

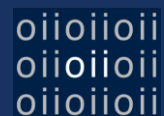


Computational  
Propaganda  
Research Project

**Working Paper No. 2017.4**

# Computational Propaganda in China: An Alternative Model of a Widespread Practice

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## Abstract

*Computational propaganda is a growing issue in Western democracies, with evidence of online opinion manipulation orchestrated by robots, fake accounts and misinformation in many recent political events. China, the country with the most sophisticated regime of internet censorship and control in the world, presents an interesting and understudied example of how computational propaganda is used. This working paper summarizes the landscape of current knowledge in relation to public opinion manipulation in China. It addresses the questions of whether and how computational propaganda being used in and about China, whose interests are furthered by this computational propaganda and what is the effect of this computational propaganda on the landscape of online information in and about China. It also addresses the issue of how the case of computational propaganda in China can inform the current efforts of Western democracies to tackle fake news, online bots and computational propaganda. This working paper presents four case studies of computational propaganda in and about China: the Great Firewall and the Golden Shield project; positive propaganda on Twitter aimed at foreign audiences; the anti-Chinese state bots on Twitter; and domestic public opinion manipulation on Weibo. Surprisingly, I find that there is little evidence of automation on Weibo and little evidence of automation associated with state interests on Twitter. However, I find that issues associated with anti-state perspectives, such as the pro-democracy movement, contain a large amount of automation, dominating Chinese language information in certain hashtags associated with China and Chinese politics on Twitter.*

## Introduction

The year 2016 has come to be seen as a year of political turmoil and when long-standing fears about the negative effects of social media use on democratic politics were finally realized. In a referendum widely seen as marred by false promises based on misleading information (Helm, 2016), growing nationalism that led to the murder of an MP (Cobain & Taylor, 2016) and the manipulation of online public opinion through the use of online algorithms (Howard & Kollanyi, 2016), the UK voted, narrowly, to leave the European Union. Polemical billionaire Donald Trump won the US presidency for the Republican Party, in an election in which automated accounts, particularly in pro-Trump hashtags, dominated discourse on Twitter (Howard & Woolley, 2016) and junk news was shared as frequently as news from professional news producers (Howard, Bolsover, Kollanyi, Bradshaw, & Neudert, 2017).

In the face of this apparent turn in politics, 2017 started with widespread discussion in the media and among politicians, academics and online platforms about how to best control this eruption of manipulation of the political process using online tools. Prominent online platforms such as Facebook, Twitter and Google have announced measures to tackle false information, automation and online harassment (Solon & Wong, 2016), the UK government has announced an inquiry into fake news distributed on social media (UK Parliament, 2017) and the German government is pursuing a law that would make social media sites responsible for illegal content (Faiola & Kirchner, 2017).

This new directions in attempts to control online information represent a reversal in established approaches to the governance of online information that has been brewing for some time. For years, the dominant discourse in Western democracies was that the internet should be allowed to be a place for free speech. The use of the internet was seen as potentially leading to more diverse information, and online free speech was understood as creating a marketplace of ideas in which “correct” information would rise to the top, resulting in stronger citizen political participation and strengthened democracies (Bolsover, 2017).

After the movement towards social media, many began to be worried about echo chambers, in which individuals are only exposed to online information that matches their existing perspectives, (Adamic & Glance, 2005) and filter bubbles, in which sites tailor the information users see based on aggregate data (Pariser, 2012). There were also concerns about how these social media sites might aid extremists (Klausen, 2015) and lead to a domination by existing elites and the commercialization of online content and experiences (Bolsover, 2017; Cammaerts, 2008). Despite these increasing worries about the failure of the internet to live up to its democratic potential and the potential that it might even be undermining established political processes, the events of 2016 brought new urgency to these worries. They also revealed new and more insidious practices such as fake news, automation and computational propaganda and have led to strident calls for change.

While to many this discourse of the internet as a place for free and diverse information has seemed to be the dominant perspective, for more than a decade there has been an alternative model of the governance and control of online information that is growing ever stronger and more influential: China.

## The Chinese Internet

As the world's most populous country, China overtook the US in having the world's largest population of internet users in 2009. The Chinese internet population is growing rapidly, particularly in rural areas with the influx of internet-enabled smartphones, but just over half of the Chinese population remains offline (CNNIC, 2015). The Chinese approach to the governance of the internet, politics and political information is almost the polar opposite of that in Western democracies.

The Chinese state maintains high levels of control over the internet, and discourses about the use of technology for politics rest on ideas about ideological correctness and hierarchy, in contrast to Western ideas about freedom of speech and equality (Bolsover, 2017). This approach is underpinned by "the Great Firewall", the most sophisticated regime of internet censorship and control in the world, and popular foreign platforms are blocked and replaced by domestic alternatives. The level of national specificity of the Chinese internet has led scholars to argue that the idea of "The Internet" is dead, replaced by a "splinternet" with different countries exercising different levels of control over their national populations (Morozov, 2009).

In China, social media companies are held responsible for monitoring the legality of the content posted on them. They employ a large number of censors and collect identity data on registered users in order to achieve these aims (Fu, Chan, & Chau, 2013; Zhu, Phipps, Pridgen, Crandall, & Wallach, 2013). Sensitive topics and attempts at online protest are heavily censored online (King, Pan, & Roberts, 2012; Zhu et al., 2013). The messages that internet users receive from both the state and online platforms emphasizes that the internet is not a place for free speech and that instead users in their online actions need to be cognizant of the state-set ideological priorities of society and the effects of their online actions (Bolsover, 2017).

Under Xi Jinping, there have been ever-increasing crackdowns on online political speech. Soon after his ascension as leader of the Chinese Communist Party (CCP) in late 2012, a major campaign against online rumours and misinformation was launched with high-profile arrests and state visits to the growing number of online opinion leaders (Nip & Fu, 2016). This crackdown appears to have precipitated a movement away from the Twitter-like microblogging giant Sina Weibo, towards more private mediums such as (Tencent-owned) messaging service WeChat (Moore, 2014). In December 2016, regulations, specifically targeting both Weibo and WeChat, were announced that banned the distribution of user-generated audio or video content about current events (SARFT, 2016), media that had previously been important in challenging state dominance of information (Bolsover, 2013b).

This juxtaposition between “the Chinese internet” and the emerging issues of computational propaganda, bots, algorithms and “fake news” in Western online spaces presents a key dilemma in understanding the current landscape of online political information and opinion manipulation. At its heart, the internet is a global technology based on a global economy. Its hardware connects users across the world via wires and satellites. US-born internet giants are familiar to most users and even in China domestic alternatives mirror these US sites. Furthermore, this connectivity allows information and ideas to spread across national borders.

