



## **Handling COVID-19 with big data in China: increasing 'governance capacity' or 'function creep'?**

### **Author**

Bernot, Ausma, Trauth-Goik, Alexander, Trevaskes, Susan

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**Authors** Ausma Bernot (Griffith University)  
Alexander Trauth-Goik (University of Wollongong)  
Susan Trevaskes (Griffith University)

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### **Abstract**

Building a national system of social governance (*guojia zhili tixi*), which is the long-running governance dream of Xi Jinping, has triggered the creation of China's ‘smart state’ using the tools of new information technologies to advance governance capacity (*zhili nengli*). These systems were already deployed nationally when the COVID-19 pandemic hit China, but were connected at a lesser capacity, targeting specific domains of security, industry or government administration. In response to the crisis, multiple technologies have been merged, exceeding the scope of their originally intended functions. This is known as *function creep*, when surveillant technologies remain functional past achievement of their intended purpose, or *surveillant assemblages*, where multiple surveillant technologies are combined. As more countries turn to digitalisation to increase public security and intensify social and market governance, the expansion of surveillant functions in China and their now-palpable effects on people's lives raises new and pressing questions for scholars and decision-makers alike.

**Keywords** coronavirus; epidemiological surveillance; governance capacity; function creep;

### **COVID-19: a playground for big data**

Challenged by a national crisis in the form of the COVID-19 pandemic, the Chinese Party-state was provided with the opportunity to unite multiple sets of surveillance systems under comprehensive strategies of national, provincial, community and individual governance for purposes beyond disease control. In China, sharing of big data resources is facilitated through the *Action Outline for Big Data Development*, which permits the use of big data to enhance governance capacity and allows government agencies to experiment with the application of data capture and analysis in addressing social challenges (State Council, 2015).

The handling of the pandemic with big data strengthened technological capabilities of the State Council and gave a palpable meaning to the otherwise vague concept of *governance capacity*. Starting February 2020, the COVID-19 crisis became a chance for the Chinese authorities to upgrade hardware and software infrastructures and accelerate an emerging model of big data governance. At this early stage, the Chinese State Council, the highest administrative agency in the Chinese bureaucracy, made a decisive choice to use big data and artificial intelligence to control the pandemic:

*China has fully utilized big data, artificial intelligence, and other new technologies in research and analysis to forecast the trend of COVID-19 developments. These tools have also been exhaustively applied in epidemiological investigations to find every infected person and track every close contact for quarantine. (State Council 2020, 43)*

The new technologies were efficient in squashing the number of viral infections within a short time: on 15 February 2020, the number of infections was 101,726, but a month later, on 16

March, the number plummeted to 450 active cases and has remained controlled since (The World Health Organization, *n.d.*). During the peak infection time in February, China's Ministry of Industry and Information Technology merged geospatial tracking data from China Telecom, China Unicom and China Mobile to track and monitor the movements of the population (Lu 2020). Based on mass surveillance through smartphones, this tracking function was later coupled with *health codes (jiankangma)*, which made algorithmic decisions about who may have been exposed to infection and therefore should quarantine at home (Pan 2020). Telecommunication companies freely supplied national mobile phone users with personalised text messages containing information on the coronavirus situation in areas they had recently visited as part of this scheme. With user authorisation, the initiative generated a colour-marked health code for individual mobile phone users. Individuals could refer to the app to quickly check news and information about disease conditions in provinces and cities they had visited within the past 15–30 days.

By March 2020, state media had reported that over 450 million geotracking searches had been conducted (Credit China 2020a). Focusing on key affected regions and time periods, mass geolocation data purportedly helped authorities predict the spread of confirmed diagnoses and identify suspected carriers, their close contacts, and potential outbreak hot spots. Big data was subsequently described by the director general of the Ministry of Industry and Information Modernisation as an 'extremely effective technological tool' (*ji youli de jishu shouduan*) in the fight against the coronavirus (Credit China 2020c). While geolocating phone users proved the most salient of measures adopted by the Party-state to control the pandemic nationally, it was part of a greater movement that merged, combined, and trialed surveillance technologies.

