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ABSTRACT

The use of digital propaganda during crises and elections to manipulate public opinion, suppress dissent, and diminish activists' voices has been increasingly witnessed in recent times in both developed and developing countries. Digital propaganda refers to the use of machines in addition to human users to interact with humans or run a campaign on the internet, computer and mobile devices designed to deliberately manipulate public opinion during crises or elections. While developing countries continue to have a limited internet base, this has not deterred political actors from integrating the internet into their propaganda strategies. Using Twitter data on two international conflicts between India and Pakistan – the Uri attack and the subsequent Surgical Strike – I show how online public opinion has been manipulated by a handful of sources that are driven by algorithms. Online public opinion has been able to enter the offline domain because of the contextual hybridity and the emergence of a hybrid media system. These findings reflect the limitations of public opinion in the digital age, and call attention to political polarization in the country. I discuss the need to integrate computational techniques with critical analysis of tweets and suspicious Twitter accounts to identify political bots online.

Along with the advances in social and digital media, ways of mobilizing public opinion have emerged, including micro-targeting potential supporters with tailored messages through the use of algorithms and automation. Digital propaganda refers to the use of machines – in addition to human users – to interact with humans, run a campaign online, computer and mobile devices designed to deliberately manipulate public opinion during crises or elections. Although developing countries continue to have a limited internet base, this has not deterred political actors from integrating the internet in their propaganda strategies.[1] In particular, bots – software apps that run automated tasks and conducts interactions with users over the internet – have been deployed to influence public opinion. Bots are used to perform both the benign function of sending automated news feeds or messages on Twitter in bulk, as well as to act maliciously by spreading spam. Concerns have been raised because of the use of malicious political bots to interact on Twitter and other social media platforms to manipulate public opinion (Howard, Woolley, & Calo, 2018; Keller & Klinger, 2019; Woolley & Howard,

2017). Varol, Ferrara, Davis, Menczer, and Flammini (2017) estimate that 9% to 15% of Twitter accounts are bots. In a major crackdown to stop bots, Twitter suspended nearly 70 million accounts in July 2018. Bots are often deployed to spread fake news and orchestrate propaganda (Shao, Ciampaglia, Varol, Flammini, & Menczer, 2017).

While internet connectivity has increased in India with nearly 604 million Indians having access to the internet, this simultaneously affords political actors opportunities to deploy digital propaganda and promote disinformation. There are already many cases of fake news being spread through online platforms, both in India and globally. Understanding the spread of digital propaganda is more imperative in India's evolving hybrid media system, which is informed by thriving traditional media and the rapidly growing number of internet users (Neyazi, Kumar, & Semetko, 2016; Neyazi, 2018). For this study, I collected Twitter data on two international conflicts between India and Pakistan: the Uri attack and the subsequent Surgical Strike. The Uri attack resulted in a media frenzy with various TV news channels calling for a retaliatory attack against Pakistan. Through a critical analysis of collected tweets, I show evidence of the use of bots in the aftermath of 18 September 2016, Uri attack and the Surgical Strike.

Through this study, I show how online public opinion has been manipulated by a handful of public and driven by algorithms reflecting the limitations of public opinion in the digital age having precarious implications for democratic governance. Online public opinion has been able to enter the offline domain because of the contextual hybridity and the emergence of a hybrid media system. The emergence of a hybrid media system has enabled the message emerging in the online domain to quickly enter the offline world, leading to interventions from political actors, civil society groups and grassroots actors besides individual citizens (Chadwick, 2017; Neyazi, 2018). At the same time, political polarization has been increasing in India (Udupa, 2019). One might argue that political polarization has not been driven by the rise of social media, as recent research from the U.S. suggests (Boxell, Gentzkow, & Shapiro, 2017). But at least one empirical study suggests that social media is contributing to growing political polarization in India (Udupa, 2019). It is therefore important to contextualize the discussion within the local cultural milieu to understand the polarization fostered by social media.

In this article, I first review the research on social bots and discuss the theoretical framework before describing the case study. I use secondary data of tweets collected during an important political event, further supported by critical analysis of tweets. I then present the theoretical and policy implications of the findings. This article not only contributes to the growing research on detecting bots, but identifies the threat of digital propaganda on public opinion. Based on the findings, I argue that there is a need to integrate computational techniques with critical analysis of tweets and suspicious Twitter accounts to detect political bots online.

Political bots and public opinion

The growing literature about bots could be broadly divided into three categories. The first group of studies use computational and quantitative methods to detect bots and their activities online. These studies try to detect bots through machine learning (Abokhodair, Yoo, & McDonald, 2015; Davis, Varol, Ferrara, Flammini, & Menczer, 2016; Ferrara, Varol, Davis, Menczer, & Flammini, 2016; Kudugunta & Ferrara, 2018; Varol et al.,

2017), while others show how bots facilitate the spread of fake news (Shao et al., 2017), and have been manipulating public opinion during elections (Howard & Kollanyi, 2016). It is possible to predict users' political orientation and detect bot attacks launched on Twitter, based on behavioral patterns of activity (Metaxas & Mustafaraj, 2010). Botometer, a project based in Indiana University's Network Science Institute, is the most prominent and actively involved in using machine learning to detect bots (Davis et al., 2016; Ferrara et al., 2016). Botometer uses almost 1,200 features to compute bot scores and then give scores on a scale of 0–1, with 0.5 being a threshold for being classified as a Bot. Notwithstanding the various parameters to detect bots, computational methods have their limitations, as the Botometer project admits.

A second genre of research uses critical perspectives and qualitative techniques to discuss how bots could be understood in different contexts. Research in this domain uses the critical approaches to understand the ways bots may affect politics and activism (Karpf, 2016), journalism and newsgathering (Lokot & Diakopoulos, 2016), its ethical and legal aspects (Haeg, 2017), and agency (Guilbeault, 2016; Neff & Nagy, 2016).

The third category of research synthesizes quantitative techniques with the critical perspective. Research in this category is limited and began to emerge from 2015. The Computational Propaganda Project at The Oxford Internet Institute is an example of this category of literature. The current study is an attempt to contribute to this literature by combining empirical findings with a critical analysis of the tweets and their theoretical implications.

Studies to detect political bots have developed various parameters to distinguish bots from humans. Dickerson, Kagan, and Subrahmanian (2014) showed that bots exhibit strong negative emotion as compared with humans. Bots frequently retweet, have longer user names, and are younger accounts (Davis et al., 2016). Such bots accounts are useful in the early stage of spreading false propaganda by rapidly sending messages and targeting influential users (Shao et al., 2017). Some bots are simply passive and do not post any content, and are used to boost the number of followers of an account. Hwang and Woolley (2016) identified two kinds of manipulative political bots – controllers and facilitators. Controller bots are known for carrying activities on social media tantamount to 'fake, manipulate and jam discourse, while facilitator bots work to share, spread and challenge it'. In yet another study, Fazil and Abulaish (2017) identified three kinds of Twitter users based on their interactive behavior with social bots. Active users are those who follow social bots without being followed by them; reactive users respond to social bots following by following them back, while inactive users do not respond to 'follow requests' from social bots. Moving beyond account level bot detection techniques, which require a large dataset, Kudugunta and Ferrara (2018) showed that it is possible to detect bots at the tweet-level: whether a particular tweet is coming from a bot or a human. By using social network analysis, Hegelich and Janetzko (2016) have tried to identify bot-networks and how bots follow one another.

