

## **From Big Data to Big Brother 2.0?**

### **the Use of Digital Technology in Governing Authoritarian China**

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Working paper, please do not cite

#### **Abstract**

The development of digital technology has sparked a series of academic and public debates over whether it would empower the state or the society. This debate is further complicated by the rise of big data. This article contributes to the debate by examining China's pro-active approach to embrace big data. It argues that the authoritarian regime in China has been employing big data to transform its governance and to move towards a "big brother 2.0" model. It has combined co-optation with coercive control to exploit digital technology in order to maximize its utility and thus maintain the authoritarian rule. Moreover, the existing debates on digital technology largely focuses on the changing power structure between the state and the society, but neglects that within the authoritarian regime and its implications for authoritarianism. This article argues that the use of massive digital data may backfire against the authoritarian regime when it is employed for power struggle. Thus, the efforts to strengthen the authoritarian rule may end up burying it.

#### **Introduction**

Big data is perhaps one of the most fashionable terms nowadays. Data revolution has let the application of big data expanded to every aspect of our digital society. While big data has been heavily invested by private sectors, it also attracts the attention of public sectors given its potential to contribute to governance. To what extent the development of big data will affect future public governance needs to be examined in the broader context of the digital era. The emergence of Web 2.0 – a decentralising phase in the evolution of the Internet where user-generated content is gradually becoming dominated – has sparked a vivid discussion about the changing nature of information dissemination in authoritarian regimes which works against state control of information (Benkler, 2006; Castells, 2009; Eltahawy, 2010; King, *et al.*, 2013; Rod and Weidmann, 2015; Shirky, 2008; Stockmann and Gallagher, 2011; Stockmann and Luo, 2015; Weidmann, 2015). In particular, social media sites have attracted tremendous academic attention owing to their potential nature as a "liberating technology" that challenges the authoritarian rule through collective mobilisation. Some argue that this is demonstrated by the role of Facebook and Twitter in the wake of Arab Spring (e.g. ElBaradei, 2011). It is argued that the development of the Internet and social media would empower

individual and fundamentally change the way in which information is produced, consumed and shared. As a result, this presents a systematic challenge to authoritarian rules and thus inevitably undermines the latter (Benkler, 2006; Castells, 2009; Eltahawy, 2010; Shirky, 2008).

Yet, the authoritarian regime in China has taken a proactive approach to embrace digital technology in order to strengthen its rule. In the past few years, China has heavily invested in big data for not only its business potential and technological innovation but also potential to improve governance and upgrade state surveillance. In November 2015, the State Council of China officially announced the development of big data as a national strategy (China, 2015c). Given its recent emergence, there is little systematic academic research on the use of big data in China and its implication for authoritarianism. By examining policy documents and academic studies of big data in China, this article discusses the governance strategy towards big data and its implications for the authoritarian rule in China. As it will show, the authoritarian regime in China has been employing big data to transform its governance and to move towards a “big brother 2.0” model. While the Chinese society may benefit from this move by enjoying higher bureaucratic efficiency and more tailored public services, the regime’s approach towards big data may also make omnipresent government surveillance possible.

Needless to say, ‘big data’ projects which entail the management of personal privacy information have been widely implemented in democratic societies. Yet what makes the case of China more intriguing lies in the different ways that personal data is controlled, accessed and used. Edward Snowden’s revelations astonished the world in that extensive surveillance could still be secretly implemented in Western liberal democracies despite the sophisticated and well-defined legal framework to protect citizen privacy against abuse of state power. In comparison, the Chinese government faces almost no legal and practical obstruction when implementing ‘big data’ surveillance projects. It also has the most privileged access to citizen privacy information collected. In addition, after the 2008 financial crisis, the authoritarian regime in China is arguably the most financially capable state that can invest and apply cutting-edge digital technology. Combined with its increasing intentions to push back social autonomy, the transformation through the cutting-edge ‘big data’ technology into the most sophisticated police state in this planet is more than a possibility. Thus, China provides a notable case for us to understand the implications of big data for authoritarianism.

So far, there is a hot debate over the implications of digital technology for authoritarianism. While “liberating technology” perspective argues that the development of Internet empowers individuals and increase information flow (Diamond, 2010; Lynch, 2011), “repression technology” perspective hold that digital technology furthers helps authoritarian regimes to repress the civil rights (King, *et al.*, 2013; King, *et al.*, 2014; Rod and Weidmann, 2015). This article advances the debate by looking at the use of digital technology in governing authoritarian China. As this article will discuss, the authoritarian regime has combined co-optation with coercive control to exploit digital technology in order to maximize its utility and thus maintain the authoritarian rule. However, this article also argues

that there is no guarantee that the above efforts would eventually succeed in maintaining the authoritarian rule in the end.