### **Governance capacity, big data, and platform governance**

The pandemic helped the Chinese Party-state claim the superiority of the Chinese political system by juxtaposing the falling infections numbers to perceived Western inability to contain the spread of the virus (Lin 2020). At a discursive level, Xi Jinping and the Chinese State Council have long discussed social management (*shehui guanli*), which Xi Jinping rebranded as social governance (*shehui zhili*) in a public statement in 2013 (Novaretti 2014). Social governance embarks from a starting point of positivist systems theory. Its proponents view society as akin to a machine that can be engineered for autonomic and self-correcting through deliberate programming and management of inputs (Creemers 2018; Hoffman 2017). In this respect, Samantha Hoffman (2017, 12) has classified social governance as 'a process that programs state security'. Unsurprisingly then, social governance has been identified as one of the core mechanisms used to achieve social stability, and, in turn, to support Xi Jinping's grand concept of *comprehensive national security (zonghe guojia anquan)*; Xi 2018, 3, 130–131). On a concrete level, however, few clear provisions had been advised. This situation changed in November 2019 when the Fourth Plenary Session of the 19th Central Committee of the Communist Party of China (CPC) was convened, a month before COVID-19 mushroomed in the epicenter of Wuhan city.

During the plenum, the Central Committee of the CPC adopted the decision to 'promote the modernization of the state governance system and governance capacity' (State Council, 2019). Just a few months after that, in April 2020, Xinhua News agency touted the Chinese political system as capable of handling large-scale crises, having identified the epidemic as a 'vivid practice of the Party and the country to promote the building of governance capacity' (Xinhua, 2020). Internet Plus, the application of information technologies to government processes, was a key technological element here. By stressing the 'people-centered approach' of Internet Plus crisis monitoring and control, the State Council 'established a new pattern of normalized supervision' (State Council 2021). To unpack this loaded concept of governance capacity, we explain China's recent advances in building platform governance dependent on decentralised data collection and centralised information and look at some of the long-running issues of governing with data in China.

The principle of decentralised data collection and centralised information was foreseen as early as 1994 by surveillance scholar David Lyon, as evidenced by his comment that ‘surveillance is indeed more dispersed, but the same technical systems make it easier for individuals to be traced by central institutions such as government administrative departments or the police’ (Lyon 1994, 51). This principle was clearly noticeable in the governance of the COVID-19 pandemic. In a recent paper Trauth-Goik and Bernotaite (forthcoming) argue that the online government initiative of Internet Plus, which was also used in managing COVID-19, has shifted governance mechanisms to big data systems, radically changing the ways in which the Chinese bureaucracy operates. Namely, Internet Plus has decentralised data collection points by moving government operations to online platforms and reducing informational hierarchies – a long-running and cumbersome characteristic of the Chinese bureaucracy. For Chinese citizens, decentralisation of data collection meant that instead of going to a government bureau to run errands, they could now download an app or use a government website to launch administrative tasks. The use of such platforms and enhanced data-sharing between government departments has resulted in decentralised data collection operations, but highly centralised information resources at provincial and national levels overall, where aggregated data is stored. In line with the broader trends of big data governance in China, COVID-19 data was stored on big data platforms at a national level (State Council Information Office 2020). Beneficial to citizens during a time of crisis, these cyber upgrades quickly extended into health and crisis governance, a trend known in surveillance studies as *function* or *surveillance creep* (Koops 2021; Marx 1988). The COVID-19 management platform, hosted by the National Integrated Government Service Platform (*quanguo yitihua zhengwu fuwu pingtai*), gradually drew from different sets of data: geospatial tracking data, hospital records, and even exam timetables, among others (National Government Service Platform, n.d). In doing so, the platform both compiled personal and medical information for people by means of mass surveillance, and provided citizens with timely government services during the worst throes of the pandemic. Citizens could use the national COVID-19 government platform to check if they had come into contact with any confirmed cases or confirm the most current status of the pandemic prevention and control. The platform also aggregated data that updated the health codes on individual smartphones every night based on algorithmic predictions of infection risk (Ningbo Zhenhai District Committee, 2020; State Council Information Office, 2020). Meanwhile, China’s social and market regulatory initiative, the ‘Social Credit System’ (SCS)—otherwise referred to as the Social Trust System—was leveraged to quickly funnel financial aid to struggling businesses. Issuing of credit during the COVID-19 pandemic was posited by the State Council and subsequent government ministries to kickstart the economy, with financial institutions encouraged to lend at the same time that barriers to entry were lowered for borrowers (Knight & Creemers 2021). To enable a smooth transition back to work, individuals and businesses that had lost income due to lockdown restrictions or quarantining were able to adjust their repayment arrangements without sanction. Fast-tracked appeal and restoration channels were also opened to ensure medical firms with poor records could more easily restore their creditworthiness (Knight & Creemers 2021). The system’s punitive dimensions were also relied upon to restrain and punish individuals found to be uncompliant with COVID regulations. Local governments around the country declared that those guilty of concealing a positive case of coronavirus would be placed on city-level, social credit blacklists (Credit China 2020b). Besides their legal accountability, in Shanghai individuals with a past record of coronavirus infection; those found concealing their medical or travel histories; those suspected of being in contact with infected patients; or those who resisted placement in separate medical observation facilities, were deemed untrustworthy (Credit China 2020b). This trend was mirrored at the central level. National ministries created new, untrustworthy behaviours to include within their respective blacklists in order to address issues such as drivers using express lanes reserved for key workers, or businesses selling pandemic-related products without adequate trademarking or licensing (Knight and Creemers 2021, p. 11)