These studies on bot-detection have helped to identify certain behavioral patterns that could be found in bot activities. For example, bot accounts on Twitter often post in huge volume and work in tandem with other bot accounts and begin retweeting the same messages (Schäfer, Evert, & Heinrich, 2017). Bot accounts usually have large followers (though some have few followers), but they also tend to follow a high number of accounts. The bots' activities may create the illusion of popularity by presenting an actor as more

popular than they actually are and thereby affect citizens' public opinion (Keller & Klinger, 2019). Many political parties in different parts of the world have recently been alleged to have used bots during crises to influence public opinion (Woolley & Howard, 2017). Evidence from 2016 – the June Brexit referendum in the UK, and the fall presidential election campaign in the U.S. – suggest that bots are increasingly interfering in political discussion and the democratic process (Bastos & Mercea, 2019; Howard et al., 2018). These developments warrant the need to revisit the relationship between the internet and public opinion.

Contrary to popular expectations that the internet would empower more citizens to engage in the political process and offer space to marginalized groups to engage in democratic deliberations, studies from the U.S. and Europe find that the actors who were empowered in the mass media era remain the same in the digital media era and hence, the same advantages and disadvantages that exist politically offline are reproduced online (Stromer-Galley, 2019). The strategic use of Twitter was also noted by Mustafaraj, Finn, Whitlock, and Metaxas (2011), who showed how a vocal minority could use the platform to amplify their messages by frequent use of hashtags and retweets. There is thus ample evidence that social media is limiting the space for average citizens to debate an issue of public concern because debates on public issues are often hijacked by vocal voices. Further, the speed at which debates take place online subdue reflective space, leaving average citizens vulnerable to the agendas of propagandists. Researchers have cautioned against the automation of political deliberation processes as it distorts public opinion (Keller & Klinger, 2019; Howard et al., 2018). Newspapers and television will discuss the sentiments on social media mistaking it for public opinion instead of calling it 'Twitter Opinion'. India is not immune to these developments (Udupa, 2019). The ubiquity of digital media in India warrant the need to critically analyze whether online public opinion has begun to influence public policies.

Political bots in India

According to a Spamhaus (2018), an organization that classifies different countries based on infected by botnet, describes India and China as the countries worst affected by spambots. Campaigning bots in India did not appear on the scene until recently when at least one study found evidence of use in the nine months running up to the official launch of the national election for the Lok Sabha, India's lower house of Parliament, in March 2014 (Dickerson et al., 2014). All major parties in India appear to have deployed automation in digital messaging strategies to boost followers of their leaders on social media to disseminate party messages, troll opponents on Twitter, and make hashtags trend. For example, it was reported that Indian Prime Minister Narendra Modi got 280,000 followers in one single day, which is nothing short of spectacular (Assisi, 2015). As noted, political bots in other national contexts have been found to manipulate public opinion (Forelle, Howard, Monroy-Hernández, & Savage, 2015). In the context of India's 2014 national election campaign, a report by SocialBakers, an organization with a tool to distinguish between fake and real accounts on Twitter, noted that 'nearly half of Bharatiya Janata Party (BJP)'s Narendra Modi's followers seem to be suspicious' (Woollacott, 2014). The digital presence of the Congress Party's Rahul Gandhi was less evident in 2014, and more emphasis was placed on the traditional campaigning strategies. Nevertheless, automation was used to send campaign messages via Twitter, WhatsApp and SMS on mobile

phones. In one interesting case, former union railway minister, Pawan Kumar Bansal lodged a police complaint in Chandigarh in the last week of December, 2013, after witnessing a sudden rise in his Facebook followers. The former minister complained to the police that his Facebook page had received more than 10,000 likes within a span of 24 hours. One cannot dispute Bansal's claim that those likes were fabricated, but this could also be the instance of botnet work. After Facebook was approached by Chandigarh police, they refused to provide any details on this incident (Sharma, 2014).

In an article published in 2016 in India's leading English newspaper, the *Times of India*, Sarkar (2016) discussed 10 ways that bots can change politics in the country. Interestingly, all features listed were positive and no reference was made to manipulative political bots. Only recently, after the mounting evidence of the presence of bots on social media platforms globally that prompted Facebook and Twitter to take strong measures against manipulative bots, has India begun to take the issue of political bots seriously. With the rise of fact-checker organizations, there has been growing debate about the role of political bots during crises and elections.[2] However, such debates have not stopped political actors from using digital propaganda.

While the BJP had the advantage of adopting technology and social media earlier than other parties, we are now witnessing a more level playing field among different political parties and leaders (Neyazi et al., 2016). The Congress Party instituted its Data Analytics Department, headed by Praveen Chakravarty, a former investment banker, to run its digital campaign. Rahul Gandhi, the Congress President, has become more active on social media, including Twitter, since the middle of 2017. There has also been a parallel increase in the number of followers on Twitter – from 2.49 million followers in July 2017–3.40 million in September 2017.[3] The meteoric rise in the number of Twitter followers of Rahul became an issue of discussion in popular media and drew attacks from opposition parties. While the Congress Party attributed the growth to the increasing engagement of Rahul on Twitter, opposition parties, particularly the BJP, alleged the deployment of bots and hiring of paid social media armies (ANI, 2017). Smriti Irani, BJP's minister, mocked Rahul with a Tweet on 21 October 2017 that read, 'Perhaps @OfficeOfRG planning to sweep polls in Russia, Indonesia & Kazakhstan??' with a hashtag #RahulWaveInKazak. However, it would be a gross generalization to conclude that the Congress Party has deployed bots to augment its social media presence.

It is natural that when a social media account starts becoming popular, it draws the attention of bots. Not surprisingly, all the accounts of political leaders globally have a large number of fake followers. Thus a quick check on Twitter audit (www.twitteraudit. com), which classifies followers based on their quality, shows that Narendra Modi had 39%, Rahul Gandhi had 31% and Arvind Kejriwal (the Aam Aadmi Party (AAP) leader and Delhi's chief minister) had 49% of apparently fake followers.[4] This demonstrates that most of the political leaders' accounts are infected by fake followers. Without any concrete evidence, it is difficult to conclude whether these fake followers have been bought by political leaders themselves or they have been attracted because of the popularity of handles.

With the rise of many fact-checking organizations, and each political party's dynamic IT cell, which also monitor opponents' propaganda and bots accounts, political actors are resorting to new methods. There is evidence now of the deployment of cyborg – a mix of humans with automation, in order to bolster support and interact with humans to

influence public opinion. Politicians are increasingly hiring paid professionals to run pro-paganda by setting up fake accounts on Twitter and Facebook to create a positive image, carry targeted propaganda, troll opposition and gain support. With the increasing scrutiny of social media platforms to detect bots activities, political parties are now sharing documents that contain scripted messages that need to be tweeted or shared on WhatsApp through their internal networks (Sidharth, 2018). These methods, though deployed in India, could also be found in other national contexts. While such methods have been exposed, there is no decline in the digital propaganda and Indian fact-checkers have continuously been exposing such propaganda from various political parties and groups. These discussions on political bots in the context of India provide valuable background to the current study.