This article notes a crucial risk of introducing digital technology in autocracy that is largely neglected by the existing debate. The current “liberating technology” versus “repression technology” debate mainly focuses on the social challenge of digital technology to the state. In other words, the debate lies in whether digital technology would empower society or the state. To be sure, the changing nature of power structure between the state and the society is certainly important. However, what is missing is the changing power structure *within* the authoritarian state. How will digital technology affect power structure among political elites in authoritarian regimes? Arguably, this question is equally important if not more than that over the impact of digital technology on society-state relations. Indeed, empirical studies show that the majority of authoritarian regimes failed not because of being overthrown by the masses, but because of divisions amongst the elites (O'Donnell, *et al.*, 1986; Svobik, 2012). In other words, internal challenge is far more dangerous than that from the society to authoritarian regimes.

While the authoritarian regime in China has taken a proactive approach to empower itself against the society by employing big data, this article argues that its authoritarian nature decides this approach extremely dangerous to the regime. This article argues that possibility of authoritarian backfire – the use of massive digital data may backfire against the authoritarian regime – should not be under-estimated. For authoritarian regimes, power struggle among top leaders is always one of the biggest if not the biggest threats to regime survival. As data is highly concentrated in the hands of a few powerful individuals or agencies, it may be destructive enough to take the entire authoritarian regime down when it is employed for power struggle.

Using data to attack political opponent is not new in China. Before the leadership transition in 2012, anonymous sources fed New York Times with detailed corruption materials of the then Premier Wen Jiabao and the then vice President of People's Republic of China Xi Jinping who became the top leader afterwards. Despite its actual effects, exposing these data to the public has no doubted undermined the legitimacy of the regime. The case of China's security tsar Zhou Yongkang also shows how security forces could use its power for department or individual interests. In the big data era, digital technology will no doubt empower security forces and redouble the destructive power of data. When those massive digital sources of data are used for power struggle, the negative effects may be more damaging than ever before. In this regard, it may offset all the efforts that has been made to strengthen the authoritarian rule.

The following sections will elaborate the above arguments in details. It is organized as follows. It will first review the current debate over the implications of digital technology for autocracy. After a brief overview of growing interests in big data in China, it will explore how the government has employed big data to improve its governance and upgrade its state surveillance in order to strengthen its authoritarian rule. Afterwards, it will discuss how the

use of big data may backfire against the authoritarian regime followed by the concluding remarks over resilience of authoritarianism.

### **Debating digital technology: “liberating technology” versus “repression technology”**

What are the implications of the development of digital technology for autocracy? Will it undermine or strengthen autocracy? The literature presents two contrary perspectives: “liberation technology” versus “repression technology”. The first perspective argues that modern information and communication technology can deliver liberation to individual citizens by “expand(ing) political, social, and economic freedom” (Diamond, 2010). Unlike traditional media, Internet has empowered the society by promoting information flow.

Internet in particular exposes netizens with foreign ideas that was not available before (Lynch, 2011). Thus it leads to the spread of Western ideas including democracy and freedom and thus undermine pro-authoritarian values. At the domestic level, information flow led by Internet and communication technology also facilitates the organization of social protest and opposition forces (Diamond, 2010; Lynch, 2011; Pierskalla and Hollenbach, 2013). In short, “liberating technology” perspective considers the relevant digital technology including Internet and social media as a “liberation” technology that pose a fundamental challenge to information control under the authoritarian rule.

On the contrary, “repression technology” perspective considers digital technology as a tool for authoritarian regimes to strengthen its repression. Internet censorship obviously plays a key role. The studies of Gary King, Jennifer Pan, and Margaret Roberts show how the Chinese government strategically use Internet censorship to allow criticism towards the government but repress the possibility of using Internet to call for social protests (King, *et al.*, 2013; King, *et al.*, 2014).

In addition to eliminating social mobilization through Internet, autocracy also employs Internet to provide information in favour of the government (Morozov, 2011; Zeng, 2015). In China, the government has been keen in spreading pro-government views on Weibo, Chinese version of twitter, especially after Xi Jinping took power in 2012 (Zeng, 2015). On the one hand, it has taken efforts in containing negative opinions about the government on Weibo. For example, the Weibo accounts of opinion leaders such as Zhang Lifan were closed because of their out-spoken criticism towards the government. Xue Manzi, an influential opinion leader, was even arrested for soliciting prostitution. On the other hand, the regime has launched a series of media offensive. It encouraged party media and officials to open Weibo account in order to win the online battlefield of public opinion. These efforts have successfully contained the spread of negative comments about the government on Weibo (Zeng, 2015).

Therefore, instead of undermining the authoritarian rule, “repression technology” perspective holds that digital technology actually empowers authoritarian states by making them more capable of repressing civil rights. This article will contribute to the debate by

providing more recent evidence to show how big data is used for state repression and governance in China.

Will these efforts achieve their goals? Will cutting-edge digital technology secure the authoritarian regime in the end? This article argues that it is too early to conclude the final outcome of the proactive approach taken by the Chinese government. However, there is a potential danger that has been neglected by the relevant literature. As mentioned earlier, the current debate over the impact of digital technology on autocracy primarily focuses on society-state relations, i.e. whether digital technology empowers the state or the society? To be sure, this is certainly important. However, will digital technology only change the power structure between the state and society? Are its impacts on autocracy solely decided by society-state relations? The current debate neglects the potential impacts of digital technology on power structure within autocracy especially top ruling elites. As this article will note, the development of big data in China may be a game changer of power struggle among top leaders. This may be potentially destructive to offset all the previous efforts that the regime has made to maintain its rule. The following section will first explain the development of big data in China and the governance strategy towards big data followed by the discussion of the potential danger of this approach.

