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COMPUTATIONAL PROPAGANDA AND SOCIAL MEDIA: GLOBAL PERSPECTIVES

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Paper #2: Marc Owen Jones, University of Exeter
Paper #3: Alex Hogan and Saiph Savage, ETIC Lab
Paper #4: Samantha Bradshaw, Oxford Internet Institute

Panel Overview

The Internet was initially seen as a democratising technology that would redistribute power to networked individuals, break the control of information gatekeepers leading to more diverse information and foster an online public sphere in which networked individuals could discuss issues, reaching conclusions that would contribute to the political process (Rheingold, 1993; Shapiro, 2000).

However, with the rise of social media, the control of online distribution channels has been concentrated into a small number of hands, with new and less accountable platforms replacing traditional media gatekeepers (Lovink, 2011). As online spaces have become domesticated, their participatory potential has been undermined by colonisation by the market, censorship by organisations, states and industries, and appropriation by political and cultural elites (Cammaerts, 2008).

Social media has become an increasingly important source of news for Internet users. In the US and UK, direct entry to the website of the news provider remains the most common way of accessing online news. However, social media also takes a large chunk with 35% of people in the US and 25% in the UK accessing news via social media; in Hungary, Greece and Brazil social media is the most common way of accessing online news with more than 50% of people accessing news via social media (Newman, Fletcher, Levy, & Nielsen, 2016).

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In addition to users obtaining news information on social media, users posts are also seen as important predictors of public sentiment in elections and other political issues (Gayo-Avello, 2012) and the social information about one's online connections' political opinions and intentions has been shown to influence offline voting behaviour (Bond et al., 2012).

This situation has created a structure ripe for exploitation. Rather than becoming a place for the empowerment of networked individuals, rational debate and diverse information, recent events had pointed to the acceleration of online echo chambers and concerted efforts to distribute misleading or false information or to manipulate the online information environment for political purposes.

These issues rose to a head in the 2016 U.S. presidential election, with automated accounts contributing between 20 and 25 percent of the Twitter traffic about the election during the days leading up to the vote; there was evidence of much greater automation in pro-Trump as opposed to pro-Clinton accounts, with highly automated pro-Trump activity outnumbering pro-Clinton five to one. (Howard, Woolley, & Kollanyi, 2016). By producing a large number of tweets using automation, these accounts, some of which are designed to mimic regular users, flood the public opinion environment on these platforms, play on the way that these platforms calculate popular or trending content and spread particular ideas with the force of automated technology.

There have, similarly, been recent concerns about the spread of misinformation (dubbed "fake news") online. It was widely reported that fake news stories generated more engagement on Facebook than those from major news outlets during the U.S. election (Silverman, 2016). Prominent online platforms such as Facebook, Twitter and Google have announced measures to tackle false information, automation and online harassment (Solon & Wong, 2016) (other references) and in January 2017 the UK government announced an inquiry into fake news distributed on social media (UK Parliament, 2017).

These issues have recently sprung into the headlines but there is still a great deal of misinformation about this misinformation. Furthermore, the vast majority of discussion about these issues has focused on U.S. (and U.K.) politics, ignoring how these issues might play out in different political systems or different media systems. Our proposed panel draws together four papers that address the issues of computational propaganda on social media from a global perspective and taking both citizen-centred and state-centred approaches.

The first paper presents a study of the Chinese state's social media propaganda strategy that shows, contrary to established wisdom, that this strategy focuses on distraction and positive propaganda rather than attacking critics.

The second paper turns attention to the Middle East, documenting how anti-Shia and anti-Iranian hate bots have flooded conversation about political issues on Twitter in Gulf states, jeopardising free speech and drowning out legitimate debate.

The third paper provided a grounded study of alt-right communities on 4Chan in the lead up to the U.S. Presidential election, providing a model of communication in these social media communities can lead to collective action and how active participants in these communities have now started to move into other political spaces, such as the French election.

The fourth, and final, paper zooms out to provide a global picture of social media manipulation by state actors, comparing the size, scale and extent of this practice in the 25 countries with the highest global military expenditures.

