work round the clock to produce posts on social media and mainstream media. These trolls would manage a stream of invective against unflattering Western articles about Russia and pro-Ukrainian media by posting several comments and blog posts a day using multiple ‘sock puppet’ accounts. Such troll armies (or more commonly known as ‘web brigades’) piggyback on the popularity of social media to disseminate fake pictures and videos and coordinate some of the very effective disinformation campaigns, to which even legitimate news organization could fall prey. To stem the tide of fakery or at least make people aware, online crowdsourcing-based efforts like StopFake.org and euvsdisinfo.eu have been created to identify and debunk fake imagery and stories about the war in Ukraine. However, such efforts are severely limited and easily outnumbered by the vast troll armies.

Discussions on blogs could spill over to mainstream media legitimizing the information. In August 2016, while a vigorous national debate was underway on whether Sweden should enter a military partnership with NATO, officials in Stockholm suddenly encountered an unsettling problem: a flood of distorted and outright false information on social media, confusing public perceptions of the issue (MacFarquhar, 2016). The claims were alarming: If Sweden, a non-NATO member, signed the deal, the alliance would stockpile secret nuclear weapons on Swedish soil; NATO could attack Russia from Sweden without government approval; NATO soldiers, immune from prosecution, could rape Swedish women without fear of criminal charges. They were all false, but the disinformation spilled into the traditional news media. As the defense minister, Peter Hultqvist, traveled the country to promote the pact in speeches and town hall meetings, he was repeatedly grilled about the bogus stories.

This research begins by examining blogs riddled with mis/disinformation to identify common characteristics that are developed as heuristics to detect ‘fake-news’ blogs. We further explore the role blogs play in distributing mis/disinformation. Blogs merely act as virtual spaces where narratives are framed, however to generate discourse, web traffic needs to be driven to these virtual spaces. Several investigations have reported various forms of social media (e.g., Twitter, Facebook, YouTube) are strategically used to coordinate cyber propaganda campaigns (Al-khateeb et al., 2018). Nine out of ten bloggers have Facebook accounts. 78% of bloggers use Twitter for promoting their content. This percentage is higher, i.e., almost 90% for professional and full-time bloggers. In addition to bloggers promoting their content themselves, studies (Agarwal et al., 2017) have widely reported exploitation of computer programs, also known as bots (social bots or botnets), in massive amplification of the content dissemination via Twitter. YouTube, another fastest growing social media platform, is being increasingly exploited for behavioral steering, with various production styles catering to specific demographics (teens and youth) subjecting the viewers to conspiracy theories, disinformation campaigns, and radicalizing ideologies. Prolific linking of YouTube videos in tweets, blogs, Telegram posts, etc. has led to an unprecedented convenience in framing narratives, disseminate it wildly, and drive online traffic to develop rich discourse. In addition to content promotion, active media integration strategy helps in artificially boosting search ranking – a technique known as *link farming* is a well-known search engine optimization strategy. Gaming search engines using prolific linking of blogs across social media ecosystem is now a part of the modern cyber influence operations. This research aims to peel the layers of the complex media integration strategy to examine the role of cross-media and mix-media strategies in conducting disinformation campaigns. By further examining the information flows, we attempt to construct blog and social media networks responsible for dissemination of disinformation.

The presentation will demonstrate an in-depth examination of information networks using social network analysis-based and cyber forensic-based methodologies to identify prominent information leaders and brokers coordinating the disinformation campaigns. Using Blogtrackers (Hussain et al., 2017), YouTubeTracker, and Focal Structure Analysis (Sen et al., 2016) tools, we will demonstrate unique ways of tracking disinformation campaigns that leverage a mix of various social media platforms to coordinate the campaigns.

Currently, the United States and our global partners are in the infancy of where participatory media, technology, and policy meet — a lawless Wild West of social media — calling for rigorous studies on sociotechnical behavioral modeling, content generation and censorship in social media, cyber-threat assessment, cyber-diplomacy, cyber-human systems, or social computing technologies in general, to develop methodologies to diagnose novel pathologies of online social media. This research is a step towards that direction.