Methods

The data on Twitter hashtags were collected from Social Bearing, a Twitter analytics tool. Representative hashtags around the events (Uri attack and Surgical Strike) were identified by closely monitoring Twitter. Data were collected immediately after the events over five days. The data collection process was limited to 5,000 tweets on one hashtag by Social Bearing, through its REST API (see https://socialbearing.com/). However, Social Bearing does provide a basic analysis of all tweets captured through its database. There was a total of 85,873 tweets around Uri attack collected with 10 representative hashtags. For Surgical Strike, there were a total of 62,356 tweets around 10 representative hashtags. To distinguish bots from humans on Twitter, we used the methods of Howard and Kollanyi (2016) in their study of Brexit campaigns; Twitter handles that sent 50 or more tweets in a day have been defined having used heavy automation, but may not necessarily be bot. This method allows us to understand how only a limited number of users on Twitter have been sending a large number of Tweets and raises the question about representativeness of online public opinion that often enters into offline space because of contextual hybridity in news production and consumption. The findings presented here are based on the analysis provided by Social Bearing. However, I applied the same method in our raw data and found almost similar trends of the majority of tweets generated by a handful of accounts on these two important national events (Appendix 1, Tables 4 and 5).

The empirical findings

This study investigates the use of political bots to manipulate public opinion in the wake of terrorist attacks on Indian security forces near the town of Uri in Kashmir that took place on 18 September 2016, popularly known as the Uri Attack. The present study not only highlights the ways to detect bots and their activities, but also attempts to bring the debate on political bots into the public domain. The Uri attack on Indian security forces was carried out by four terrorists that resulted in the killings of 18 soldiers while several other soldiers were injured. The attack assumed significance because of a three-month agitation in the Kashmir valley after the killing of Burhan Wani.[5] The Uri attack was vehemently criticized across the Indian political class and was also condemned by several countries, including the US. India maintained that Pakistan was behind the

attack and urged the world powers to take stern action against Pakistan. However, Pakistan denied any involvement in the attack and Pakistan's stance was supported by China.

Soon after the attacks, people went to social media to express their anger. Twitter and Facebook attracted the most attention. Several hashtags related to the Uri attacks started trending. The initial hashtags were neutral, as in #UriAttacks, #UriAttack, and #UriMartyrs. Gradually, the hashtags started mocking the Modi government. This was because of Modi's policy towards Pakistan after he became prime minister. From the time Modi assumed power in May 2014, he has been engaged in improving ties with Pakistan. Modi not only invited Pakistan's Prime Minister Nawaz Sharif for his swearing-in ceremony in 2014, which Mr. Sharif attended, but he went to the extent of making an unexpected stopover in Lahore on his way back from an Iran trip in December 2015 to visit Prime Minister Nawaz Sharif on his birthday. Soon after the Uri attack, the hashtag #WakeUpModi started trending, indicating Modi needed to be careful about his policy towards Pakistan. Hashtags #UnitedAgainstPak, #TerrorFactory_Pak, #ActAgainstPak asked Modi to attack Pakistan to take revenge. Another hashtag #56InchPunctured was directed against Modi, referring to his boast of a 56-inch chest during the 2014 Indian national election, indicating that India needed a strong leader like him, who could take on Pakistan.

The Uri attack was projected as one of Modi's major failures on the foreign policy front. The backlash on social media came from three different quarters: 1) the core BJP supporters, 2) opposition political parties, 3) some liberal intellectuals. Since the time Modi came to power, core BJP supporters expected that India would adopt a hardline foreign policy towards Pakistan and isolate the country diplomatically. Even during election campaigns for the 2014 national election, Modi repeatedly vowed to adopt a firm stance towards Pakistan after he came to power. The continual attempt by Modi to improve relations with Pakistan, however, baffled and disappointed the BJP's core supporters.

Meanwhile, the opposition parties had a different reason to criticize the Modi government. The then-opposition parties led by BJP vehemently criticized any attempt by previous Congress-led UPA government to improve relations with Pakistan. The Uri attack provided the opportunity to the opposition parties to take on the Modi government on its foreign policy towards Pakistan. What was more surprising were the criticisms from some liberal intellectuals as they found it opportune to take on Modi.

Finally, after receiving heavy criticism on social media as well as commentators on mainstream media asking for actions against the Uri attack, India conducted strikes on September 29, 2016, to target terrorist groups in Pakistan Occupied Kashmir (PoK). This was called 'Surgical Strike' through which Indian security forces allegedly entered into PoK territory in the mid-night hour, attacked Pakistan army base and returned to India. The then-Indian army Director General of Military Operation, Ranbir Singh, in the media briefing the following day, emphasized that Surgical Strike was focused on ensuring that these terrorists are not able to cause destruction and endanger the lives of Indian citizens (Indian Express, 2016). However, the Pakistan government never admitted to the Surgical Strike and called it a fake claim by the Indian government. Even some Indian opposition parties were critical of the strike by dubbing it as 'fake' and asked for the evidence to demonstrate Surgical Strike did take place (Shekhar, 2016). The opposition parties were criticized for raising questions against Surgical Strike and was quickly labeled as anti-national. The divided opinion about the Surgical Strike was clearly reflected in

trending hashtags on Twitter. Hashtags such as #modipunishespak, #indiastrikesback and #56InchRocks, celebrated the Surgical Strikes while #fakeindiafakeclaim, #indiadaydreaming and #starplussurgicalstrike, a reference to India's soap opera on television, mocked India's claim of entering into PoK. One might as well ask if the strike was the result of online public opinion going negative against the Modi government after the Uri attack. An analysis of Twitter hashtags that started trending soon after the Uri attack covering the five-day period from September 18–22 shows a handful of Twitterati were out there to push India towards war.

More than one-third of tweets were generated using heavy automation. Importantly, only 25 Twitter handles generated 18.6% or 15,993 tweets, while 84 Twitter generated nearly one-third of the tweets handles in the sample on Uri attack (Table 1). Similarly, looking at the Surgical Strike, 52 Twitter handles in the sample data generated almost 29.5% of tweets celebrating Surgical Strikes, while 31 handles generated 32.6% of tweets mocking Surgical Strike (Table 2). Interestingly, taken together, 25 Twitter handles generated almost 17% of tweets around Surgical Strike. This should be a cause of concern as it shows that a minority of Twitter users could create a false perception of public opinion around certain critical national issues. Many of the Twitter accounts from our sample was later suspended by Twitter. (See Appendix 1.) Tweets sent by these suspended twitter accounts were derogatory, often targeted at opposition voices. Because of the offensive language of these tweets, they cannot be reproduced here. Some opposition groups questioned the BJP government's delay in launching the Surgical Strike. For example, 'If #SurgicalStrikes were launched after #Pathankot, #UriAttacks wouldn't have happened'.[6] Twitter has the policy of suspending malicious bots accounts when their system detects them. The suspension of a few accounts from our sample suggests that bots were at work during the Uri attack and Surgical Strike.

A number of these accounts in the sample that supported Surgical Strikes are followed by Prime Minister Modi. At the same time, many of those accounts criticizing Surgical Strikes are followed by opposition political leaders such as Sanjay Jha, Congress Party spokesperson. There are some interesting patterns here, perhaps unique to Indian democracy. Political leaders follow some of their supporters' accounts, further emboldening these users to be proactive by adopting more extreme positions on controversial issues and tweeting them. For example, @Jeetnsingh, followed by Modi, sent an offensive tweet

Table 1. Hashtags used on Twitter during the Uri Attack.