### **China's date with big data**

In order to adapt to the forthcoming digital era, the Chinese government has taken a series of efforts to prepare itself. Big data has been officially announced as an “emerging industry” in China and thus specific national policies have been made to support it. In 2015, the State Council of China has issued “the platform for action to promote the development of big data” in order to encourage social innovation and improve governance (China, 2015c). According to Chinese Premier Li Keqiang, the Chinese government would take efforts to promote China's "cloud computing" to the international market as it did to China's high-speed rail and nuclear power (Yang, 2015). The institutional approach has made the emphasis on big data more than a slogan. The regime has established the Central Leading Group for Internet Security and Informatization led by top leaders including the President Xi Jinping and Li Keqiang in order to embrace the digital era. Given that China has the largest population of mobile phone, internet and social media users, there is considerable potential for the application of big data in China (Cheng, 2014). In this context, the regime views data as national strategic resources and the development of big data as a national strategy with the hope to unlock its business potential as well as to improve regime security and governance in China.

The regime's growing interests in big data has sparked academic enthusiasm. China has organized the largest big data conferences in the world including “Big Data World Forum”, “Big Data Technology Conference”, and “Big Data & Analytics Innovation Summit” (Cheng, 2014). While these conferences focus on the aspect of business potential and technological innovation, the Chinese government is also interested in the use of big data for public sectors.

Thus, it has generously funded social science projects in order to understand the implication of big data for regime security and governance. My brief search shows that National Social Science Foundation of China has funded so far 121 projects with “big data” in the title ranging from political communication, socialist ideology, to public governance.<sup>1</sup> National Social Science Foundation of China is the largest and the most authoritative official institution funding on social science in China. It is directly led by China’s National Planning Office of Philosophy and Social Science and its key purpose is to provide rigorous research for policy-making. Thus, its funding distribution reflects the interest of the government to a large extent.

Among the 121 projects on big data, most were funded in 2014 and 2015 and thus their exact research purposes are not available to the public yet. Nonetheless, a brief review of the project titles and subject reveals some valuable information despite the interdisciplinary nature of some projects. Among the 121 projects, 34 projects belong to the subject of Library, Information and Documentation Science, which is also the most popular subject. The major focus of the relevant projects is the application of big data for improving information analysis and monitoring public opinion. As I will discuss later, the regime sees the development of big data as an opportunity to upgrade its state surveillance. Given that big data is also considered as a way to improve governance, we should not be surprised that management is the second most funded discipline. In addition, 17 and 3 projects belong to the subjects of statistics and demographics respectively, which are mainly interested in how big data could improve government statistics. As I will discuss later, the use of big data may lead to a revolution to China’s official statistics.

Moreover, 17 projects belong to Journalism and Communication with a focus on political communication. For example, a few projects are titled with “studies on youth online political participation in the era of big data”, “identity netizens and study public opinion based on the big data of behaviour and relations”, and “the mobilization mechanisms of social media based on the big data analysis”. Obviously, they are interested in understanding how big data may affect online behaviour and political participation – and more importantly, how the government should handle the emerging challenge.

While the above focus is relatively understandable and may common exist in other countries as well, studies on the implication of big data for socialist ideology may be relatively unique. In the subject of Marxism-Leninism and Scientific Socialism, projects such as “ideological security in the era of big data” and “innovative approach and methods to foster socialist core value among youth in the era of big data” are funded. As ideology plays a crucial role in maintaining the authoritarian rule in China (Zeng, 2015), the regime is concerned with the potential threat of digital technology to its socialist ideology and, more importantly, eager to know how to deal with this threat.

As privacy is a major concern of digital data collection, 4 projects in Law are funded. However, the focus is how to protect consumers’ rights against enterprises. Given the