## Domestic and international implications of China's newfound governance capacity

Viewed separately, most technologies encompassing China's smart state could be considered unremarkable. However, the country can aggregate multiple surveillance systems to a scale never before seen. Moreover, while far from being homogenous or static perspectives in the wake of the pandemic, researchers have observed that a failure of Western countries to adequately control the virus has helped fuel a positive perception of state surveillance in China and enhanced the regime's legitimacy in the eyes of Chinese citizens (Yu 2020; Liu 2021; Liu & Graham 2021). At the same time, however, the quick deployment of surveillance measures such as the Health Code has made the state's data harvesting and analytic capacity more salient to citizens in China than ever. For example, the mere suggestion that the Health Code could be re-engineered for post-pandemic uses by the municipal government in Hangzhou in May 2020 sparked major controversies and a backlash from the public wary of China's surveillance creep (Liu and Graham, 2021). Larry Catá Backer (2020) argues that when data-driven analytics are treated as a governance technique, not a regulatory system, they may shape or algorithmically determine population behaviours.

In their recent publication, Knight and Creemers (2021) similarly observe how the COVID-19 crisis has provided an opportunity for the Chinese Party-state to mobilise multiple governing tools, many of them based on big data. The authors suggest that obtaining a detailed understanding of the Party-state's learning processes in building a smart state is crucial, as is observing the acceptance levels towards digital governance, an attitude possibly habituated by the expansion of sensitive data collection during COVID-19. The technical components of China's emerging smart state cannot be divorced from the encapsulating, ideological backdrop of the Party-state, which seeks to forge a distinctive kind of society and citizen fit for the new digital era.

Digitilisation is on the immediate agenda of many modernising societies. China is at the forefront of using those technologies, and, through the COVID-19 crisis, has demonstrated that it can plug and use technological systems to govern collective efforts, thereby engaging the whole society and changing behaviours at scale. Arguments around political systems aside, platform governance can be moulded to help combat crises of different kinds. In a world where our data is already captured by government and businesses, big data products have the capacity to hasten the response to crises and mobilise populations. The impending COVID-19 vaccine and travel passes developed by governments worldwide will govern our lives, and it is crucial that public deliberation is consciously included in the decision-making process of creating and launching these solutions. Transparency and accountability regarding how the new systems of big data will be used and when they will be ceded must be the new norm.