Together these four papers will provide global overview of the burgeoning practice of computational propaganda, techniques of influencing human action through the manipulation of emotions and representations using automated, technological or online means. The panel will be chaired by Professor Phil Howard, head of the computational propaganda project at the Oxford Internet Institute.

References

Bond, R. M., Fariss, C. J., Jones, J. J., Kramer, A. D. I., Marlow, C., Settle, J. E., & Fowler, J. H. (2012). A 61-million-person experiment in social influence and political mobilization. *Nature*, *489*(7415), 295–298. https://doi.org/10.1038/nature11421

Gayo-Avello, D. (2012). 'I Wanted to Predict Elections with Twitter and all I got was this Lousy Paper' -- A Balanced Survey on Election Prediction using Twitter Data. *arXiv:1204.6441 [Physics]*. Retrieved from http://arxiv.org/abs/1204.6441

Howard, P. N., Woolley, S. C., & Kollanyi, B. (2016). Bots and Automation over Twitter during the First U.S. Presiden tial Debate. Retrieved from http://politicalbots.org/wp-content/uploads/2016/10/Data-Memo-First-Presidential-Debate.pdf

Lovink, G. (2011). *Networks without a cause: a critique of social media*. Cambridge, UK ; Malden, Mass: Polity.

Newman, N., Fletcher, R., Levy, D. A., & Nielsen, R. K. (2016). *Reuters Institute digital news report 2016*. Retrieved from http://reutersinstitute.politics.ox.ac.uk/sites/default/files/Digital-News-Report-2016.pdf?utm_source=digitalnewsreport.org&utm_medium=referral

Rheingold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier*. MIT Press.

Shapiro, A. L. (2000). *The Control Revolution: How the Internet is Putting Individuals in Charge and Changing the World We Know* (2nd.Printing edition). New York: PublicAffairs.

Silverman, C. (2016, November 16). This Analysis Shows How Viral Fake Election News Stories Outperformed Real News On Facebook. Retrieved 20 February 2017, from

https://www.buzzfeed.com/craigsilverman/viral-fake-election-news-outperformed-real-news-on-facebook

Solon, O., & Wong, J. C. (2016, December 16). Facebook's plan to tackle fake news raises questions over limitations. *The Guardian*. Retrieved from https://www.theguardian.com/technology/2016/dec/16/facebook-fake-news-system-problems-fact-checking

UK Parliament. (2017, January 30). 'Fake news' inquiry launched. Retrieved 20 February 2017, from https://www.parliament.uk/business/committees/committees-a-z/commons-select/culture-media-and-sport-committee/news-parliament-2015/fake-news-launch-16-17/

COMPUTATIONAL PROPAGANDA AND THE NETWORKED CITIZEN

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Extended Abstract
Computational propaganda is a rising phenomenon to which a great deal of empirical research has been devoted. However, the field is still undertheorized and disconnected with previous academic work on propaganda and political participation. This paper will establish a definition of computational propaganda, anchored in existing theories of propaganda. Drawing from this existing work on propaganda, it will argue that the landscape of propaganda has profoundly changed in the Internet age and this new category of computational propaganda is necessary to draw attention to this unique phenomenon. After having established this definition of computational propaganda and the urgent need to understand how it is affecting political processes, the second part of this paper will discuss how computational propaganda interacts with different theories of political participation such as the public sphere, agonistic pluralism, monitorial or latent citizenship or ideas of Ideological correctness prominent in authoritarian contexts.

SECTARIAN TWITTER BOTS, THEIR 'PUPPET MASTERS', AND AUTOMATED HATE SPEECH IN THE PERSIAN GULF

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Internet Propaganda in the Gulf

Since the Arab Uprisings in 2011, social media and the internet has been a battleground for both activists and governments, who have been attempting to adapt to emerging technologies to pursue either their emancipatory or social control goal needs. The more 'dystopian' (to excuse the cliché) side of the debate in Bahrain, which focuses on the use of internet as a device that closes avenues of free speech, has been studied extensively by various scholars and organisations (Jones, 2013; Marczak et al, 2014; Bahrain Watch 2016). This paper continues in the vein of examining how new technologies can be used as a tool to enforce hegemonic order, but focuses specifically on computational propaganda in the Gulf. It finds that since 2012, Twitter has been flooded with millions of automated anti-Shia and anti-Iranian hate bots. This study reveals that at its peak, the bots account for over 50% of tweets sent per day on the #Saudi hashtag. In addition to documenting the dangers such tweeting poses to civil society, especially given escalating conflict in the region, the paper also reveals innovative ways to trace the providence of such bots by locating through investigative tracing the programmer of a specific subset of accounts operating on the #Saudi hashtag.