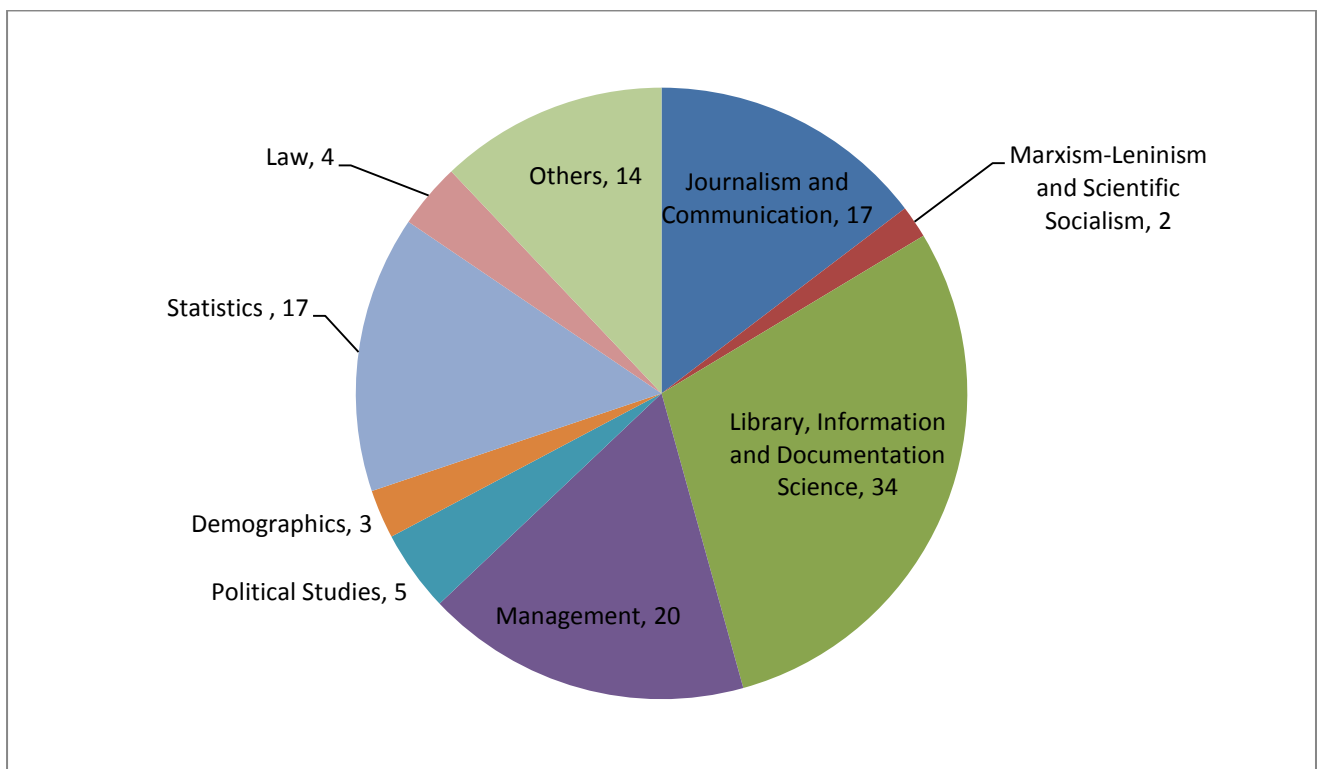
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<sup>1</sup> The search is conducted on 1 November 2015 from <http://fz.people.com.cn/skygb/sk/index.php/Index/seach>

government's strict control over funding, any project on how to protect civil rights will not be preferred. As I shall discuss later, the lack of legal obstacle to protect civil liberty in China has allowed the regime to construct omnipresent government surveillance by equipping with cutting-edge digital technology.

Accordingly, the growing academic interests in big data have already generated a large amount of articles studying social implication of big data with specific policy advice to the government. In the following sections, I will select some of the most representative opinions in the Chinese article to introduce the insights of Chinese scholars.

**Figure 1: A Brief Overview of Projects Funded by China's National Foundation of Social Science with "Big Data" in the Title**



### **Big Data for Better Governance?**

As mentioned, a key motivation for the Chinese government's enthusiasm is to improve public governance. This should be examined in the broader context of the practice of e-government in China. The idea of e-government aims to promote more effective and efficient public service with increased transparency of administrative acts by digitalization. Since 1980s, China has been pursuing this e-government strategy by using modern digital technology as a part of its modernization program (Noesselt, 2014). With the development of internet and social media, the Chinese government has actively adapted its governance strategy to the digital era. For example, Weibo has been adopted into the governance strategy

to consult public online opinion in order to rebuild its legitimacy (Noesselt, 2014). In this regard, Weibo is used to encourage more political participation and deliberation in the virtual world and thus strengthen deliberative democracy (Noesselt, 2014).

The development of big data has great potential to bring further changes. Take the Census and Statistics as an example. Since imperial times, China's central government has been struggling to obtain the real information at the bottom. For thousands of years, the central regime has relied on the mid and local governments to collect and report information for decision-making. Yet, driven by various bureaucratic and individual interests, real information is often distorted in the process of collecting and reporting. In Mao Zedong's China, the false report on food production during the Great Leap Forward was a main reason led to the Great Famine. In contemporary China, inflated GDP is a vivid example. Even the Chinese Premier Li Keqiang acknowledged that China's GDP number was "man-made" and unreliable, and he tracked the economy by using his preferred indicator: "Keqiang index" (Economist, 2010). With the development of big data, the central state hopes to directly access the real information at the bottom. Thus, big data may be a key for the central state to solve a governance problem that has lasted for thousands of years. What this means to the centre-provinces relations in China remains to be researched.

In addition to more reliable information, up-to-date statistics through the use of, for example, mobile phones and internet, is also a strength of big data (Cheng, 2014). It is important to note that the traditional statistics are usually generated annually or even more – for example, China's population census is usually conducted every ten years. Thus, the "real time" information provided by big data may mean a revolution to official statistics. Not surprising, China's National Bureau of Statistics is motivated to use big data to improve the census and statistics. In the words of its director Ma Jiantang, official statistics should "sincerely embrace and take efforts in using big data"(China, 2014).