However, the internet has also begun to seem nationally specific. For more than a decade China has been building an alternative internet infrastructure that provides the online context in which more than 20 percent of the world’s internet users live, and it is a model that has inspired other attempts at internet control. However, much less is known about the state of the internet in China than in Western democracies and much of what is reported is myth. Now more than ever, with China growing in power on the international stage and Western democracies arguing about implementing strategies to control online information, it is important to understand how Chinese information control functions online and the way in which technology is used to influence and manipulate public opinion in and about China.

## **Established Wisdom on Public Opinion Manipulation on the Chinese Internet**

Any attempt to understand the state of technology and politics in China must begin with the differences between approaches to politics, propaganda, media and information control between China and the West. China has a distinctive political system, cultural heritage and socioeconomic conditions. For thousands of years, China was governed by a dynastic system that was based on Confucian ideas of the ruler as the father of the people, with social relations centred on duty and filial piety. This cultural legacy has resulted in ideas of politics that focus on welfare rather than civil rights and that construct the state’s duty as protecting the welfare and economic development of the people (Perry, 2008; Shue, 2004).

After a short-lived republican period in the early 1900s, China became a communist state under Mao Zedong. Following Mao’s death in 1976, the country began a process of “opening up”, under the leadership of Deng Xiaoping. These economic reforms have lifted more than 500 million people out of poverty and transformed China into one of the world’s largest and

fastest-growing economies in the space of a generation (World Bank, 2015). Despite these economic reforms, the Chinese state maintains high levels of control over information within the country and continues to follow a Marxist approach to the media, in which the truthfulness of the information is less important than the political effects of that information (Wilson, 1993; Xinhua, 2016).

Despite a commercialization of the media industry after 1994, professional news providers in China remain closely aligned with the party-state and have to balance the needs of the party with the need to make money (Winfield & Peng, 2005). Some have found that this leads to greater diversity of information within the country and encourages challenges to the status quo (Lu & Ma, 2015). In contrast, others argue that this solidifies the power of the Communist Party by making this information appear more unbiased and by dividing the interests of the urban middle classes and rural poor based on a diet of consumer products and entertainment (Stockmann, 2012; Zhao, 2000).

The situation in China with respect to propaganda and the manipulation of online public opinion is, thus, extremely complicated and opaque. Several myths persist about the control of online political information in China that have been refuted or challenged by recent research. The first myth is that all online criticism and political speech is censored.

Social media has provided a boon for the Communist Party in China, providing a great deal of information that is used to monitor public opinion, and allowing an efficient distribution mechanism for state entities (Song, 2015). The CCP has proved quite responsive to certain kinds of grievances aired on social media. For instance in 2007, desperate parents of lost children whom they suspected to be kidnapped posted an open letter online asking for “netizen” help in finding their children; the huge public response to this letter pressured the central government to take action, leading to police crackdowns on illegal brickmaking factories that freed thousands of young Chinese who had been forced into slavery by these business owners in collusion with local officials (Herold, 2008). Responding to criticism and evidence of wrongdoing online solidifies the control of the central government rather than undermining it, allowing the state to appear to be responding to citizens’ problems and addressing minor grievances before they gain momentum.

A large number of Chinese internet users’ posts to social media are attempts to take action on small-scale political and social issues (Bolsover, 2017). However, these are restricted to relatively safe and sanctioned topics such as kidnapped children, rural poverty, local corruption and animal cruelty. While political discussion and action related to popular nationalism, rights defense, corruption and power abuse, the environment, cultural contention, muckraking and online charity are widely tolerated, content that challenges the state, such as human rights or illegal or unethical business practices, that the state is unable to contain is repressed (Yang, 2009). A study of social media found that criticism, even if it was vitriolic, of the state, its leaders and its policies, was not more likely to be censored and that, instead, the censorship regime was concerned with preventing collective action by deleting comments that spurred or reinforced offline mobilization (King et al., 2012).

It is, however, not the case that the state holds all the power in this process. The popularly held view among academics studying political speech on the Chinese internet is that this technology has facilitated a negotiation between members of civil society and the state that results in a negotiation at the margins of permissible speech (Stern & Hassid, 2012; Yang, 2009). However, much of this research was conducted prior to the Xi premiership, which appears to have reduced the power of civil society that had been growing online (Bandurski, 2015; Moore, 2014).

A second myth about public opinion manipulation, which was recently challenged by an academic analysis of a leak of a local-level internet propaganda department, is the idea of the “50-cent Party”. For years academics, journalists and activists had written about the existence of this supposed army of individuals paid 50 cents per post to attack critics and support the state online. However, analysing the content contained in this leak and using its contents to identify and contact other similar individuals, King, Pan and Roberts (2016) found that rather than an army of users paid by the post, the “50-cent Party” seemed, in fact, to be composed of government employees who posted pro-state content online as part of their regular jobs; additionally, rather than attacking critical and anti-state content, it was found that these individuals engaged in a positive propaganda strategy that focused on distraction at times of potential unrest. However, unlike the cases of political opinion manipulation that are emerging on Twitter, the team concluded that despite looking extensively for evidence that these pro-state posts were created by automated means, evidence strongly indicated that each was written by a “specific, often identifiable, human being under direction from the government” (King et al., 2016, p. 11).

These are just two instances in which academic research has overturned or problematized established wisdom about how the internet is used for the dissemination of propaganda and manipulation of public opinion in China. It is surprising that no academic research has found evidence of the use of robots and algorithms for computational propaganda in China, given the increasing instances of their use in Western countries and China’s highly sophisticated regime of internet control and propaganda. It is also the case that although some research has examined automated means for manipulating and controlling online public opinion in and about China, little of this research addresses this issue holistically or with an understanding of how propaganda is understood in Chinese theories and politics. This working paper addresses these questions to provide an overview of the status of computational propaganda in China.

## **Key Concepts and Definitions**

This working paper will address the following key questions:

1. Is computational propaganda being used in and about China?
2. Whose interests are furthered by this computational propaganda and what is the effect of this computational propaganda on the landscape of online information in and about China?
3. How can the case of computational propaganda in China inform the current efforts of Western democracies to tackle fake news, online bots and computational propaganda?

To answer these questions, I conducted an interview with a specialist in Chinese internet censorship and an individual who had previously found evidence of Chinese computational propaganda on Twitter. I collected posts made on Twitter using one of 27 hashtags related to China and Chinese politics, in both English and Chinese, over a period of approximately seven weeks. This period included the Tomb-Sweeping Day Festival. I also collected comments left by Weibo users on posts made by one of 25 top media and state information providers on the platform over the Spring Festival period. I analysed these data using both quantitative and qualitative methodologies to look for evidence of various forms of computational propaganda.