## References

- Backer, Larry Catá. 2002. "And an Algorithm to Entangle them All? Social Credit, Data Driven Governance, and Legal Entanglement in Post-Law Legal Orders." *Penn State Law Research Paper* No. 05-2020, Available at SSRN: <https://ssrn.com/abstract=3512608>
- Credit China. 2020a. "Ministry of Industry and Information Technology: Personal information will not be divulged through the use of 'big data communication travel cards'" [工信部“通信大数据行程卡”的使用不会泄露个人信息]. *Credit China Platform*, viewed 27 May 2021, [https://www.creditchina.gov.cn/toutiaoxinwen/202003/t20200326\\_189696.html](https://www.creditchina.gov.cn/toutiaoxinwen/202003/t20200326_189696.html).
- Credit China. 2020b. "Shanghai: Persons found to be concealing epidemic will be placed on credit blacklist" [上海：个人隐瞒疫情将列入征信黑名单]. *Credit China Platform*,

viewed 18 May 2021

[https://www.creditchina.gov.cn/chengxinwenhua/chengxindajiatan/202002/t20200214\\_184891.html](https://www.creditchina.gov.cn/chengxinwenhua/chengxindajiatan/202002/t20200214_184891.html)

- Credit China. 2020c. "Stringently implementing 'Health Code' database security and personal information protection measures" [严格落实“健康码”数据安全和个人信息保护措施]. *Credit China Platform*, viewed 10 March 2021, [https://www.creditchina.gov.cn/toutiaoxinwen/202003/t20200305\\_187219.html](https://www.creditchina.gov.cn/toutiaoxinwen/202003/t20200305_187219.html)
- Creemers, Rogier. 2018. "China's Social Credit System: An Evolving Practice of Control." *SSRN Electronic Journal*, viewed 17 May 2021, <https://www.ssrn.com/abstract=3175792>
- Haggerty, Kevin D., and Richard V. Ericson. 2000. "The surveillant assemblage." *The British Journal of Sociology* 51(4): 605-622. doi:10.1080/00071310020015280
- Hoffman, Samantha. 2017. "Programming China: the Communist Party's autonomic approach to managing state security." PhD thesis, University of Nottingham, UK.
- Knight, Adam and Creemers, Rogier. 2021. "Going Viral: The Social Credit System and COVID-19." *SSRN Electronic Journal*. Available at: <https://www.ssrn.com/abstract=3770208>
- Koops, Bert-Jaap. 2021. "The concept of function creep, Law, Innovation and Technology." *Law Innovation and Technology* 13 (1): 29-56. Doi:10.1080/17579961.2021.1898299
- Kreimer, Seth F. 2004. "Watching the watchers: Surveillance, transparency, and political freedom in the war on terror." *University of Pennsylvania Journal of Constitutional Law*, 7(1), 133.
- Lin, Delia. 2020. "The Construction of Political Superiority." *The China Story*. Available at: <https://www.thechinastory.org/yearbooks/yearbook-2020-crisis/>
- Lyon, David. 1994. *The Electronic Eye: The Rise of Surveillance Society*. Minneapolis: University of Minnesota Press.
- Lu D. 2020. "China uses mass surveillance tech to fight spread of coronavirus." *New Scientist* (1971) 245(3270), 7. doi:10.1016/S0262-4079(20)30378-X
- Marx, Gary T. 1988. *Undercover: Police Surveillance in America*. Berkeley: University of California Press
- National Development and Reform Commission. 2020. "Persisting in being the system's first. Strengthening credit management's power, process and effectiveness, advancing the construction of the social credit system" [坚持制度先行 强化信用监管 有力有序有效推进社会信用体系建设]. *National Development and Reform Commission*, viewed 17 May 2021, [https://www.ndrc.gov.cn/xwdt/dt/dfdt/202001/t20200108\\_1218664.h](https://www.ndrc.gov.cn/xwdt/dt/dfdt/202001/t20200108_1218664.h)
- National Government Service Platform. n.d. <http://gjzfwf.www.gov.cn/col/col633/index.html>
- Ningbo Zhenhai District Committee. 2020. "Ningbo Global One Code" Is Fully Implemented Today! The Health Code Is Automatically Updated Every Day, and Personal