	Hashtags	Tweets	Tweets generated by heavy automation
Hashtags that showed anger against the attack	#UriAttack	12400	3640
	#UriAttacks	9689	2790
	#UnitedAgainstPak	6159	2725
	#TerrorFactory_Pak	5874	2476
	#TerrorStatePak	6600	2580
Hashtags that specifically asked India to take revenge or go for war against Pakistan	#ActAgainstPak	7122	3135
	#MaunModiSarkar	7527	3476
	#WakeUpModi	8370	2104
	#WhereIsRSS	10830	3094
	#56InchPunctured	11302	4714
Total		85873	30737 (35.8%)

Note: Heavy automation refers to tweets generated by accounts that produce more than 50 tweets per day (Adapted from Howard & Kollanyi, 2016).
Source. Socialbearing (REST API).

Table 2. Hashtags used on Twitter during Surgical Strike.

	Hashtags	No. of Tweets	Tweets generated by heavy automation
Hashtags celebrating surgical strike (India)	#modipunishespak	2681	422
	#SurgicalStrike	9100	2484
	#surgicalstrikes	6040	2025
	#IndianArmy	6120	1411
	#indiastrikesback	9074	2857
	#UriAttack	7400	2723
		40415	11922 (29.5%)
Hashtags mocking surgical strike (Pakistan)	#fakeindiafakeclaim	6245	1954
	#indiadaydreaming	4307	1936
	#starplussurgicalstrike	6389	2019
	#pakistanarmy	5000	1247
		21941	7156 (32.6%)

Note: Heavy automation refers to tweets generated by accounts that produce more than 50 tweets per day (Adapted from Howard & Kollanyi, 2016).
Source. Socialbearing (REST API).

against Arvind Kejriwal, who had asked for the proof of the Surgical Strike.[7] Another account followed by Modi referred to opposition parties and Indian media as Pakistan's 'pimps' and advocated for 'breaking of [Bengal]'.[8] A similar strategy has been adopted by other Indian political leaders. For example, Sanjay Jha and other opposition political leaders have been following many of the users in this sample, which sent more than 50 tweets in a day.

In a hybrid media environment, it is also important to understand how online and offline media interact with each other to reach a larger public than possible if they had operated independently of each other. Twitter sentiments on the Uri attack were regularly covered, discussed and debated on television studio. Soon after the Indian army carried out the Surgical Strike on September 29, weekly data of television viewership suggested that most of the news channels gained viewership in weeks 39 and 40, September 24–7 October 2016. While the viewership for most news channels began to increase from week 38, after the Uri attack, the increase was substantial after the Surgical Strike, as reflected in Table 3 and Figure 1. Among the top five news channels (all Hindi news channels), *Aaj Tak* gained the most with a 23% increase in week 38, 31% increase in week 39 and 17% increase in week 40. It must be noted that average viewership for *Aaj Tak* always remained around 80–90 million during a typical week (Moneylife, 2016). Week 37, which was a normal week, saw an average viewership of *Aaj Tak* at 82 million (Table 3). All news channels witnessed massive increases in viewership as reflected in Figure 1. Importantly, viewership increase was substantial during the week of Surgical Strike as compared with the week of Uri attack, indicating that the viewership increase of news channels was

Table 3. Viewership of Top 5 News channels - September 10 to October 7, 2016 (in millions).

Name of Channel	Week 37	Week 38	Week 39	Week 40
Aaj Tak	82	107	140	164
India TV	75	89	110	138
India News	74	85	107	132
ABP News	58	74	97	115
Zee News	52	68	97	118

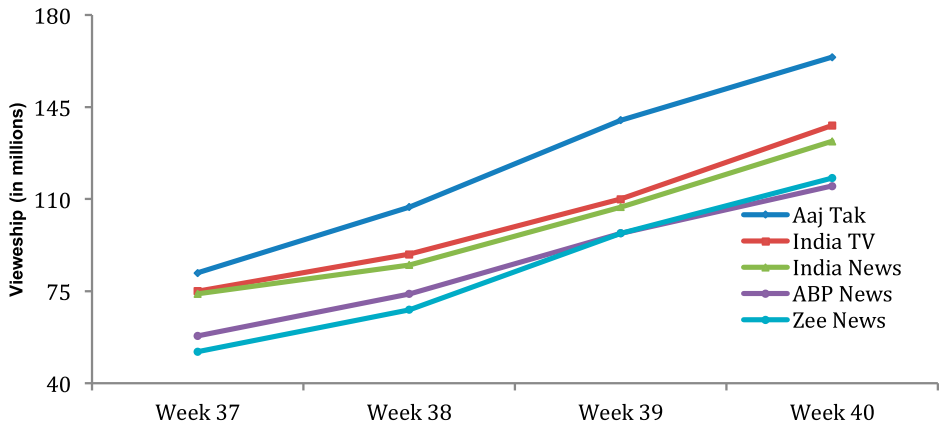Source: Broadcast Audience Research (BARC), India.

Figure 1. Viewership of Top 5 News channels September 10 to October 7, 2016 (in million). Source: Broadcast Audience Research (BARC), India.

driven by the event of Surgical Strike. The fluctuation in news channels viewership during such crises also reflects the limitation of public opinion when citizens could be driven by jingoistic sentiments flared up by news media.

Twitter public opinion, taken as a barometer for public opinion and amplified by news television, reflects that news media could go to any extent as long as it serves their business interests. In this case, the Uri attack and the subsequent Surgical Strike helped the media to gain the audience. Research suggests that audiences are more likely to support a war when they do not have to get involved directly (by fighting) or indirectly (when their family members are not fighting) (Nacos, Bloch-Elkon, & Shapiro, 2011). By trumpeting the war hysteria, the media knew that the public is more likely to buy such projection as the majority of them are not directly or indirectly involved with war. The media are certainly moving from a fourth estate (check on government) to cheerleader for government in times of war and crisis.

Herman and Chomsky's (1988) propaganda model is well known. Herman (1993), argues that 'the mainstream media tend to follow a state agenda in reporting on foreign policy (45)'. Media coverage of the foreign policy, especially in wartime, is significantly, although not entirely, indexed to public statements by the president and his representatives (Bennett, 1990). Similarly,Semetko (2009) notes that 'the challenges faced by reporters, editors, and news organizations as a whole become crystal clear in times of war, when the news media in a country can be observed to shift from a "pluralist" to a "propaganda" model of production' (p.639). With the rise of digital media, it is vital to look at the hybrid media system and how it has armed the different actors to carry their propaganda across multiple platforms in a networked environment. Howard and Kollanyi's (2016) study of political bots in the Brexit referendum shows that bots had a small but strategic role in the referendum conversation: Less than 1% of the account generated almost one-third of all messages.

I argue that bots have been used strategically by political actors to serve their particular interests and manipulate public opinion. In the process, we are witnessing the rise of digital propaganda, with no decline in propaganda orchestrated through traditional media. The public 'often responds not to events or social trends but to reported events'

(Page & Shapiro, 2010, p. 340). Nowadays, digital media trends often lead to news stories or reported events, which we also saw in the above cases. At the same time, we also need to consider whether or not the rise of political bots and digital propaganda has facilitated political polarization.