### Computational propaganda

The idea of propaganda has its roots in the Catholic Church in the 1600s and refers to highly organized intellectual work that aims at “persuading large masses of people about the virtues (or vices) of some organisation, cause, or person” (Jackall, 1995, p. 2). Propaganda works to influence the opinions and actions of individuals in society based on emotional appeals, rather than rationality (Institute for Propaganda Analysis, 1995).

Propaganda gained a negative connotation with its association with Nazi Germany; however, many scholars of propaganda see it as inevitable and neutral, rather than inherently negative (Lasswell, 1995). In China, propaganda is not generally seen as having the same negative connotations as it does in the West, but is rather viewed as an important tool of governance (Brady, 2009; Brady & Juntao, 2009).

The internet has, however, changed how propaganda is used. Prior to the existence of the internet, propaganda was a tool that was only really available to states and major political and commercial organizations. By lowering barriers to the publication of information, a much wider group of individuals and interest groups can now create and publish propaganda online. The internet has also changed the distribution mechanism of propaganda. As both mass and individualized media, propaganda messages can rapidly gain a huge following online due to viral propagation. However, propaganda campaigns can now also be directed at specific individuals because of the targeting that the internet and digital data makes possible, which appears to increase the effectiveness of these propaganda messages.

This propaganda designed and spread using new computer technologies is computational propaganda. Key tools of computational propaganda include robots, fake accounts and “fake news”. Robots are pieces of code designed to replicate human activity to promote a particular message or individual in online spaces, and fake accounts are manually administered social media accounts that are created and used for the purposes of manipulating online public opinion. “Fake news” is propaganda disguised as professional news. This misinformation is often distributed on social media. Evidence of the use of these tools to perpetuate computational propaganda has been found in relation to major recent political events in the US and Europe (Howard et al., 2017; Howard & Kollanyi, 2016; Howard & Woolley, 2016).



## Computational Propaganda and China

### Case 1: the Great Firewall and the Golden Shield

China is unique in the extent to which the state uses computational propaganda techniques to regulate the domestic internet. “China operates the world’s most sophisticated censorship apparatus,” said Charlie Smith (a pseudonym), one of the two minds behind GreatFire.org, which has been monitoring Chinese internet censorship and providing tools to circumvent these restrictions since 2011“ (C. Smith, personal communication, 2017). As a result, Chinese do not have free access to information and are often unaware of events taking place in their own country,” he continued.

Smith breaks the technologies of internet censorship in China into two major programs: the Great Firewall, which blocks access to restricted foreign websites, and the Golden Shield Project, which regulates information on domestic sites. “Chinese companies who operate websites must self-censor and also monitor their websites for user-generated content that might not please the authorities,” explained Smith. “When Chinese visit these websites and search for information, they will find sanitized information.”

The technology of the Great Firewall works through IP blocking. If a user located in China tries to access a website that is restricted, they will often simply get a timed-out message; the website will never load. Smith thinks that as a result Chinese individuals will not know that the site is being censored; they will just think that the foreign website is unstable, poorly coded or simply slow to load because it is so far away, and as a result many people will eventually give up trying to visit foreign sites.

In early 2015, GreatFire also documented evidence of DNS poisoning being used as part of the Great Firewall. Instead of receiving a timed-out message, users attempting to access restricted sites would be redirected to a random IP address. A user trying to access GreatFire.org’s site was redirected to a Korean government website, and a user trying to access Facebook tweeted that he was redirected to a German porn site (Percy, 2015). Smith thinks that the results of this DNS poisoning is similar to IP blocking: most users would not realize that the information they access is being censored but simply think that this is a problem with the foreign site.

The Great Firewall is a very specific type of computational propaganda that is executed at the borders of China. Smith explained that it is not always easy to predict if or when a site will be blocked but that one thing is certain – once a site is blocked it is almost never removed from the list. “Sometimes a site is blocked simply because it contains some information about a government official that that official wants blocked,” Smith explained. “Perhaps the video featured a government official or the child of a government official. Or perhaps it was filmed in a government office. Perhaps the site was supposed to have been blocked long ago but just slipped through the cracks. The government does not have to justify the blocking of websites... and in many cases the Chinese are left simply wondering why?”

This demonstrates that part of the effectiveness of the Chinese censorship system is its lack of transparency and the uncertainty and instability that users experience over the continued functioning of the internet within China and the information contained on it.

The domestic counterpart of the Great Firewall is the Golden Shield Project. Social media sites in China must actively monitor user-generated content to make sure that the information on these sites will not be deemed illegal or improper by the state. In particular, information related to political scandals, international events and key political figures is often censored (Fu et al., 2013), as well as any attempt to organize offline protest or unite diverse grievances (King et al., 2012). Some of this censorship takes place automatically; for instance, certain sensitive keywords associated with the anniversary of the Tiananmen Square “incident” were reported as unable to be published on WeChat (Ng, 2015). Post-publication censorship by human censors is also used to control the content of information on social media (Zhu et al., 2013). The leaked 2012 memo Document Number Nine stipulates a target of five minutes for sensitive posts to be deleted by social media platforms (General Office of the Communist Party of China, 2012).

These automatic and manual censorship strategies work in tandem. When a newly sensitive topic emerges, Smith explained, a new automatic censorship filter will be created, which is followed by a period of manual adjustment to make sure that this filter censors out the necessary information and that not too much unnecessary information is censored along with the sensitive content. However, Smith believes that allowing non-sensitive information to continue to be published is more important than most people think. “I don’t think censorship is the most sinister part of this system,” he said. “The most sinister part is that information still exists. When an individual searches for Xinjiang or Tibet and sees happy pictures of mountains and landscapes or holidaymakers eating local food, they don’t think that there is censorship.”

This demonstrates the complexity of the Chinese computational propaganda system. If content was simply blocked or deleted, users would realise that this content was missing and, perhaps, be more susceptible to influence by this kind of content if they did discover it.

This is part of a positive propaganda strategy that has been found to be used by the Chinese government domestically. Rather than attacking critics, the majority of the state’s social media strategy seems to be posting positive information that fosters national pride and confidence in the achievements of the Chinese state. This positive propaganda strategy is particularly prominent during sensitive political events or national holidays, fostering distraction rather than engaged argument (King et al., 2016). This positive propaganda appears to be more important to the Chinese state’s information strategy than the censorship of the Great Firewall or Golden Shield Project. The next case described in this working paper provides evidence that this positive propaganda strategy is also used internationally.