Anti- Social Bots and Puppet Masters

There has been increasing academic attention on the potential detrimental implications of 'fake news', propaganda, and Twitter bots. As Ferrara et al (2015) state, "While many bots are benign, one can design harmful bots with the goals of persuading, smearing, or deceiving'. Indeed, 'These bots mislead, exploit, and manipulate social media discourse with rumors, spam, malware, misinformation, slander, or even just noise' (Ferrara et al, 2015). According to Shorey and Howard (2016), social bots can attack activists and spread propaganda. Through the use of hashtag spamming and attempted trend creation (Gallagher, 2015), such bots are potentially harmful to civil society and stability as they impinge on free speech and distort the public sphere (Maréchal, 2016). While efforts have been made to determine the presence of 'bots or not', as Ferrara et al (2015) note, more effort needs to be expended in finding bot masters.

> If social bots are the puppets, additional efforts will have to be directed at finding their "masters." Governments and other entities with sufficient resources have been alleged to use social bots to their advantage. Assuming the availability of effective detection technologies, it will be crucial to reverse-engineer the observed social bot strategies: who they target, how they generate content, when they take action, and what topics they talk about. A

systematic extrapolation of such information may enable identification of the puppet masters

Identifying the 'puppet masters' is an endeavor that can forge an important link between understanding bots and their masters. Focusing on this connection can help shed light on the purpose of bots, and the policies and environment that facilitate their creation, whether personalistic, legislative, and ideological.

The Tweets and the Findings

This is one of the first studies that examines sectarian bots and their providence. Through collecting millions of tweets on various Gulf-specific hashtags between June 2016 and March 2017, and conducting process tracing using Google Sheets and Mongod Databases, this work determines the identity of the individual programmer behind the software generating the majority of bots on the Saudi hashtag. It also surmises that a Saudi Arabian Satellite Company utilized this software to promote sectarian and anti-Iranian discourses.

In addition to finding the providence of these bots; this research determines that the volume of such accounts jeopardize free speech by; engaging in sectarian (anti-Shia) discourse, promoting anti-Iranian sentiment; and drowning out legitimate debate. In addition, they lionize the current leadership in Saudi and tweet on hashtags that may be critical of the Saudi or Bahraini leadership.

As a consequence of this proliferation of bots, which account for over 50% tweets on certain regional hashtags, this paper argues that Twitter is becoming less and less effective as a tool for critical communication in the region, tying in with the debate about whether "Twitter has become too much noise and not enough signal" (Perras, 2015). Similarly, this research raises questions about the effectiveness of organizations like Twitter in tackling abuses to its platform in regions such as the Middle East and the shortcomings of attempting to establish normative behavioral rules of bot use when dealing with unaccountable agencies (Maréchal, 2016).

This research also highlights the role parastatal institutions play in informational control strategies. By following concerns in repression studies of moving away from state-centric actors, this research exposes the fuzzy line between non-state and state institutions in engaging in counter-revolutionary or counter-hegemonic practices. Given the existing sectarian conflict in the region, this research argues that the study of such tactics should focus not simply on the potential impact on audiences, but on what their occurrence might tell us about political dynamics and international relations in the region.