Polarized politics, polarized media

What are the implications of the rise of digital propaganda for politics and society? Has the rise of digital propaganda witnessed an increase in political polarization? Polarized politics is informed by extreme political views with a limited presence of the balance opinion. Social media has facilitated the expression of polarized views online, as shown in these two cases, which were reinforced on traditional media. The Indian national media system, which often boasts of objective and neutral reporting, has exhibited the tendency of moving towards a more polarized media system. There is now the emergence of more partisan news media such as the *Republic TV*, *India TV* and *Zee News*, among others that support and promote the viewpoints of the BJP, the current ruling party (Ninan, 2019). The Surgical Strike was intended to gain the domestic audience as public opinion was increasingly becoming unfavorable to the incumbent political party after the Uri attack.[9] The Surgical Strike featured heavily in BJP's subsequent election campaigns. The Uttar Pradesh Assembly election that was fought soon after the event in February and March 2017, and the BJP's campaign posters and billboards extensively featured the Surgical Strike. Even speeches of political leaders, including Prime Minister Modi often included a reference to the Surgical Strike in relation to teaching Pakistan a lesson and making India strong. In a town hall meeting with the Indian diaspora in London in April 2018, he referred to the Surgical Strike. However, such a projection of Surgical Strike has not gone uncontested. The opposition parties also often refer to the Surgical Strike as a failure of the BJP government's foreign policy as Pakistan's proxy war in Kashmir has not subsided but has instead intensified.

While the internet has been utilized more effectively by the established political actors as research from other contexts and India suggests, other political groups have begun to use the medium strategically in order to place their demands in the public arena. My findings suggest that there is increasing political polarization in India. This finding is in line with Udupa's (2019) findings that the discussion on Twitter on controversial issues are often highly polarized along party lines. While scholars disagree on the sources of polarization beyond India, the internet has been blamed for growing polarization because the internet allows people to filter and choose news content according to their tastes and predispositions. (Sunstein, 2007). However, we should be careful about arguing that social media has resulted in 'echo chambers' (Sunstein, 2007). There are studies suggesting that online citizens do get exposed to counter viewpoints through incidental exposure (Bakshy, Messing, & Adamic, 2015; Flaxman, Goel, & Rao, 2016; Fletcher & Nielsen, 2018) and ideological segregation is overestimated (Barberá, Jost, Nagler, Tucker, & Bonneau, 2015). Similarly, Vaccari et al. (2016) shows that the role of social media in creating echo chambers varies across individuals and is influenced by individuals' traits, preferences, and social networks. In times of political crises, citizens are more likely to move beyond selective exposure and echo-chamber and get exposed to counter viewpoints. Moving beyond echo chambers during a crisis occurs because citizens desire to

know the contrary opinion. The exposure to counter opinion may not be productive and deliberative. Through an online field experiment, Bail et al. (2018) have shown that exposure to counter opinion may increase political polarization. This may be because the purpose of engagement with people holding counter viewpoints during a crisis is to attack, troll and proof one's viewpoints instead of being swayed by counter opinion and hence further solidifying polarized opinion. Such cross exchanges on the digital platform thus result in more negativity and further polarized our political opinion.

Looking at the context of India, we certainly have seen the rise in political polarization as citizens go online and use digital platforms to express their opinions and counter opposing viewpoints. At the same time, one cannot ignore the role of the state in accentuating political polarization. When some citizens feel that they have impunity to express threats of physical violence for political disagreement with the state acting as an onlooker, political polarization gets foregrounded. Most of the recent political crises in India witnessed highly polarized debates on popular and social media as well as offline platforms. Prime Minister Modi has been following at least five troll Twitter accounts, some of whom threatened physical violence (Jawed, 2017). Despite criticisms from various citizens, Modi did not unfollow those troll accounts, which then offers legitimacy to these troll accounts and abetment to political polarization. Prime Minister Modi's response suggests that there is little political will to counter trolls and bots. Nationalistic rhetoric against Pakistan is gaining increasing legitimacy among citizens, often reinforced by polarized media such as on *Republic TV* and *Zee TV*, and is used to silence the critical and minority voices, as seen in the above cases.

Discussion and conclusion

In this article, I have shown the rise of digital propaganda in India's hybrid media environment and how such propaganda is orchestrated by political actors to manipulate public opinion. There is evidence of the use of automation in the wake of the Uri attack and Surgical Strike as such large amounts of tweets cannot be generated by humans in such a short period. While the vocal voices on Twitter calling for war against Pakistan after the Uri attack permeated into the traditional media because of contextual hybridity, and their fit with traditional news values preference conflict, these voices were manipulated by a handful of Twitterati. It is therefore important to critically look at the publicness of public opinion in the digital age as traditional media often refer to online sentiments to judge public opinion. At the same time, there is growing political polarization in India concomitant with the growth of digital media. The polarized political environment has also been reflected in India's increasingly polarized national media system. Yet we cannot ignore the role of the state and political actors in facilitating political polarization, as noted above. By following the accounts of Twitter users who advocate violence, political actors are emboldening them to be more proactive, often adopting extreme positions on controversial issues. This strategy of following Twitter users appears to be unique to India and has not yet been found in other democracies.

Another contribution of this study is highlighting the need to integrate computational methods with critical analysis of tweets to provide a more comprehensive understanding of the formation of Twitter public opinion and how such opinion percolates offline. I showed in this article how extreme opinions were expressed by Twitter users who are

followed by political leaders or elites. The accentuation of online propaganda by different political actors has increasingly been contested. There are many civil society and advocacy groups along with global networks of fact-checking organizations simultaneously exposing and busting digital propaganda by various political actors.

While bots have been used extensively, India's political parties are now resorting to cyborg, combining automation with the human agency to avoid detection because of the increasing scrutiny of digital platforms by fact-checking organizations as well as platform companies themselves. The availability of cheap labor and increasing scrutiny by platform companies have prompted the shift to using more human labor for orchestrating online propaganda. There is sustained and intense public scrutiny on certain political crises as compared to others. Yet these political crises also offer an opportunity to the political actors to take advantage of the situation by using the crises to gain political mileage. The Surgical Strike has certainly proved beneficial to incumbent as they have been using it successfully during the election campaigns to gain vote; just before the beginning of the 2019 national election campaign Prime Minister Modi referred to the Surgical Strike during an exclusive interview to an Indian news agency, ANI on 1 January 2019, to attack the Congress Party and present the BJP as a nationalist party.

In light of the findings presented here, several steps could be taken to ensure that Twitter is not used for political propaganda. Twitter has taken stringent measures to ensure that the platform is not misused by state and non-state actors. For example, in the wake of the Hong Kong protest in July-August 2019, Twitter released a list of state-backed suspected accounts that were involved in propaganda (Twitter Safety, 19 August 2019). In a country like India, where labor is cheap, political actors have been employing real human beings to evade scrutiny from the platform companies. The use of real human beings to do the job of political bots is a pragmatic approach by propagandists as the humans are more likely to be familiar with local contexts and use local vernacular to influence public opinion. Political leaders need to ensure that they immediately unfollow such accounts as these get involved in toxic debates and sending offensive messages. Doing so will demonstrate that political leaders are willing to fight against online trolling; getting involved in acts of extreme online behavior may not be politically rewarding and less attractive.