#### Case 2: Positive Propaganda on Twitter Aimed at Foreign Audiences

Angela Jenkins (a pseudonym) was working for the London-based organization Free Tibet in the summer of 2014, overseeing their online communications and social media campaigns. Jenkins had been working with Tibetan NGOs and the Tibetan community for some time and says she had “gotten quite used to seeing a lot of spam on Twitter that seemed to be intended to cover up any true stories about Tibet and any of the messages from the Tibetan exile community from the numerous Tibet NGOs” (A. Jenkins, personal communication, 2017). She had accepted this spam as part of the terrain but started to notice a different kind of

computational propaganda strategy emerging online. “There didn’t seem to be a lot we could do about it and it seemed very unsophisticated, just a lot of noise, really, designed to cloud out any genuine news,” she said. “But then, there seemed to be a shift around 2014/2015 in general in the Tibetan movement. Instead of trying to engage in the Tibetans’ arguments the Chinese government’s strategy seemed to change.”

This new strategy, Jenkins explained, focused on the distribution of positive propaganda, replacing the previous strategy of engaging with the arguments of the Tibetan community. As part of her job, Jenkins was seeing many positive news stories on Twitter, which she reported were all quite distorted. Then she noticed that many of the accounts that were sharing these news stories were “strange”. They were all following each other but did not otherwise interact with each other; they were all sharing the same links from the same Tibetan information websites that painted a rosy picture of the situation in Tibet, and the profile photos of many of these accounts appeared to be fake (stock images, images taken from photographers’ websites, celebrities, etc.).

Angela had found an organized group of about 100 fake accounts on Twitter that existed to retweet content that reflected the Chinese state’s account of the situation in Tibet, sourced from Chinese websites and official state media. While it was not possible for the team to obtain evidence of who administered these fake accounts, Jenkins said the sophistication of the propaganda efforts led her to believe that they were Chinese state sponsored. Whether this is the case or not, their effect was the same. This spam dominated the information being shared on Twitter in Tibet and Tibet-related hashtags and skewed the information that came up on the platform when searching for these hashtags towards the perspectives of the Chinese state and away from the perspectives of the Tibetan exile community and those who work with them.

However, both internet technology and Chinese politics move fast and the use of fake and robot accounts on Twitter now appears much more sophisticated and widespread than the efforts that Jenkins found. The next section presents original research into computational propaganda on Twitter related to China.

### Case 3: Anti-Chinese-State Bots on Twitter

Although Twitter is blocked in China, it is still used by some Chinese individuals, particularly as a subversive space for those who consciously want to engage in discussion about sensitive political issues (Sullivan, 2012). A random sample of 10,890 monthly active, non-private Twitter accounts found seven (0.15 percent) were used by individuals who were apparently located on the Chinese mainland (Bolsover, 2017). Twitter is also widely used in Hong Kong, with an estimated 24 percent of the population active Twitter users (Statista, 2016) and was seen as an important place for political activism in Occupy Central and the subsequent Umbrella Movement that started in September 2014 (Lee, 2015; Lee & Chan, 2016).

In order to investigate the current state of computational propaganda on Twitter, we collected all of the tweets that were posted to Twitter between 21 February and 8 April 2017 that used one of a set of hashtags associated with general Chinese social, political and cultural topics. The hashtags were chosen based on a preliminary test that was designed to ascertain

the most common hashtags used by Twitter users when posting about issues associated with Chinese politics. These hashtags for which data were collected can be divided into eight groups based on topic:

1. Commonly used locations in Chinese politics: #China, #Hongkong, #Beijing, #Shanghai, #Xinjiang, #Tibet, #Taiwan
2. Commonly used locations in Chinese politics (in Mandarin): #中国, #香港, #北京, #上海, #新疆, #西藏
3. Hashtags associated with Chinese culture and positive publicity: #ChinaCulture, #ChinaTravel, #panda
4. Hashtags associated with areas of Chinese territorial disagreement: #SouthChinaSea, #Diaoyudao, #Senkaku
5. Hashtags associated with Buddhism: #dalailama, #buddhism, #Kadampa
6. Hashtags associated with Chinese premier Xi Jinping: #XiJinping, #习近平 and #XiVisit
7. The hashtag #humanrights (in Mandarin): #人权
8. The hashtag #AntiChina

This data set represents a snapshot of the information being shared in relation to China and Chinese politics over this six-week period. The final data set contained 1,177,758 tweets from 254,132 unique accounts. Each of these users posted on average 4.6 tweets during the time period that contained one of the followed hashtags (an average of 0.1 posts per user per day.)

However, the information environment on Twitter in relation to China and Chinese politics is dominated by a small number of voices. More than half of the tweets that used one of these China-related hashtags were posted by users who posted 100 or more times during the data collection period and 42 percent of posts were posted by users who posted more than 300 times during the data collection period.

Almost 30 percent of the tweets in the data set came from one of the top 100 highest-posting users within these hashtags. Of these 100 users, 18 had been suspended (presumably by Twitter because of their high-posting and likely-automated nature). Each of the users that had not been suspended was an automated account. No pro-Chinese-state accounts were found within these top 100 posting users; however, half of these users were automated accounts posting anti-Chinese-state content. Within these automated, anti-Chinese-state accounts there were two large bot groups: the 1989 group and the pan-Asia group.

Table 1: Top 100 highest-posting accounts within China related hashtags

	Number of accounts	Number of posts	Percentage of posts in dataset
Anti-Chinese-state bots			
1989 group	22	117,578	10 percent
Pan-Asia group	22	44,678	4 percent
Independent anti-Chinese-state bots	5	7,969	0.68 percent
Both anti-Chinese-state and commercial content	1	1,090	0.09 percent
Other political bots			
Professional news bots	10	39,239	3 percent
"Fake news" bots	4	10,213	0.87 percent
Other non-political bots			
Commercial bots	8	34,860	3 percent
Job bots	6	8,592	0.73 percent
Other bots (non-political)	4	6,620	0.56 percent
Account suspended			
Account suspended	18	64,170	5 percent
TOTAL	100	335,009	28.44 percent