References

Bahrain Watch. (2016). "Time for some Internet Problems in Duraz": Bahraini ISPs Impose Internet Curfew in Protest Village. Retrieved from https://bahrainwatch.org/blog/2016/08/03/bahrain-internet-curfew/

Burrough, B. (2016, November). HOW A GRAD STUDENT FOUND SPYWARE THAT COULD CONTROL ANYBODY'S IPHONE FROM ANYWHERE IN THE WORLD, Vanity Fair, Retrieved from http://www.vanityfair.com/news/2016/11/how-bill-marczak-spyware-can-control-the-iphone

Ferrara, E., Varol, O., Davis, C., Menczer, F., and Flammini. A., (2015). The Rise of Social Bots. X, X, Article XX (201X), 11 pages. DOI:http://dx.doi.org/10.1145/0000000.0000000

Gallagher, E. (2015, August). Mexican botnet dirty wars. Presented at the Chaos Communication Camp 2015, Zehdenick, Germany. Retrieved from https://events.ccc.de/camp/2015/Fahrplan/ events/6795.html

Maréchal, N. (2016). Automation, Algorithms, and Politics| When Bots Tweet: Toward a Normative Framework for Bots on Social Networking Sites (Feature). International Journal Of Communication, 10, 10. Retrieved from http://ijoc.org/index.php/ijoc/article/view/6180/1811

Marczak, W., Scott-Railton, J., and Marquis-Boire, M. (2014, August 20-22). When Governments Hack Opponents: A Look at Actors and Technology. Proceedings of the 23rd USENIX Security Symposium. San Diego, CA: Retrieved from https://www.usenix.org/system/files/conference/usenixsecurity14/sec14-paper-marczak.pdf

Owen Jones, M., (2013). Social Media, Surveillance and Social Control in the Bahrain Uprising. Westminster Papers in Communication and Culture. 9(2), pp.69–92. DOI: http://doi.org/10.16997/wpcc.167

Perras, M. Cited in Samuel, A. (2015). How Bots Took over Twitter. Harvard Business Review. Retrieved from https://hbr.org/2015/06/how-bots-took-over-twitter

Shorey, S, and Howard, P. (2016). Automation, Algorithms, and Politics| Automation, Big Data and Politics: A Research Review, International Journal of Communication, Vol. 10, 5032–5055.

GROWTH AND EVOLUTION OF ONLINE AND REAL-LIFE ACTIVISM: THE CASE OF THE_DONALD

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Extended Abstract

In 2016 a new chapter was written by activists influenced by the rise of 4Chan.org and the growth of members and activity on the Alt-Right and The_Donald sub-reddits. Informed and sometimes led by the practices and membership of their predecessors across a number of platforms, a large number of new 'combatants' took up the challenge of working on behalf of an attractive and implicitly disruptive 'mainstream' candidate for the Presidency of the United States. In Donald Trump a large number of young people found a reason to enter into politics. The candidate, his status and message was clearly very appealing. But so too were technologies, venues and means for taking part in the 'debate'. 4Chan, Social media and the Internet was and is their playground and this was an opportunity unlike any before for people of their generation to engage with a subject they found appealing and in a way they could or indeed already had, mastered. The fall-out from their contribution to the success of Donald Trump and the consequential confusion and doubt that surrounds the role, content and future of more mainstream media is still unfolding. We present data that illustrates some of what has happened within that community since the US Presidential election.

Our goal is to understand how the communities evolved both in terms of the change in behaviour of the members but also in the range and focus of their activities, using a framing model classifying the nature of the comments occurring on the main sub-reddits associated with the movement throughout 2016 to identify the nature, frequency and location of the active members and their contributions over time. Tracking the evolution of the member's contributions over time as the well as the growth (or otherwise) of the sub-reddits and the topics of conversation (Trump, Le Pen etc.) as they evolved.

The material for this session has been collected from a number of sources, perhaps the most important being The_Donald sub-reddit itself. Our data is framed by interviews with active members of the community who as new recruits in 2016 absorbed the existing 4Chan/Alt-Right cultural values and techniques and then turned them as they rapidly evolved, to the task of supporting 'The Donald'. Most importantly we can give some insight into what happened after the election, because as we are all beginning to realise, this story is far from over.