Moreover, currently fact-checkers organizations have been working individually to bust digital propaganda instead of collaborating amongst themselves. This approach, while helpful in exposing various propaganda, often end up detecting the same propaganda. This wasteful duplication of resources and expertise could be utilized to fight against giant networks of propagandists. Fact-checker organizations should collaborate and decide on the topics that they would be working on so as to minimize duplication of effort. This collaboration is more imperative because of the diversity of media landscape in India and the presence of a large amount of propaganda in regional and vernacular languages fighting against which is no easy task. By collaborating and sharing resources, fact-checkers can concentrate on specific domains and regions.

The current study has certain limitations. The data was collected through Social Bearing, which uses REST API and hence, the representativeness of the sample tweets is uncertain. Collecting real-time tweets for future study would resolve this issue. Similarly, the method of identifying bots based on the number of tweets per day is just one approach to look at the use of automation in sending tweets and there are other advanced techniques

developed by scholars, which has been discussed above. This method of identifying bots based on the frequency of tweets may not work in the current context as Twitter has taken several stringent measures to detect and suspend bots accounts. Similarly, political actors and propagandists have also adopted several measures, including deploying more smart bots using artificial intelligence to hiring paid professionals in developing countries to carry out propaganda to evade detection by social media companies. However, the current study contributes to advance our understanding of limitation of online public opinion by demonstrating how, during a crisis, a handful of users interfere in political discussion. One solution to this problem could come from ordinary citizens who should share and express their opinion on platforms more frequently to ensure that public discourse on critical issues is not hijacked by a small number of propagandists.

Given the overall framework of the current study, which uses Twitter data in addition to television viewership data and critical analysis of tweets, we could undoubtedly discern the presence of digital propaganda and how this most important event in current Indian political history has divided public opinion leading to increasing political polarization. For example, in September 2018, the University Grants Commission (UGC) instructed Indian universities to celebrate September 29 as 'Surgical Strike Day'. The so-called Surgical Strike has been extensively featured as one of the main achievements of the current BJP government in its tenure and has been used creatively to gain votes in the national election in 2019. With an ever-increasing number of internet users in India, now over 600 million, and growing availability of vernacular and Indian language content on the internet, the contestation among political actors for online mobilization and to control public opinion can be expected to grow.

Notes

1. Yet another area of concern is the deployment of WhatsApp messaging services to micro-target and manipulate public opinion. In contrast to the Western countries, WhatsApp has emerged an important platform in developing countries where people's first exposure to the internet is often through WhatsApp. It is in this context that we need to understand digital propaganda often carried out with a mix of human involvement and automation.
2. Some of the important fact-checking organizations in India are Altnews.in, Boom Live, Factchecker.in, Factly, who regularly bust online propaganda by various political actors.
3. In February 2018, Rahul had 5.86 million followers on Twitter, which went up to 6.49 million in April. Rahul now also has a verified Facebook account. For details, see TNN (2017).
4. When looking at other global leaders Twitter accounts; Donald Trump had 38% while Barack Obama had 17% fake followers. This audit through Twitter Audit was accessed on 15 February 2018. A more detailed discussion on the controversy could also be found in Jacob (2017).
5. Burhan Wani was a 22-year old educated Kashmiri militant who was associated with the Kashmiri militant group Hizbul Mujahideen. He was supposedly active on social media and was popular among Kashmiri youth. He was killed in an encounter with Indian security forces on 8 July 2016. His killing resulted in the massive protests in the valley that lasted for almost six months. For details, see Bukhari (2016)
6. The tweet was sent by Bahujan Samaj Party tweeter handle, @Bahujan4India on 2 October, 2016 'If #SurgicalStrikes were launched after #Pathankot, #UriAttacks wouldn't have happened: Mayawati #ChaloLucknow #MayawatiNextUPCM @WorldJat' https://twitter.com/i/web/status/781843737789857792

7. This tweet was sent by @jeetnsingh on 29 September, 2016, अरे @ArvindKejriwal तेरे बापों की बोलती बंद हो गई। क्या वो तेरे   isolation   फार्मूले पर काम कर रहे है ? #ModiPunishesPak https://twitter.com/i/web/status/781403573699555329

8. Both these tweets were sent by @mahesh10816 on 29 September, 2016 'More than Pakis their pimps in India esp those in Indian media will feel the pain #ModiPunishesPak' https://twitter.com/Madhav/status/781488493859966978 'Bangle breaking is the only act left 😔😔😔#SurgicalStrike#IndianArmy'   https://twitter.com/Madhav/status/781628152485326848

9. In other contexts, the incumbent has used foreign policy to gain the domestic audience. However, the audience costs of using foreign policy to gain support from the domestic audience may be risky unless driven by two factors; 1) confident of success, 2) national security interests are in jeopardy (Baum, 2004). In the current context, the risk could be moderated by the use of digital media strategically to 'control public opinion'.

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References

Abokhodair, N., Yoo, D., & McDonald, D. W. (2015, February). Dissecting a social botnet: Growth, content and influence in Twitter. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 839–851). ACM.

ANI. (2017). Bots behind rise in Rahul Gandhi's Twitter popularity? *The Times of In*dia, 21 October. Retrieved from https://timesofindia.indiatimes.com/india/bots-behind-rise-in-rahul-gandhis-twitter-popularity/articleshow/61161857.cms

Assisi, C. (2015). How to buy friends and influence people. *Live Mint*. 10 May. Retrieved from http://mintonsunday.livemint.com/news/how-to-buy-friends-and-influence-people/2.3.2289548004.html

Bail, C. A., Argyle, L. P., Brown, T. W., Bumpus, J. P., Chen, H., Hunzaker, M. F., … Volfovsky, A. (2018). Exposure to opposing views on social media can increase political polarization. *Proceedings of the National Academy of Sciences*, 115(37), 9216–9221.

Bakshy, E., Messing, S., & Adamic, L. A. (2015). Exposure to ideologically diverse news and opinion on Facebook. *Science*, 348(6239), 1130–1132.

Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., & Bonneau, R. (2015). Tweeting from left to right: Is online political communication more than an echo chamber? *Psychological Science*, 26(10), 1531–1542.

Bastos, M. T., & Mercea, D. (2019). The Brexit botnet and user-generated hyperpartisan news. *Social Science Computer Review*, 37(1), 38–54.

Baum, M. A. (2004). Going private: Public opinion, presidential rhetoric, and the domestic politics of audience costs in U.S. Foreign policy crises. *Journal of Conflict Resolution*, 48(5), 603–631.

Bennett, W. L. (1990). Toward a theory of press-state relations in the United States. *Journal of Communication*, 40(2), 103–127.

Boxell, L., Gentzkow, M., & Shapiro, J. M. (2017). Greater internet use is not associated with faster growth in political polarization among US demographic groups. *Proceedings of the National Academy of Sciences*, 114(40), 10612–10617.

Bukhari, S. (2016). Why the death of militant Burhan Wani has Kashmiris up in arms. *BBC*. 11 July. Retrieved from http://www.bbc.com/news/world-asia-india-36762043

Chadwick, A. (2017). *The hybrid media system: Politics and power*. Oxford: Oxford University Press.

Davis, C. A., Varol, O., Ferrara, E., Flammini, A., & Menczer, F. (2016, April). Botornot: A system to evaluate social bots. In *Proceedings of the 25th International Conference Companion on World Wide Web* (pp. 273-274). International World Wide Web Conferences Steering Committee.