At the local level, local governments have already heavily invested in big data. For example, the provincial government of Guizhou has been working with enterprises such as Alibaba to construct cloud computing infrastructure. In this Cloud services platform, the provincial government shares its data with enterprises and encourages those enterprises to trade their data on this platform. To improve public service is a key goal of this platform. According to an official of Guizhou's department of transportation, the data integration helps the cooperation between police, fire, health care and thus efficiency was enhanced 1.5 times by joint duty (Wang, 2015). Similarly, by using cloud services platform to obtain the data about tour, the government is able to predict the traffic load, the hotel load, or perhaps even security situation and thus be better prepared. Local citizens could also check road traffic and real-time traffic information services by using their phone or iPad to log in Guizhou's Intelligent Transportation Cloud. These local initiatives obviously were supported by central leaders as indicated by China's top leader Xi Jinping's visit to Guizhou's big data center. During his visit, Xi concluded that "I understand it. It is reasonable for Guizhou to develop big data"(Xinhua, 2015).



As mentioned, big data is also a national strategy. In 2015, the State Council of China has issued an official document on how to use big data to improve public governance (China, 2015b). This document assigns specific work to governmental departments with a timeline. For example, Ministry of Commerce, Administration of Quality Supervision, the Ministry of Industry and Information Technology and other governmental entities are asked to employ big data to establish a product information traceability system before 2016 (China, 2015b). In short, the Chinese government has actively adopted big data into its governance strategy in order to improve its bureaucratic efficiency and decision-making capacity.

### **From Big Data to Big Brother 2.0?**

While acknowledging the positive effects of ‘big data’ on bureaucratic efficiency and quality of public services, big data also has great potential to upgrade the state surveillance. The case of Snowden has revealed that this is a common problem for all governments in the world regardless of their authoritarian or democratic nature. Yet, China’s state surveillance is relatively notable for several reasons. The first one is the exceptional economic strengthen of the Chinese government. After China’s emergence out of the 2008 financial crisis, the authoritarian regime in China has become the most adequately resourced national government in the entire planet. China’s expenditure on internal security stands out to even surpass this defence spending despite the fact that China’s military budget is the second largest in the world behind the US. Therefore, the regime has the most adequate financial resources to invest in cutting-edge big data technology to equip its security force.

Second, there is also a strong willing to push back social autonomy by employing big data in China. Since 2011, the authoritarian regime has taken extra efforts in strengthens its so-called “social management capacity” (Li, 2011) – an official concept that refers to social control activities but downplay its coercive connotation –with the hope to construct a so-called “social management system with Chinese characteristics” (Li, 2011). The 18<sup>th</sup> party congress report used the term “social management” to replace “e-government” (Noesselt, 2014:456). It states that

“We should improve the online services and advocate healthy themes on the Internet. We should strengthen social management of the Internet and promote orderly network operations in accordance with laws and regulations. We should crack down on pornography and illegal publications and resist vulgar trends” (Noesselt, 2014:456).

Innovation is the key emphasis of “social management capacity” here. The Chinese government has called for all levels of governmental organs to innovate social management capacity (Li, 2011). In this context, with its distinct advantages, big data has naturally been adopted into the governance strategy in order to reshape the state-society relations in the favour of the regime.

Third, related with the previous one, China has the strong state power combined with weak civil awareness. As mentioned, the case of Snowden shows how extensive surveillance

could still be implemented in democratic societies in which there is a strong legal framework to protect civil rights. In comparison, China has much weaker civil awareness to against the abuse of power by the state. The major obstacle to implement big data for state surveillance mainly lies in technical aspects instead of legal ones. At the same time, China's evolving legal framework pertaining to citizen privacy seems to be leaning towards the side of the government – the recent announced state security law has allowed the security bureau full access to the data (China, 2015a).

This strong state power has also led to a different government-business relationship. Despite the majority of Internet giants in China are not state-owned enterprises, this does not prevent the regime to win their full cooperation. Baidu, the Chinese version of Google, for example, is famous for its close relations with the regime and following the government guideline such as internet censorship. The price of saying no to the government is likely to be unaffordable. In 2009, despite its size and global influence, Google's unwilling stance to censor its service at the request of the Chinese government was made at the expense of losing almost the entire Chinese market – the largest Internet market in the world. Seven years later, Google finally decides to return to China with a more active attitude to comply with the tight censorship requirements and Chinese law to store data locally in China (Carsten and Lee, 2015; Efrati, 2015) – despite there is no guarantee that this attitude would help Google to win back what it lost in the Chinese market in the past few years. Google's painful lessons have demonstrated how helpless when an enterprises confronts the state power in China despite Google's global influence. This kind of government-business relationship has led to fewer obstacles for the Chinese government to access data owned by the private internet giants than that in democratic societies. Therefore, adequate financial resources, strong institutional incentives combined with strong state power in China had made the most sophisticated state surveillance more than a possibility.

While stepping up Internet censorship, the Chinese government has been strengthening its efforts in obtaining private digital information. For example, under the request of the regime, Weibo has introduced a real-name registration scheme since 2012 despite the operator's concern on its negative impact. All new Weibo users are required to fill in ID registration as well as real name in order to sign up. This registration scheme is also linked with the database of Ministry of Public Security, which will verify the submitted registration information. The registration would not be completed if the name and ID do not match. Thus, inaccurate registration is not allowed. The database of Weibo users has been shared by the police nationwide.