### The 1989 bot group

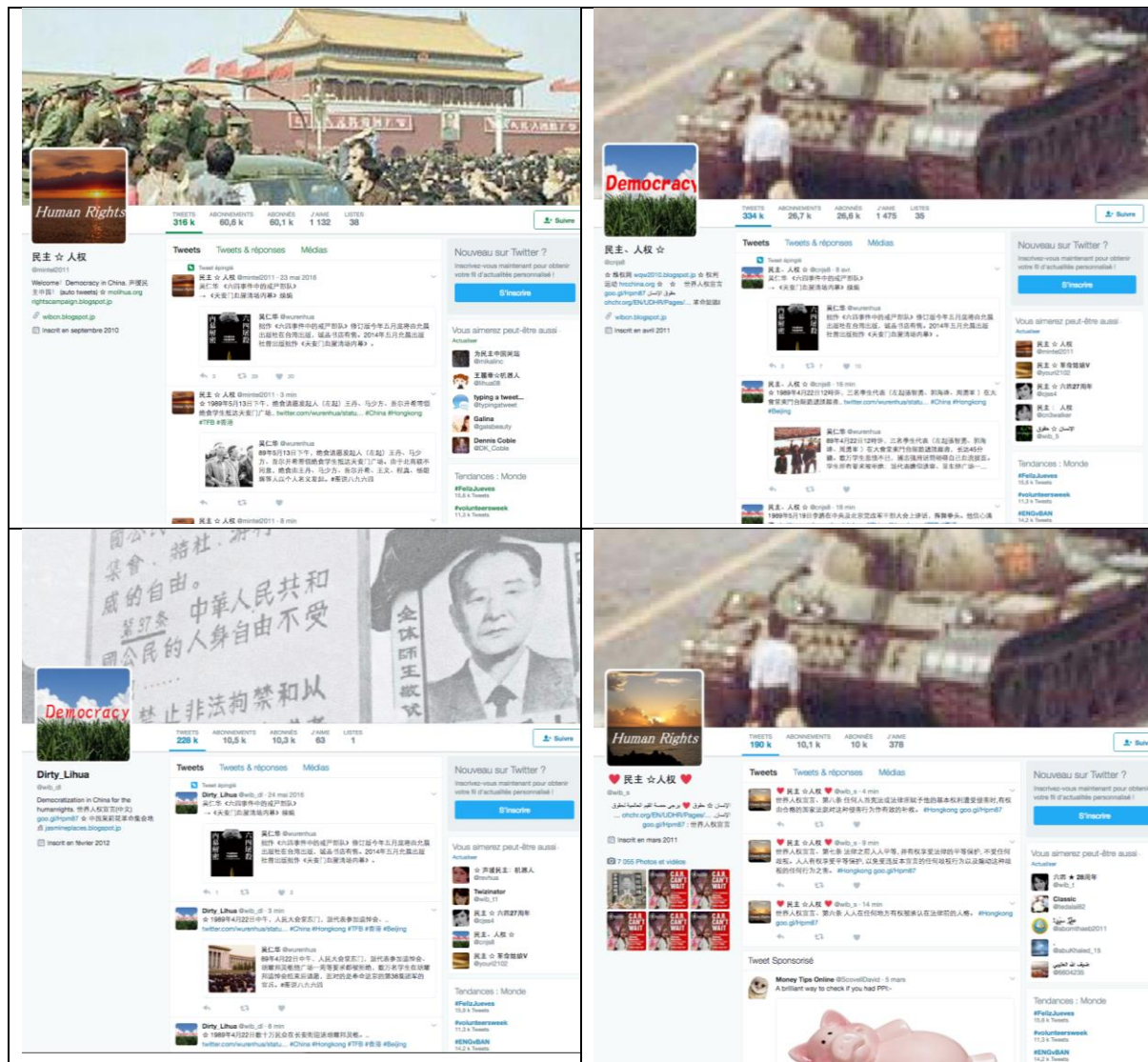
Accounts in this group promote content about human rights in China, particularly related to keeping alive the memory of the 1989 student-led democracy movement that ended with the Tiananmen Square "incident". All of the posts of accounts in this group are in simplified Chinese and information posted by these accounts dominates hashtags related to China and major Chinese cities in both English and simplified Mandarin (#China, #Hongkong, #Beijing, #Shanghai, #香港, #北京, #上).

Accounts in this group often use variations on the same profile name "民主, 人权" (democracy, human rights). These accounts also all use similar screen names (cnjs8, wib\_dl, wib\_s, cjss4, wib\_z), similar profile pictures (often of generically attractive Asian women or photos with the words human rights or democracy) and similar or the same header pictures (images associated with human rights in China such as the famous "tank man" in Tiananmen Square). The 22 accounts that were among the top 100 posters in this data set posted on average 118 tweets

per day that used one of the hashtags monitored in this data collection. These accounts all utilized the Japanese-based service [twitbot.net](http://twitbot.net) to post their content to Twitter.

Figure 1 shows the top four highest-posting accounts in this bot group within analysed hashtags across the data collection period and shows how similar the accounts within this group appear. Three have almost identical screen names, two have identical profile pictures and two have identical header images. The profile pictures and header images of all four accounts have a similar format. Three of the four accounts include a link to a [blogspot.jp](http://blogspot.jp) blog. While there is a variation in the number of friends and followers between these accounts, each of these accounts has a very similar number of friends and followers, suggesting that they have gained followers through reciprocal following. Each of these accounts has posted at least twice in the past 20 minutes and appear to post frequently, having posted between 190,000 and 334,000 times since they were initially created.

Figure 1: The Top Four highest-posting accounts in the 1989 bot group



Source: Author's screenshot June 16, 2017.

Note: The 22 accounts in this group that were among the 100 highest-posting accounts in the data set posted both original and retweeted content. All of the retweets of accounts in this group were originally posted by 吴仁华 (@wurenhua), a leader in the 1989 movement who fled to America following the protests and is now active in promoting democracy in China. Figure 2 shows two of these example posts. Both of the original posts by wurenhua have a picture from an important event from the 1989 pro-democracy movement. Accounts in this bot group retweet these messages, adding common hashtags such as #China, #Hongkong and #香港 (Hong Kong in simplified Mandarin) and #TFB, an abbreviation for “the follow back club”, which indicates that if an account follows the user they will follow that user in return. This potentially might explain why all of the accounts in this group have a very similar number of friends and followers.