Dickerson, J. P., Kagan, V., & Subrahmanian, V. S. (2014, August). Using sentiment to detect bots on twitter: Are humans more opinionated than bots?. In *Advances in Social Networks Analysis and Mining (ASONAM), 2014 IEEE/ACM International Conference on* (pp. 620-627). IEEE.

Fazil, M., & Abulaish, M. (2017). Identifying active, reactive, and inactive targets of socialbots in Twitter. In *Proceedings of the International Conference on Web Intelligence* (pp. 573–580). ACM.

Ferrara, E., Varol, O., Davis, C., Menczer, F., & Flammini, A. (2016). The rise of social bots. *Communications of the ACM*, *59*(7), 96–104.

Flaxman, S., Goel, S., & Rao, J. M. (2016). Filter bubbles, echo chambers, and online news consumption. *Public Opinion Quarterly*, *80*(S1), 298–320.

Fletcher, R., & Nielsen, R. K. (2018). Are people incidentally exposed to news on social media? A comparative analysis. *New Media & Society*, *20*(7), 2450–2468.

Forelle, M., Howard, P., Monroy-Hernández, A., & Savage, S. (2015). Political bots and the manipulation of public opinion in Venezuela. *arXiv preprint arXiv:1507.07109* (July 25). Retrieved from SSRN: http://ssrn.com/abstract=2635800

Guilbeault, D. (2016). Automation, algorithms, and politics growing bot security: An ecological view of bot agency. *International Journal of Communication*, *10*, 5003–5021.

Haeg, J. (2017). The ethics of political bots: Should we allow them for personal use? *Journal of Practical Ethics*, *5*(2), 1–20. Retrieved from http://www.jpe.ox.ac.uk/papers/the-ethics-of-political-bots-should-we-allow-them-for-personal-use/.

Hegelich, S., & Janetzko, D. (2016, March). Are social bots on Twitter political actors? Empirical evidence from a Ukrainian social botnet. In *Tenth International AAAI Conference on Web and Social Media*.

Herman, E. S. (1993). The media's role in US foreign policy. *Journal of International Affairs*, *47*(1), 23–45.

Herman, E. S., & Chomsky, N. (1988). *Manufacturing consent: The political economy of the mass media*. New York: Random House.

Howard, P. N., & Kollanyi, B. (2016). *Bots,#strongerin, and #brexit: Computational propaganda during the UK-EU referendum* (Working Paper No. 2016.1). Oxford, UK: Project on Computational Propaganda. Retrieved from www.comprop.oii.ox.ac.uk

Howard, P. N., Woolley, S., & Calo, R. (2018). Algorithms, bots, and political communication in the U.S. 2016 election: The challenge of automated political communication for election law and administration. *Journal of Information Technology & Politics*, *15*(2), 81–93.

Hwang, T., & Woolley, S. (2016). How politicians should or shouldn't use Twitter bots. *Slate*, 8 March. Retrieved from http://www.slate.com/articles/technology/future_tense/2016/03/how_politicians_should_use_twitter_bots.html

Indian Express. (2016). Surgical strikes: Full text of Indian Army DGMO Lt Gen Ranbir Singh's press conference. *The Indian Express*, 29 September. Retrieved from https://indianexpress.com/article/india/india-news-india/pakistan-infiltration-attempts-indian-army-surgical-strikes-line-of-control-jammu-and-kashmir-uri-poonch-pok-3055874/

Jacob, J. (2017). Modi Vs Gandhi: Twitter analytics reveal fake followers plague both handles. *BoomLive*. 25 October. Retrieved from https://www.boomlive.in/modi-vs-gandhi-twitter-analytics-reveal-fake-followers-plague-both-handles/

Jawed, S. (2017). Hall of shame – Serial abusers, sexist bigots, rumour mongers followed by PM Modi on Twitter. *Altnews*, 7 September. Retrieved from https://www.altnews.in/hall-shame-serial-abusers-sexist-bigots-rumour-mongers-followed-pm-modi-twitter/

Karpf, D. (2016). *Analytic activism: Digital listening and the new political strategy*. Oxford: Oxford University Press.

Keller, T. R., & Klinger, U. (2019). Social bots in election campaigns: Theoretical, empirical, and methodological implications. *Political Communication*, *36*(1), 171–189.

Kudugunta, S., & Ferrara, E. (2018). Deep neural networks for bot detection. *Information Sciences*, *467*, 312–322.

Lokot, T., & Diakopoulos, N. (2016). News bots: Automating news and information dissemination on Twitter. *Digital Journalism*, *4*(6), 682–699.

Metaxas, P. T., & Mustafaraj, E. (2010). From obscurity to prominence in minutes: Political speech and real-time search. Retrieved from http://cs.wellesley.edu/~pmetaxas/Metaxas-Obscurity-to-prominence.pdf

Moneylife. (2016). What India watches on TV? *Moneylife*, 13 October, accessed on 3 November. Retrieved from https://www.moneylife.in/article/what-india-watches-on-tv/48482.html

Mustafaraj, E., Finn, S., Whitlock, C., & Metaxas, P. T. (2011, October). Vocal minority versus silent majority: Discovering the opinions of the long tail. In 2011 *IEEE Third International Conference on Privacy, Security, Risk and Trust and 2011 IEEE Third International Conference on Social Computing* (pp. 103-110). IEEE.

Nacos, B. L., Bloch-Elkon, Y., & Shapiro, R. Y. (2011). *Selling fear: Counterterrorism, the media, and public opinion*. Chicago: University of Chicago Press.

Neff, G., & Nagy, P. (2016). Talking to bots: Symbiotic agency and the case of Tay. *International Journal of Communication*, *10*, 4915–4931.

Neyazi, T. A. (2018). *Political communication and mobilisation: The Hindi media in India*. Cambridge and New Delhi: Cambridge University Press.

Neyazi, T. A., Kumar, A., & Semetko, H. A. (2016). Campaigns, digital media, and mobilization in India. *The International Journal of Press/Politics*, *21*(3), 398–416.

Ninan, S. (2019). How India's media landscape changed over five years. *The Indian Forum*, 30 August. Available at https://www.theindiaforum.in/article/how-indias-media-landscape-changed-over-five-years

Page, B. I., & Shapiro, R. Y. (2010). *The rational public: Fifty years of trends in Americans' policy preferences*. Chicago: University of Chicago Press.

Sarkar, D. (2016). 10 ways robots can change politics in India. *Times of India*, 27 April. Retrieved from http://timesofindia.indiatimes.com/tech/10-ways-robots-can-change-politics-in-India/itslideshow/51996486.cms

Schäfer, F., Evert, S., & Heinrich, P. (2017). Japan's 2014 general election: Political bots, right-wing internet activism, and prime minister Shinzō Abe's hidden nationalist agenda. *Big Data*, *5*(4), 294–309.

Semetko, H. A. (2009). Media and public diplomacy in times of war and crisis. *American Behavioral Scientist*, *52*(5), 639–642.