The government has made it very clear that the goal of this scheme is to “regulate the dissemination of objectionable information over the network”(CTCL, 2013). It argues that this may help to undermine the spread of online information with potential to lead to social protest. Indeed, the Chinese government is seriously concerned the eruption of Arab Spring in China. The lesson that it learnt from Arab Spring is that the regime should have strict control on social network and ability to respond to significant public opinion crisis. The registration system enables the security bureau to track and contain information source if necessary.

By implementing these measures, the regime is able to make the individuals in the real world responsible for their behaviours in the virtual world. This has no doubt created a sort of the deterrence effect that would force a kind of self-censorship that social media users would be extra cautious when posting any sensitive information. In this regard, the administrative regulation on Weibo has no doubt undermined freedom of speech in virtual space. Notably, the control of freedom almost happened at the same time when the regime started to use Weibo to consult public online opinion and make itself more responsive to public demands in order to maintain its legitimacy. This has indicated a clear strategy towards social media that combines co-optation with coercive control.

In addition to social media, the Chinese government has also tightened its control on phone use. Despite cell phone technology facilities the organization of rebel groups, the regime's countermeasures have limited its actual effects. Since 2013, the Ministry of industry and information technology has made new regulation on phone use, which requires all telecom service to verify and register user's ID when selling new phone cards(China, 2013). With the various identity information, the government can track and lock the true identity of phone or Internet users. This enables the regime to contain the information source if there is any and thus enhances its capacity to crack down social unrest triggered by petitioners and dissidents. In addition, the regime has also attempted to build its capacity to forecast large popular protest. As early as 2011, Beijing has been considering an "Information Platform of Realtime Citizen Movement" system, which would track the precise movement of 17 million mobile phone user in the city(Lewis, 2011). Once it is implemented, it would provide real-time information about the movement of the population and thus inform any large-scale social protests.

Moreover, in order to further enhance its capacity to forecast large gatherings, the Chinese government has also constructed one of the most expensive and sophisticated closed-circuit television network in the planet. This network involves with more than millions of panoramic closed circuit camera in public spaces that are working 24 hours a day, seven days a week. It covers from highways, public parks, public transports and taxis, elevators to public streets. Not surprisingly, certain sensitive areas such as Tibet and Beijing have been particularly watched. Since October 2015, Beijing's Skynet Project has managed to monitor 100% public streets in Beijing(Zhang, 2015). This is made possible by at least 30 million cameras and participation of 4,000 police in Beijing. Beijing police is not shy in acknowledging that the purpose of those cameras is to prevent "crowd gathering" and street crime(Zhang, 2015). Ironically, the real obstacle to the surveillance scheme is neither legal obstruction nor social opposition but environmental pollution – the Haze has significantly undermined the visibility of those cameras and the regime has to find new technology to let its cameras to see through smog (Hall, 2013).

In addition to the above abroad surveillance, big data also enables the regime to track real-time information of the ideological trends of particular groups. The development of media and internet has fundamentally challenged the CCP's ideological indoctrination as people are exposed to massive information and the traditional way of information control no longer works. Despite the new challenge, the CCP has also made use of those information in

order to adapt its ideological indoctrination and political education in the era of big data. Many university educators see it as an opportunity to upgrade ideological indoctrination. Some scholars suggest that the data mining should focus on the students' digital information (including email, blog, Weibo and Wechat) in order to monitor ideological trends of Chinese college students(Cui, 2015). It is important to review the historical context in order to understand the regime's desire to monitor university students. In 1989, the nationwide student protests triggered by liberalism almost overthrow the authoritarian rule. Although the CCP managed to end the protest by using military troop, it paid a huge social and political cost. Deng Xiaoping (1989) clearly pointed out that his reform program's "biggest mistake was made in the field of education, primarily in ideological and political education." Learning from the protest of 1989 and heeding Deng's warning, the CCP has always kept an eye on ideological trend of university students. It seems that the development of big data has provided an excellent opportunity to upgrade its student surveillance scheme. It is argued that big data could identify the ideological trend in a timely manner and thus let the regime to be more prepared for coming crises (Cui, 2015).

It is argued that the development of big data can help university educators to improve its ability to lead the trend. Some argue that ideological indoctrination could learn from the improved delivery of online advertisement. For example, Chinese universities could make use of the data about study record, library book borrowing record, and download, dissertation, and click of recent news made by students. By analyzing those data, universities could find the focus point of the students and thus improve its political education accordingly(Hu and Huang, 2014).

The Chinese army has also considered big data as a way to strengthen its political education within the army. For example, an article in *Liberation Army Daily* argues that data is "a valuable resource of education" and suggests to establish a big database to monitor ideological trend of the army, which will collect data about soldiers' learning and training program, online behavior, communications and liaison as well as their family and social relationship (Lan, 2014). It argues that this system would help to increase the effectiveness of political education in the army. The authoritarian regime in China held the absolute control of the army and the latter is expected to act as the last line of defense for the regime. As noted above, the authoritarian regime survived in the protest of 1989 by using military forces. As absolute loyalty is required, the regime has always valued the importance of monitoring the ideological trends within the party. It has relied on various formal and informal observation and talk as well as informants to collect the relevant information. Now, the information may be delivered by the collection of digital data in a more timely and reliable manner.