Using a content analysis of comments posted on The_Donald, this article examines how the reddit comments were framed to mobilize collective action. Such research is important given that the most critical debates of our time revolves around the "slacktivism hypothesis": if the use of social media increases, civic engagement

ultimately suffers (Katz, J., Michael Barris, and Anshul Jain. 2013, Halupka 2014). In recent years, we have observed that in most political movements while organizers believe that they are creating strong dialog with their audience by engaging on social media (Guo, C., & Saxton, G. D. 2013.) However, this rarely translates into collective action, e.g., the advancement of grassroot movements.

The case of the_Donald subreddit provides us with the exclusive opportunity to study the impact of social media on civic participation during one of the most extreme elections in history. Our hope is that through this study we will better understand social media's role in civic engagement, and the connection between slacktivism and modern activism.

Data Collection and Analysis

Trump formally announced his candidacy on June 16, 2015, becoming an official nominee on July 19, 2016 and a winner on November 9, 2016. We use Google BigQuery to collect 7 months of posts, and comments from The_Donald sub-reddit. The data collection took a snapshot of all activity starting from June, 2016 until January 2017, allowing us to study how people participated in the political movement before, during, and after the election.

Our goal was to obtain a descriptive assessment of how people produced collective action. In particular, we wanted to track how active participants were of The_Donald subreddit, and how they moved into other communities on Reddit. Two research methods were used: depth interviews and content analysis. The interviews were intended to gather the participants motives and expectations to participate in the movement and their willingness to support new related movements such as the French election.

We conduct content analysis of the comments posted in The_Donald sub-reddit considering Gerhards and Rucht's (1992) collective action frames. We study this framing process during the different stages of the Trump political campaign (before, during, and after the election). We examine how the reddit comments were framed to mobilize people and advance the political movement of Donald Trump. We characterize people's participation in the_Donald sub-reddit using analytical techniques focused on examining the framing of social movements. Our aim is to understand the context under which this type of political campaign content gains attention and to investigate the behavioral patterns of active people on the_Donald sub-reddit. In particular, we study how much popular content is attracting citizens to either: (1) discuss current events; (2) propose solutions to current problems; and (3) make calls to action. Notice that these three topics allow us to study the different stages of a collective action. This analysis provides a window into how citizens are organizing collective action within a political movement and what aspect of the collective action is the one.

We used Upwork to hire two, college educated people to categorize the The_Donald posts independently using Gerhards and Rucht (1992) three collective action frames: diagnostic, which define a problem or assign blame; prognostic, which detail possible solutions; and motivational, which incite individuals to act or mobilize. If disagreements

existed we used a third coder to label comments upon which the first two coders had disagreed. We then used a “majority rule” approach to determine the action frame for those comments. With this approach we detected which percentage of comments were motivational or explicitly inciting people to take action during the period studied.

We also counted the number of comments per participant to detect the most active participants on The_Donald and tracked their activities in other reddit channels to study how the movement has started to move into other political spaces such as the French election.

Our work illustrates how rhythms of communication among participants of The_Donald evolved over time and demonstrate that communities that emerge from a political event can sustain beyond a particular political event and evolve. We conclude by discussing possible applications of our findings for the design of future technologies for collective action

References

Benford, Robert D., and David A. Snow. "Framing processes and social movements: An overview and assessment." Annual review of sociology 26.1 (2000): 611-639.

Guo, C., & Saxton, G. D. 2013. Tweeting social change: How social media are changing nonprofit advocacy. Nonprofit and Voluntary Sector Quarterly, 0899764012471585

Halupka, Max. "Clicktivism: A systematic heuristic." Policy & Internet 6.2 (2014): 115-132.

Katz, J., Michael Barris, and Anshul Jain. 2013. The Social Media President: Barack Obama and the Politics of Digital Engagement. New York, NY: Palgrave MacMillan.

GLOBAL CYBER TROOPS: SOCIAL MEDIA AUTOMATION, MANIPULATION, AND TROLLING BY STATE ACTORS

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Global Cyber Troops: Manipulating Public Opinion through Political Bots and State-Sponsored Trolling.