Figure 2: Examples of forwarded posts from the 1989 bot group

 <p>☆ 民主、人权 @cnjs4 · 19 h            ☆ 1989年5月13日下午，天安门广场，绝食学生的绝食誓言..  <a href="https://twitter.com/wurenhua/status/596489776821211136">twitter.com/wurenhua/statu...</a> #China #Hongkong #TFB #香港</p> <p>吴仁华 @wurenhua            89年5月13日下午，天安门广场，绝食学生的绝食誓言。绝食开始时，王丹曾带领全体绝食学生宣读绝食誓言。#图说八九六四</p>	<p>Translation:</p> <p>☆ Democracy, human rights @cnjs4 19 hours            ☆ On the afternoon of 13 May 1989 in Tiananmen Square, the students on hunger strike took an oath...  <a href="https://twitter.com/wurenhua/status/596489776821211136">https://twitter.com/wurenhua/status/596489776821211136</a> ... #China #Hongkong #TFB #Hongkong</p> <p>Wu Renhua @wurenhua</p> <p>When the hunger strike began, Wang Dan led the hunger strike students to read the hunger strike oath.            #Images of 4 June 1989</p>
 <p>人权 ★ 民主 (2017) @wib_3 · 15 h            1989年5月27日，《民主歌声献中华》在香港跑马场举行，香港影视界明星及歌星倾巢而出..  <a href="https://twitter.com/wurenhua/status/596489776821211136">twitter.com/wurenhua/statu...</a> #China #Hongkong #TFB #香港</p> <p>吴仁华 @wurenhua            89年5月27日，《民主歌声献中华》在香港跑马场举行，香港影视界明星及歌星倾巢而出，活动由黄霑、陈欣健、曾志伟、岑建勳主持，持续12小时，共为民运筹得1300万港币。入场观众人数估计近百万。#图说八九六四</p>	<p>Translation:</p> <p>Human rights ★ democracy (2017) @wib_3 15 hours</p> <p>27 May 1989 “The Concert for Democracy in China” was held at the Hong Kong Racecourse, Hong Kong film stars and singers turned out in full force.... #China #Hongkong #TFB #Hong Kong</p> <p>Wu Renhua @wurenhua</p> <p>27 May 1989 “The Concert for Democracy in China” was held at the Hong Kong Racecourse, Hong Kong film stars and singers turned out in full force. The activities were presided over for 12 hours by Huang Zhan, Chen Xinjian, Eric Tsang and Cen Jianxun. A total of 13 million Hong Kong dollars was raised for the democracy movement and the number of viewers was estimated to be almost one million #Images of 4 June 1989</p>

Source: Author's screen captures June 16, 2017.

Note: While members of this group appear to retweet only posts from Wu Renhua, many of these bots also post frequent links to the Universal Declaration of Human Rights in Mandarin. All of these tweets are posted using the hashtags #China and #人权 (human rights in Mandarin); this means that, in particular, #人权 is dominated by this bot group. Eleven accounts in this bot group each posted more than 1,000 times using the hashtag 人权 during the data collection period.



Figure 3: Examples of original posts from the 1989 bot group



民主 ☆ 六四27周年 @cjss4 · 23 h  
☆ 世界人权宣言、第二十一条 2 人人有平等机会参加本国公务的权利。 #China #人权 goo.gl/Hpm87

民主 ☆ 六四27周年 @cjss4 · 23 h  
☆ 世界人权宣言、第二十一条 1 人人有直接或通过自由选择的代表参与治理本国的权利。 #China #人权 goo.gl/Hpm87

民主 ☆ 六四27周年 @cjss4 · 23 h  
☆ 世界人权宣言、第二十条 2 任何人不得迫使隶属于某一团体。 #China #人权 goo.gl/Hpm87

Translation:

Democracy ☆ 27th Anniversary of 4th June @cjss4 23 hours  
The Universal Declaration of Human Rights, Article 21 2. Everyone has the right of equal access to public service in his country. #China #Human Rights [link to the Universal Declaration of Human Rights in Mandarin]

Democracy ☆ 27th Anniversary of 4th June @cjss4 23 hours  
The Universal Declaration of Human Rights, Article 21 1. Everyone has the right to take part in the government of his country, directly or through freely chosen representatives. #China #Human Rights [link to the Universal Declaration of Human Rights in Mandarin]

Democracy ☆ 27th Anniversary of 4th June @cjss4 23 hours  
The Universal Declaration of Human Rights, Article 20 2. No one may be compelled to belong to an association. #China #Human Rights [link to the Universal Declaration of Human Rights in Mandarin]

Source: Author's screenshots June 16, 2017.

Note: The existence of this coordinated bot group aimed at promoting human rights and democracy in China and keeping the aims of the 1989 protest movement alive is relatively surprising. Publishing in simplified Chinese, this group is presumably aimed at Chinese individuals, either those who jump the wall from the Chinese mainland to use Twitter or the Chinese diaspora (such as students studying abroad). As a result, information shared on Twitter with the hashtags commonly used by this bot group, such as #China and #人权 (human rights), appear to be dominated by this pro-democracy, anti-Chinese-state information. Indeed, this is not the only anti-state group posting in simplified Mandarin on Twitter.

### The Pan-Asia Group

A second large bot group existed that aimed to disseminate information about the victims of the pan-Asian “Ponzi scheme”. It has been reported that 220,000 people lost the money that they invested in the Kunming Pan Asia Nonferrous Metals Exchange when the exchange collapsed (China Economic Weekly, 2015; VOA Chinese, 2015). There have been many protests by those who lost money in this collapse and accusations that the local government was complicit in promoting this scheme and allowing it to continue.

This group appears to have a similar number of accounts (with both the 1989 group and the pan-Asia group having 22 accounts in the top 100 posting accounts in the data set) but they post less frequently than the 1989 group. The 22 accounts in this group who were among the top 100 posters in the data set post, on average, 43 times per day in one of the hashtags monitored in this data collection. This is lower than the cut-off point of 50 tweets per day used in some quantitative studies to identify likely bot activity. Additionally, accounts in this group do not appear to be using automation platforms or custom scripts to post to the platform, with the source of tweets for accounts in this group being either Twitter for Android or Twitter for iPhone.

Many of the accounts in this group utilize similar screen names that appear to be random strings of characters, such as GG8bjf0629Ehtvr, DkAvNtlRmLDHJYI and 5KMGRvJX9mSYaoQ. However, other accounts in the group use more traditional names such as refugee\_chinese, Sexymonkey793 and Devid98608606. However, several of the accounts in this group present themselves as major Chinese news organizations in their profile name and display photos (using traditional Chinese characters) such as 雲南日報 (Yunan Daily News), 中國新聞 (China News), 中國·瑞麗 News (China Rili News) and CCTV or educational institutions such as 北京大學 (Peking University), 上海财经大学 (Shanghai University of Finance and Economics) or 吉林大学 (Jilin University).