More recently, an ambitious plan has been sketched out by the Chinese government: the digitalization of individual archives ("dang'an" in Chinese). China's dang'an system is borrowed from the Soviet Union to record performance and attitude of individual citizens. Dang'an usually include resume, autobiography, political historical issues, education, and award and punishment. Each category may contain detailed information such as grades in primary school and comments given by teachers. This is to say, a mistake made in primary school will follow the entire of life once it is recorded in dang'an. Similarly, if any political

mistake (e.g. anti-CCP speech) is made and recorded in the dang'an, you will never get rid of it. In the old state-own system, this dang'an is the essential document to decide continual education, employment and promotion. Obviously, negative comments recorded in the dang'an will definitely affect one's education or professional career. For example, in Mao's era, political censorship would decide college admission. It is unlikely to get a university offer if political and ideological thought is recorded as negative in dang'an. This dang'an system has become increasingly irrelevant with the rise of market economy in China. While it is still crucial to people who work for the government and state-own enterprises, it has become obsolete and irrelevant for many.

Yet, this dang'an system may revive with the development of big data as the regime is keen in modernizing this system (Yap and Wong, 2015). In the more recent five year state plan, a blueprint for "social credit system" is made to strengthen social management (Yap and Wong, 2015). This system goes beyond Western (mainly American) financial credit rating system that it aims to record all digital presence of citizens. Big data will enable the regime to digitize its dang'an system and thus strengthen its social control. Obvious, if the citizen makes a few speech to call for popular protest, it may have a negative impact on, for example, the person's employment, education, and retirement benefit.

### **Authoritarian Backfire: Data as the ultimate Weapon?**

The above discussion has explored how the CCP attempts to employ big data to strengthen its authoritarian rule. Will big data strengthen the authoritarian rule in the long run? Although it may be too early to make a firm conclusion, this article argues that the danger of this approach lies in the nature of authoritarian regime: power is concentrated in the hands of a few with very little constraints. This nature may lead to the possibility of authoritarian backfire. For an authoritarian regime, one of the biggest, if not the biggest, threat is elite division. Empirical studies show that the collapse of most authoritarian regimes is caused by elite division instead of being overthrown by the masses (O'Donnell, *et al.*, 1986; Svobik, 2012). Instead of maintaining the authoritarian rule, big data has great potential to destabilize the regime by intensifying the game of power struggle and enlarging its negative effects. In the era of big data, data means power and thus power will be granted to those who controls the data. This might change the power structure within the authoritarian regime in which power is highly centralized and held by a few elites. Massive data digital controlled by the security bureau may turn into a bomb that may bring the entire regime down at any moment if it goes to the wrong hands.

Indeed, data has always been linked with power struggle. Before the development of big data, sensitive information especially corruption had been frequently used for power struggle in China. Before China's once-in-a-decade power transition, various political forces fed oversea media such as *New York Times* with corruption materials including the family corruption of the then Premier Wen Jiabao and Vice President Xi Jinping who were the political opponent of the then security tsar Zhou Yongkang. Soon after Xi took power, Zhou

was arrested and one of the accusations was leaking state secrets. In the name of anti-corruption campaign, Xi also launched waves of purges on Zhou's supporters and political alliance including Ling Jihua. Ling had worked for years as the personal secretary of the former Hu Jintao and the Director of the CCP's General Office and thus controlled significant amount of sensitive information about the party and leaders. Ling Jihua's brother Ling Wancheng fled to the US with those information. China's strong desire to get Ling Wancheng back caused some conflicts with the US at the time. All these examples demonstrate the importance of data in power struggle among top Chinese leaders. Driven by Xi Jinping's anti-corruption campaign, this kind of political scandal will only become more intense.

With the development of digital technology, data will become less fragmented, decentralized, and non-digital and thus more powerful. Therefore, the digital sources of data may be the game changer of the power struggle in authoritarian regimes. If confidential data is highly concentrated in the hands of a few powerful individuals or agencies, it could destroy the entire regime when misused. It is important to note the difference between authoritarian and democratic systems here. In democratic societies, legitimacy of the regime is separate from that of the political system (Zhao, 2009). Corruption, for example, will reduce the regime legitimacy and thus lead to regime change without significantly affecting the legitimacy of the democratic system. However, in authoritarian systems, the regime and political system are combined into one so are their legitimacy. Thus, a Chinese Edward Snowden who disclosed those data may not only take the leaders but also the entire authoritarian system down.