- Information Can Be Modified 3 Times If Incorrectly Filled out.” [宁波全域一码通”今起全面推行! 健康码每天自动更新, 个人信息填错可修改 3 次] *Ningbo Zhenhai District Committee of the Chinese Communist Youth League*, February 18.  
<https://baijiahao.baidu.com/s?id=1658869953090815337&wfr=spider&for=pc>
- Novaretti, Simona. 2014. “Social Governance vs. Social Management: Towards a New Regulatory Role for Social Organizations in China?” *CDCT Working Papers* 32 (1): 29. URL: <http://www.cdct.it/workingpapers>
- Pan, Xiao-Ben. 2020. “Application of personal-oriented digital technology in preventing transmission of COVID-19, China.” *Irish Journal of Medical Science (1971-)* 1-2. doi:[10.1007/s11845-020-02215-5](https://doi.org/10.1007/s11845-020-02215-5)
- State Council. 2015. “Action Outline for Big Data Development” [ 国务院关于印发促进大数据发展行动纲要的通知 ] [http://www.gov.cn/zhengce/content/2015-09/05/content\\_10137.htm](http://www.gov.cn/zhengce/content/2015-09/05/content_10137.htm)
- State Council. 2019. “The Decision of the Central Committee of the Communist Party of China on a number of major issues concerning upholding and perfecting the socialist system with Chinese characteristics and promoting the modernization of the national governance system and governance capacity is published in a single copy” [ 《中共中央关于坚持和完善中国特色社会主义制度、推进国家治理体系和治理能力现代化若干重大问题的决定》单行本出版] [http://www.gov.cn/xinwen/2019-11/05/content\\_5449034.htm](http://www.gov.cn/xinwen/2019-11/05/content_5449034.htm)
- State Council. 2020. “Fighting COVID-19 China in action”. State Council. [http://english.www.gov.cn/news/topnews/202006/07/content\\_WS5edc559ac6d066592a449030.html](http://english.www.gov.cn/news/topnews/202006/07/content_WS5edc559ac6d066592a449030.html)
- State Council Information Office. 2020. “Guiding Opinions on Doing a Good Job in Normalizing the Prevention and Control of the New Coronary Pneumonia Epidemic” [关于做好新冠肺炎疫情常态化防控工作的指导意见] <http://www.scio.gov.cn/xwfbh/xwfbh/wqfbh/42311/43043/xgzc43049/Document/1679170/1679170.htm>
- State Council. 2021. “People-centeredness establishes a new pattern of normalized inspection and promotes the modernisation of governance capacity: a summary of State Council’s work on the implementation of “Internet Plus Inspection” in the past two years” [以人民为中心”建立常态化督查新格局 推进政府治理能力现代化建设——国务院“互联网+督查”实施两年来工作综述]. [http://www.gov.cn/xinwen/2021-04/25/content\\_5602082.htm](http://www.gov.cn/xinwen/2021-04/25/content_5602082.htm)
- Trauth-Goik, Alexander, and Ausma Bernotaite. *Forthcoming*. “Decentralising Data Collection and Centralising Information in the People’s Republic of China: Decentralise, Manage and Service Reforms.” *Surveillance and Society*. URL: <https://bit.ly/3geuUTD>
- The World Health Organisation. *n.d*. “China: WHO Coronavirus Disease (COVID-19) Dashboard.” <https://covid19.who.int/region/wpro/country/cn>

Xi, J. 2018. *Xi Jinping's View on Overall National Security: Excerpts from Essays*[习近平关于总体国家安全观: 论述摘编]. Chinese Communist Literature Publishing House: Beijing.

Xinhua News. 2020. "Continuous progress in the "epidemic" test: vivid practice of China's anti-epidemic governance capabilities" [在战“疫”大考中不断进步——中国抗疫治理能力的生动实践] [http://www.gov.cn/xinwen/2020-04/28/content\\_5506901.htm](http://www.gov.cn/xinwen/2020-04/28/content_5506901.htm)