Acknowledgments Statement

This research is funded in part by the U.S. National Science Foundation (IIS-1636933, ACI-1429160, and IIS-1110868), U.S. Office of Naval Research (N00014-10-1-0091, N00014-14-1-0489, N00014-15-P-1187, N00014-16-1-2016, N00014-16-1-2412, N00014-17-1-2605, N00014-17-1-2675), U.S. Air Force Research Lab, U.S. Army Research Office (W911NF-16-1-0189), U.S. Defense Advanced Research Projects Agency (W31P4Q-17-C-0059) and the Jerry L. Maulden/Entergy Endowment at the University of Arkansas at Little Rock. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the funding organizations. The researchers gratefully acknowledge the support.

References

- Agarwal, Nitin, Samer Al-khateeb, Rick Galeano, and Rebecca Goolsby. 2017. Examining The Use Of Botnets And Their Evolution In Propaganda Dissemination. *Defence Strategic Communications* 2, (2017), 87–112.
- Al-khateeb, Samer , Muhammad Hussain, and Nitin Agarwal. 2018. Leveraging Social Network Analysis & Cyber Forensics Approaches to Study Cyber Propaganda Campaigns. *Social Network and Surveillance for Society*. T. Ozyer and S. Bakshi (Eds.). Lecture Notes in Social Networks, Springer.
- Allen, M. 2014. Kremlin’s “social media takeover”: Cold War tactics fuel Ukraine crisis. *Democracy Digest*. Retrieved December 6, 2014 from <http://www.demdigest.net/kremlins-social-media-takeover-cold-war-tactics-fuel-ukraine-crisis/>
- Barthel, Michael and Amy Mitchell. 2017. Americans’ Attitudes About the News Media Deeply Divided Along Partisan Lines. Pew Research Center’s Journalism Project. Retrieved July 30, 2017 from <http://www.journalism.org/2017/05/10/americans-attitudes-about-the-news-media-deeply-divided-along-partisan-lines/>
- Bohlen, Celestine. 2014. Cold War Media Tactics Fuel Ukraine Crisis. *The New York Times*. Retrieved December 6, 2014 from <https://www.nytimes.com/2014/03/11/world/europe/cold-war-media-tactics-fuel-ukraine-crisis.html>
- Hindman, Matthew. 2008. *The myth of digital democracy*. Princeton University Press.
- Hussain, Muhammad Nihal, Ghouri Mohammad Saaduddin and Nitin Agarwal. 2017. Blog Data Analytics Using Blogtrackers. International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS 2017) (Demo Track), July 5 - 8, Washington D.C., USA.
- Jost, Kenneth and Melissa J. Hipolit. 2006. *Blog explosion*. CQ Press.
- MacFarquhar, Neil. 2016. A Powerful Russian Weapon: The Spread of False Stories. *The New York Times*. Retrieved July 23, 2017 from <https://www.nytimes.com/2016/08/29/world/europe/russia-sweden-disinformation.html>
- Şen, Fatih, Rolf Wigand, Nitin Agarwal, Serpil Tokdemir, and Rafal Kasprzyk. 2016. Focal structures analysis: identifying influential sets of individuals in a social network. *Social Network Analysis and Mining* 6, 1 (April 2016), 17. DOI: 10.1007/s13278-016-0319-z
- Subramanian, S. 2017. The Macedonian Teen Who Mastered Fake News: Inside the Macedonian Fake News Complex. *WIRED*. Retrieved May 9, 2017 from <https://www.wired.com/2017/02/veles-macedonia-fake-news/>
- Vosoughi, Soroush, Deb Roy, and Sinan Aral. 2018. The spread of true and false news online. *Science* 359, 6380 (2018), 1146–1151.