In January 2015, the British Army announced that its 77th Brigade would "focus on non-lethal psychological operations using social networks like Facebook and Twitter to fight enemies by gaining control of the narrative in the information age" (Solon, 2015). The primary task of this unit is to shape public behaviour through the use of "dynamic narratives" to combat the political propaganda disseminated by terrorist organizations. Recent research and journalism has found that the United Kingdom is not alone in allocating troops and funding for manipulating online political discourse (Pham, 2013; Chen, 2015; Hunter, 2015). Instead, this is part of a larger phenomenon whereby state actors are turning to Internet platforms to exert influence over information flows and communication channels.

Cyber troops are government or military staff tasked with influencing public opinion and the behaviour of social media users. Traditionally, scholars have focused on understanding how state actors conduct surveillance, censorship or politically motivated hacks against infrastructure or information (see for example Deibert, 2013). In contrast, cyber troops are responsible for the promotion of government propaganda and the advancement of political ideologies. Although, cyber troops will use traditional offensive cyber tactics such as hacking or surveillance to target users for trolling or harassment campaigns. However, the important distinction between cyber troops and other state-based actors operating in cyberspace is their role in actively shaping public sentiment.

There are many different tools in the cyber troop arsenal available to manipulate opinions, spread propaganda and promote misinformation. One growing trend is the use of political bots to flood social media with spam and fake news during elections or contentious political events to manipulate public opinion or to inflate social media followers, likes, shares and retweets to provide a false sense of popularity (Woolley 2016). Scholars and journalists have uncovered instances of computational propaganda in countries such as Australia (Peel, 2014), Iran (York, 2011), and Russia (Krebs, 2011). Cyber troops also launch state-sponsored hate campaigns, harassment and trolling to silence political dissent and intimidate users online. Some of these "troll farms" are directly a part of a government agency, such as SIBGECOV, part of the Ministry of Communication in Venezuela (Howard, 2015) while other troll farms operate as private government contractors, such as The Agency in Russia (Chen, 2015).

Given that little is known about the differences in capacity, size, methods, and skillset of these practices in different countries, this paper conducts a cross-national study of global cyber troops. Examining the 25 countries with the highest military expenditures in

2015, this paper takes an inventory of budget expenditures, staffing, organizational history, and organizational charters to analyze the size, scale, and extent to which different kinds of political regimes deploy cyber troops to influence and manipulate the digital public. Data is being collected from primary and secondary sources between January 2017 and June 2017. Primary sources of data are being collected from interview transcripts and observational notes with global cyber troops, and secondary sources are being collected from government publications, credible news articles, and peer-reviewed academic studies.

This paper illustrates the extent to which governments are using the Internet and social media platforms to spread propaganda and advance ideology. It will conclude by discussing the implications of cyber troops for democracy and the digital public sphere.

References

Chen, Adrian. (2015). The Agency. *New York Times,* 2 June. https://www.nytimes.com/2015/06/07/magazine/the-agency.html?_r=0

Deibert, Ron. (2015). *Black Code: Surveillance, Privacy and Censorship.* McClelland & Stewart

Howard, M. Forelle, P. Howard, A. Monroy-Hernández, and S. Savage (2015) Political bots and the manipulation of public opinion in Venezuela," *arXiv* (25 July), at http://arxiv.org/abs/1507.07109.

Hunter, Isabel. (2015) Turkish Ruling Party's Social Media Campaigners Deny Being A Troll Army. *The Independent,* www.independent.co.uk/news/world/europe/turkish-president-s-social-media-campaigners-deny-being-a-troll-army-10301599.html

Krebs, Brian. (2011) Twitter bots drown out anti-Kremlin tweets. *Krebs on Security*, 11 December. http://krebsonsecurity.com/2011/12/twitter-bots-drown-out-anti-kremlin-tweets/

Peel, T. (2013). The Coalition's Twitter fraud and deception. *Independent Australia*, 26 August. http://www.independentaustralia.net/politics/politics-display/the-coalitionstwitterfraud-and-deception,5660

Pham, Nga. (2013). Vietnam Admits Deploying Bloggers to Support Government *BBC News,* 12 January. http://www.bbc.com/news/world-asia-20982985

Woolley, Sam (2016) Automating Power: Social Bot Interference in Global Politics. *First Monday,* 21 (4).