If the non-digital corruption materials could be intentionally used for the purpose of combating political opponents, so is the massive digital information. This would grant enormous power to the security forces that controlled the data. The abuse of power by security forces is not a news in China – they are using their power to pursue individual and departmental interests. The Deputy Minister of National Security, Ma Jian, was reported to use technical means (including recording, reconnaissance and eavesdropping) to benefit certain businessmen (Cui, *et al.*, 2015). Similarly, it is also reported that some Chinese leaders are using their own security forces to spy and wiretap each other (Fisher, 2013). The party head of Chongqing, Bo Xilai, was reported to use security force to plant electronic devices to spy on the then Chinese president Hu Jintao (Fisher, 2013). A crime of the security tsar Zhou Yongkang is leaking state secrets. In the future, digital data will definitely be employed in the power struggle. By then, the regime would pay a much higher price to purge the security tsar like Zhou Yongkang as he or she may control the secrets of all through digital technology.

Similarly, other leaders may also hold some digital data through their own institutions and network. In this situation, leaking data to combat political opponent would be more destructive. It may also be a suicide mission as the opponents will also likely to expose the data in their hands as revenges. This orderless data battle during power struggle may eventually bring the entire regime down.

There is also another scenario. In the previous scenario, digital data may be so destructive to the regime once it is used for factional struggle. However, precisely because of this massive destruction, it may create a sort of deterrent effect among top leaders and thus change the doctrine of the use of data for power. In this scenario, all political actors rationally recognize the destructive power of the digital data and understand the possible revenges of others, therefore, they would be more cautious in using the data. In this sense, digital data becomes the ultimate weapon and its deterrent effects would serve for the purpose of self-defence. Therefore, a relative stable elite politics could be maintained. This is quite similar with the use of nuclear weapon among nations.

Nonetheless, there is no guarantee that this stability would last for long. Accident or misjudgement is always possible. One simple mistake may push the button to start the self-destruction of the entire regime. It would be too arbitrary to predict the sustainability of this relative stable elite politics in the era of big data but we should always bear in mind that the use of big data may backfire against the authoritarian regime.

Indeed, the use of digital data in the anti-corruption campaign has made the above scenarios more than a possibility. The regime has already started to collect personal banking and credit information to identify the network of corrupted officials and collect the relevant evidence. To what extent this will empower the security forces certainly deserve further observations. Nonetheless, given that China's anti-corruption campaign is always related to if not all about power struggle, the participation of big data in the anti-corruption campaign will not be an exception.

### **Concluding remarks: authoritarian resilience?**

The debate over the resilience of authoritarianism tends to be an ancient but eternal one (Baum, 2007; Brown, 2009; Dickson, 2008; Fewsmith, 2006; Gilley, 2003; Li, 2012; Miller, 2008; Nathan, 2003; Pei, 2008; Shambaugh, 2008:176; Shirk, 2007; Yan, 2011). To a large extent, this debate has revolved around the question as to whether the authoritarian regime possesses sufficient adaptive capacity to stay relevant in the rapidly changing environment. As the Internet and communication technology have been transforming our society into a digital one, this debate gets more heated because the challenges facing authoritarian regimes in governing this dynamic and plural, yet increasingly divisive and crisis-prone society are only becoming more serious and multidimensional.

The advent of the big data era has complicated authoritarian governance by being a double-edged sword which has enormous potential to improve public service, or threaten civil liberty, depending on the political context within which it is deployed. As this article discussed, in China, the authoritarian regime has been proactively embraced big data in order to adapt to the digital era. While there is great potential for big data to transform the governance model and strengthen authoritarian rule, the nature of the authoritarian regime has made this approach particularly dangerous. When massive digital data is highly centralized in the hands of a few with little constraints, the damage would be inestimable once it is used

for power struggle. While it may also be a problem for democratic system, this damage will only destroy the regime but not the political system. On the contrary, when it comes to the case of authoritarian regime in which the legitimacy of the regime and political system are combined, big data has great potential to bury the entire authoritarian system in China that is actively embracing it. In this regard, big data may bring fundamental changes to game of throne that is largely neglected by the relevant literature. How will digital technology change power struggle within authoritarian regimes? This is certainly a topic that deserves further analyses.



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Big data: A contested mythical narrative in a developing country. Similar to in other parts of the world, big data entered China as a technical myth promising a brighter future for human society irrespective of geographical, national, and cultural differences. Viktor Mayer-Schönberger's "big data futurist, professor at the Oxford Internet Institute, and author of the bestselling book, *Big Data: A Revolution That Will Transform How We Live, Work, and Think* (2014)" became a legend on Chinese university campuses. A large gap clearly exists between what big data propagandists tell the public through multiple media platforms and who actually benefits from the use of big data as a core productive power in digital capitalism, including as an effective tool to impose certain power over Chinese society.

From big data to Big Brother 2.0? The use of digital technology in governing authoritarian China Zeng Jinhan, Royal Holloway, University of London. 13.00-14.00 Lunch Venue: Chiltern Hall. 14.00-15.30 Parallel Panels. Chair: Xiao Han, Communication University of China. Panelists: Foreign media and cultural cosmopolitanism among Chinese youth Tang Tiankai, University of Westminster. Chinese film and its future in the age of the internet Zhang Caihong, Communication University of Zhejiang, China. Assessing the effectiveness of Henan's "go international" project Yang Liya, Henan University of Technology, China. Global media, media convergence and transformation of Chinese traditional media Song Kai, Communication University of China, China.