Shao, C., Ciampaglia, G. L., Varol, O., Flammini, A., & Menczer, F. (2017). The spread of fake news by social bots. *arXiv preprint arXiv:1707.07592*. Retrieved from https://www.andyblackassociates.co.uk/wpcontent/uploads/2015/06/fakenewsbots.pdf

Sharma, M. (2014). 'Like' hike in Bansal's page: Facebook rejects questionnaire sent by city police. *The Hindustan Times*, 31 January. Retrieved from https://www.hindustantimes.com/chandigarh/like-hike-in-bansal-s-page-fb-rejects-cops-questionnaire/story-CgNUxR5XRr506XqVQgf2wN.html

Shekhar, K. S. (2016). Surgical strikes confuse opposition parties, force multiple U-turns. *India Today*, 10 October. Retrieved from https://www.indiatoday.in/india/story/surgical-strikes-opposition-u-turns-345940-2016-10-10

Sidharth, A. (2018). Paresh Rawal's gaffe exposes party's social media tactic. *Altnews*, 28 February. Retrieved from https://www.altnews.in/paresh-rawals-gaffe-exposes-partys-social-media-tactic/

Spamhaus. (2018). The 10 worst botnet countries. April. Retrieved from https://www.spamhaus.org/statistics/botnet-cc/

Stromer-Galley, J. (2019). *Presidential campaigning in the Internet age*. Oxford: Oxford University Press.

Sunstein, C. R. (2007). *# Republic: Divided democracy in the age of social media*. Princeton: Princeton University Press.

TNN. (2017). Rahul Gandhi adds 1 million Twitter followers in last two months. *The Times of India*, 24 September. Retrieved from https://timesofindia.indiatimes.com/india/rahul-gandhi-adds-1-million-twitter-followers-in-last-2-months/articleshow/60812170.cms

Twitter Help Centre. About suspended accounts. Retrieved from https://help.twitter.com/en/managing-your-account/suspended-twitter-accounts

Twitter Safety. (2019, August 19). *Information operations directed at Hong Kong*. Retrieved from https://blog.twitter.com/en_us/topics/company/2019/information_operations_directed_at_Hong_Kong.html

Udupa, S. (2019). India needs a fresh strategy to tackle online extreme speech. *Economic and Political Weekly*, *54*(4), Retrieved from https://www.epw.in/engage/article/election-2019-india-needs-fresh-strategy-to-tackle-new-digital-tools

Vaccari, C., Valeriani, A., Barberá, P., Jost, J. T., Nagler, J., & Tucker, J. A. (2016). Of echo chambers and contrarian clubs: Exposure to political disagreement among German and Italian users of Twitter. *Social Media+ Society*, *2*(3), 1–24.

Varol, O., Ferrara, E., Davis, C. A., Menczer, F., & Flammini, A. (2017, May). Online human-bot interactions: Detection, estimation, and characterization. In *Eleventh international AAAI conference on web and social media*. Retrieved from https://www.aaai.org/ocs/index.php/ICWSM/ICWSM17/paper/view/15587/1481

Woollacott, E. (2014). Why fake Twitter accounts are a political problem. *New Statesman*, 28 May. Retrieved from http://www.newstatesman.com/sci-tech/2014/05/why-fake-twitter-accounts-are-political-problem

Woolley, S. C., & Howard, P. N. (2017). Computational propaganda worldwide: Executive summary. *Computational Propaganda Project*. Oxford Internet Institute.

Appendix 1

Data presented in this paper are based on the analysis provided by Social Bearing. Applying the techniques with our raw data may not yield similar results as Social Bearing allows downloads of

Table 4. Top 25 handles from our raw data on Uri Attacks.

	Handles	no. of tweets	Accounts suspended	Accounts deactivated
1	TimesNow	140		
2	vinaydokania	129		
3	trendinalialN	81	Yes	
4	tshamsi88	54		
5	LillyMaryPinto	52		
6	geetv79	50		
7	nand_shubham	50	Yes	
8	Vineet_mohamad	49		
9	MrStark__	44	Yes	
10	myvotetoday	44	Yes	
11	NareshBhalla	43		
12	ashish636363	34		
13	jairath_pankaj	34		
14	SirJadejaaaa	33		
15	ANI_news	32	Yes	
16	sarvmanglamcom	31		
17	BspUp2017	30		Yes
18	deepak3553	29		
19	Vineet_24	28		
20	iamYSfromTS	27		Yes
21	meditationsaint	27		Yes
22	SwachhPolitics	27		
23	AmanYad2710	26		Yes
24	tjain2016	26		Yes
25	ArunPrasadSinha	25		
Total		1145		

Table 5. Top 25 handles from raw data on Surgical Strikes.

	Handles	no. of tweets	Accounts suspended	Accounts deactivated
1	FalconAsif1	220	Yes	
2	PakFauj	141		
3	iamHamzaHaris	73	Yes	
4	AleenaRajputPTI	71	Yes	
5	TimesNow	62		
6	coolsa2007	56	Yes	
7	jawairia_jiya	55	Yes	
8	1AhmedAliReal	42	Yes	
9	AliyaButt1819	41	Yes	
10	newsonepk	38		
11	SnakeEaterPK	37		Yes
12	ANI_news	36	Yes	
13	AmnaFazail	35		
14	Rafia_Sanam	35	Yes	
15	BalochistanPak	34	Yes	
16	1HamzaAli	33	Yes	
17	1itspakistan	33	Yes	
18	aPeacefulPak	33	Yes	
19	AsifBalochReal	33	Yes	
20	SyedMuniemRizvi	33		
21	1PeaceTraveler	32	Yes	
22	1PeacefulPak	31	Yes	
23	Bahawalpur_1	31	Yes	
24	taniasyed5	31		
25	bahawalpur_3	30	Yes	
Total		1,296		

up to 5,000 tweets on each hashtag at once and those tweets are not representative. We applied the method in our raw data to find out if we can see similar trends of generation of large amount of tweets by a handful of Twitter accounts. In this analysis, we did not set any particular threshold of number of tweets. Rather we looked at top tweeting accounts in the dataset. The analysis was done by using R. In our 50,010 sample tweets on Uri Attack around 10 hashtags, after removing duplicate tweets we found 13,651 unique tweets, which were sent by 6,295 unique users. Interestingly, 25 users generated 1,145 tweets, which is over 8% of total tweets (Table 4) Of these 25 user accounts, five have been suspended and another five have been deactivated by Twitter, indicating bot-like activities of these accounts. Suspended accounts are more likely to be either spam or those engaged in abusive behavior (See Twitter Help Centre).

Similarly, in our 46,995 sample tweets collected around 10 hashtags on Surgical Strike, we found 16,903 unique tweets after removing duplicate tweets. These 16,903 tweets were generated by 8,953 unique users. We also noticed that 25 users generated 1,296 tweets, which is close to 8% of the total tweets in our sample (Table 5). What is most important is that 18 out of 25 accounts have been suspended and one account has been deactivated by Twitter. In short, out of total 30,554 unique tweets in our sample on Uri Attack and Surgical Strike, 50 out of 15,441 Twitter users generated 2,441 tweets which is 8% of total tweets. And out of these 50 users, 28 accounts have been suspended. This means more than 50 percent of top tweeting accounts from our raw data have been suspended. This suggests that bots were deployed to interfere with political discussions during the Uri Attack and Surgical Strikes. While more than half of the top tweeting accounts were found to be bots and so either suspended or deactivated by Twitter, not all accounts were bots and hence we need to adopt more advance techniques using machine learning in addition to critical analysis to identify possible bot activities on Twitter during a crisis or election.