Figure 4 shows the top four highest-posting accounts in this group and demonstrates the similarity between accounts in this group. All four of these accounts have usernames composed of nonsensical strings of characters and numbers. However, three of the accounts have uses names that suggest that they are media organizations. Despite publishing predominantly in simplified Chinese, each of these four accounts lists their location as being in the United States. Each of these accounts has approximately 1,000 friends and 300 followers and appears to post frequently, having posted between 14,000 and 37,000 tweets since their creation in either 2016 or 2017.

Figure 4: The top four highest-posting accounts in the pan-Asia group





Source: Author's screenshots June 16, 2017.

Note: Several of these accounts used the same information in their profile descriptions – despite being created at different times. For instance, both China Ruili News, created in June 2016 with a written location of California, USA, and China Yunnan Mosuo<sup>1</sup> local conditions and customs Devid, created in October 2016 with a written location of New Jersey, USA, had the same (nonsensical) profile description.

Figures 5 and 6 show examples of retweeted content from the pan-Asia group. These examples demonstrate the frequency of the activity of these accounts, the consistency of topic content and the interrelations between these accounts, which appear to predominantly retweet content published by other accounts in the group.

<sup>1</sup> The Mosuo are an ethnic minority who live predominantly in Yunnan and Sichuan Provinces in China.

Figure 5: Example of retweeted content in the pan-Asia group



Translation:


Shanghai University of Finance and Economics retweeted Stubborn Protest @juejiang01 3 May

The #Pan-Asia victims were forced to Lishan by the Kunming, Yunan government. This cannot be helped until suffering every possible torment they would go to Beijing to request national aid in hope of recovering justice and their hard-earned money. #Wang Qishan #Yao Ming #Meng Jianzhu #Xi Jinping #Central Commission for Discipline Inspection #Hainan Airlines #Guo Wengui @PDChina

Shanghai University of Finance and Economics retweeted Stubborn Protest @juejiang01 3 May

Kunming government documents set up Fanya to participate in fraud 43 billion. Pan-Asian Exchange. #Apollo #Wang He #Joan #Chang'an Street #Xinhua News Agency #Pan Asia

Figure 6: Example of retweeted content in the pan-Asia group



Translation:

China Rili News retweeted

Xiamen University @ghhiuy\_56789994 7 January

In response to @nbzhenglifang

China Yunnan Kunming Second level regional government made a contract with China's National Bank. The national media was meticulous in reporting this rare people's catastrophe. #Pan-Asia Making millions of people suffer the government's power to cheat and bully, living in dire straits, there is no justice. #Hold the Kunming Yunnan Government accountable @PDChina

China Rili News retweeted

Xiamen University @ghhiuy\_56789994 7 January

In response to @mikalinc

China Yunnan Kunming Second level regional government made a contract with China's National Bank. The national media was meticulous in reporting this rare people's catastrophe. #Pan-Asia Making millions of people suffer the government's power to cheat and bully, living in dire straits, there is no justice. #Hold the Kunming Yunnan Government accountable @PDChina

Note: Accounts in this group tweeted with a wide variety of hashtags. This group showed up frequently in the data set for their use of hashtags such as #北京 (Beijing) and #习近平 (Xi Jinping). However, as the screenshots above demonstrate, accounts in this group also post frequently in hashtags that were not monitored as part of this data collection.

### Other Anti-Chinese-State Bot Activity on Twitter

This analysis also found evidence of other independent anti-Chinese-state bots (such as pro-Uighur and pro-Hong Kong independence bots) on Twitter posting in simplified Chinese, Japanese and English. One bot, which was perhaps associated with the 1989 group, posted quotes and links to the Universal Declaration of Human Rights in both simplified Chinese and Russian.

Restricting analysis to only the hashtags associated with Tibet and Buddhism (#dalailama, #buddhism, #Kadampa and #Tibet) found no evidence of the pro-Chinese-state perspectives that were described in the previous section as having been prominent on Twitter in 2014/2015. Instead, within these Tibet- and Buddhism-related hashtags there was evidence of automation and groups working together to promote the messages of the Tibetan exile community and disseminating information about repression of ethnic Tibetans by China, predominantly in English.

Taken together this analysis of computational propaganda in relation to Chinese political topics on Twitter seems to suggest that the Chinese state has given up the fight over discourse on Twitter, both in English and in Chinese. However, this content is aimed at a small number of Chinese users who have the technological means or desire to access Twitter. The next section examines evidence for the use of robots, fake accounts and public opinion manipulation on China's version of Twitter: Weibo.

### Case 4: Domestic Public Opinion Manipulation on Weibo

Although it is sometimes referred to as a Chinese Twitter, (Sina) Weibo, the largest microblogging platform in China, provides different affordances for political speech and for public opinion manipulation than Twitter. It also has a very different user base, with high levels of penetration in urban and affluent areas of the Chinese mainland (Bolsover, 2017). Weibo has been seen as important in a variety of political events in China, such as the death of migrant Sun Zhigang in 2003 (which resulted in the abolition of the custody and repatriation system) or the release of blogger Guo Baofeng after a 2009 postcard-writing campaign (Yang & Calhoun, 2007; Zheng & Wu, 2005; Zhou, Chan, & Peng, 2008). Many commentators have pointed to the emergence of an online civil society on Weibo that encourages a renegotiation of acceptable political speech in China with society constraining the state as much as the other way around (Yang, 2009, p. 45; Zheng, 2007).

Weibo is also more explicitly part of a strategy of political governance with state mouthpieces encouraged to use the platform to promote their messages to citizens and social media used to monitor public opinion. The state has also shown itself to be responsive to the political information posted online (Herold, 2008). Given its prominent place within Chinese politics and its supposed potential to challenge the existing balance of political power in Chinese society, it is unsurprising that there has been evidence of computational propaganda and public opinion manipulation on Weibo and other social media platforms in China. It has been estimated that individuals employed by the Chinese state post almost 500 million messages to social media every year as if they were the genuine opinions of ordinary people; 53 percent of these posts were on government-run websites and 47 percent on commercial websites (half of which were posted to Sina Weibo) (King et al., 2016).

Fake accounts also appear to be frequently employed to manipulate information on Weibo. In an analysis of networks of news dissemination from major information providers, evidence of retweeting from fake accounts was found in 3 of the 50 analysed stories and 30 percent of accounts that acted as opinion leaders for disseminating news information were fake (Bolsover, 2013a). The fake accounts identified in this research were highly clustered, with accounts within a particular group all following each other. Accounts within a group often used the same or similar profile pictures. These accounts had far below the average number of followers on the platform. Accounts within a particular group would “all post the same commentary on the same message, often posting twenty messages within several minutes ... never posted original messages, only retweeted others’ content, and they had no interaction with other users on their profiles” (Bolsover, 2013a).

The activity of these fake accounts meant that some news stories appeared much more popular on the platform and may have been included in site trending topics and thus seen and forwarded by many more individual Weibo users due to the influence of these fraudulent accounts.

These fraudulent accounts are recognized as a major problem on Weibo; however, it is hard to estimate the scale of the issue. The platform itself deletes known fraudulent accounts to prevent this activity (Yu, Asur, & Huberman, 2012) and the posts of some accounts that appear to have been marked by the platform as fraudulent are hidden from user timelines (Bolsover, 2017). It is estimated that close to or even more than 5 percent of accounts on Weibo may be fake (Bolsover, 2017).

These pieces of quantitative research provide an indication of the scale of public opinion manipulation that occurs on Weibo but cannot speak to the actual content and drive of the actions of these fraudulent accounts. They also cannot speak to a particularly important functionality of Weibo in relation to online political information – comments. A major difference between Twitter and Weibo that is particularly relevant to its political position in the country is that Weibo posts provide threaded inline commenting functions at the site of the original post. These comments can be sorted by most popular, verified users or the logged in user’s connections. While retweeting and participating in conversations via hashtags are seen as the most important affordances for political conversation on Twitter, comments are a particularly important part of political and social discourse on Weibo.

In order to investigate whether evidence of computational propaganda appears in Weibo comments, the posts of 25 major information providers – news organizations, government departments and official mouthpieces – were collected over the Spring Festival period. Prior research has suggested that there are higher levels of state-led public opinion manipulation in China during official holidays (King et al., 2016). This data set contained 6,145 posts from these major information providers between 26 January and 7 February 2017. Comment data for each of these posts was collected (at least two weeks after comments were originally posted to ensure that commenting had finished on these stories). This data set contained 1,543,165 comments by 815,776 unique users. These users posted on average 1.89 comments across the collected news stories during the time period.

This data set revealed little evidence of automation within the comments on these news stories. In all, 145 users posted 100 or more comments across all the examined news stories. These users did not appear to be using automated means to make these posts. However, the content of the posts of the highest-posting users indicates that there may be significant trolling within these comments. For instance, the majority of comments left by the highest-posting users in this data set were generic attacks on other users and were not all left on the same news story but spanned multiple news stories analysed within the data set. The majority of comments from the highest-posting user were attacks on the intelligence or honour of another named poster, such as “Reply @username: Everyone in your family has a hole in their brain, your father and mother’s brain issues are especially serious, how can they have given birth so such a low quality person” or “Reply @username: I will kill your father, I can say that too.”

Other comments by this user appeared to indicate strong nationalism and support for the state, such as “China is so great, during Spring Festival the whole world will be busy! Go China, China is mighty [emoji for heart] [emoji for heart].” Another post by the same user on a different news story held a similar sentiment: “China celebrates Spring Festival, the whole world will be more lively, China is great, go China!” While the majority of users who posted comments on these stories appear to be genuine individuals posting their opinions and thoughts, this evidence of high posting by some troll accounts would probably drive the conversation away from productive discussions about these political issues.

## Conclusions

Computational propaganda is a growing phenomenon in Western politics. An increasing number of political campaigns and issue movements have been shown to employ fake accounts, robots and propaganda to further their causes on social media and influence the political process. This working paper presents the first ever summary of computational propaganda in and about China.

The political potential of China’s domestic internet is highly controlled using sophisticated censorship and filtering technologies, a complex legislative regime and the personnel and cooperation of major domestic media companies. Fake accounts are common on China’s microblogging giant Sina Weibo, and are active in disseminating certain information, both political and commercial. Chinese state employees also post large amounts of positive propaganda online to social media, state websites and newspaper websites, particularly around sensitive times.

China, however, appears to have given up the computational propaganda fight on Twitter, in both English and Chinese. However, large and well-organized groups use computational propaganda on Twitter to promote information and perspectives that are counter to Chinese state messages – the 1989 democracy movement, Tibetan rights and the victims of the pan-Asia scheme. Additionally, independent bots promote Uighur and Hong Kong independence. Much of this content is in simplified Chinese and presumably aimed at the Chinese diaspora as well as the population of mainland Chinese who “jump the wall” to use blocked foreign platforms.



The case of China presents several lessons for Western democracies looking to tackle “fake news”, bots and other hallmarks of computational propaganda. Firstly, the Chinese state’s active efforts to control online information are reminiscent of many of the strategies currently proposed to combat computational propaganda in the West. These strategies have been relatively successful in controlling the online information environment, but their employment would run counter to democratic principles. It may, however, be possible to learn from the technological, legislative and practical successes of Chinese computational propaganda, without tending towards authoritarianism.

Additionally, the contrasting cases of the pro-state Tibet spam accounts and anti-state human rights accounts show that Twitter is a battleground for public opinion and that political players apparently see a lot to gain in the use of these computational propaganda techniques to influence the online information environment, particularly in flooding discourse on Twitter about a particular issue with certain information. These computational propaganda techniques are rapidly becoming more widespread and more sophisticated and greater attention needs to be turned to understanding the landscape of online opinion before these nascent online public spheres are entirely undermined by these largely automated propaganda efforts.

## **About the Author**

Before joining the Computational Propaganda project as a postdoctoral researcher, Gillian completed a DPhil at the Oxford Internet Institute studying the effects of the commercialisation of online spaces on their ability to offer a venue for political speech in different political systems, focusing on a comparison of the U.S. and China. She previously completed a double masters in Global Media and Communications joint between the media and communications department at the London School of Economics and Political Science and the journalism school at Fudan University in Shanghai. With a BA in photojournalism and political science, Gillian worked in the media industry in the U.S., U.K. and China as a writer, photographer, multimedia producer, editor and production director before returning to the UK to pursue further education.

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## Citation

Gillian Bolsover, "Computational Propaganda in China: An Alternative Model of a Widespread Practice." Samuel Woolley and Philip N. Howard, Eds. Working Paper 2017.2. Oxford, UK: Project on Computational Propaganda. [comprop.oii.ox.ac.uk](http://comprop.oii.ox.ac.uk)<<http://comprop.oii.ox.ac.uk/>>. 32 pp.

## Series Acknowledgements

The authors gratefully acknowledge the support of the European Research Council, Computational Propaganda: Investigating the Impact of Algorithms and Bots on Political Discourse in Europe," Proposal 648311, 2015-2020, Philip N. Howard, Principal Investigator. Additional support has been provided by the Ford Foundation and Google-Jigsaw. Project activities were approved by the University of Oxford's Research Ethics Committee. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the funders or the University



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