SURVEILLANCE INFRASTRUCTURES IN AND FOR CRISES: A COMPARATIVE ANALYSIS OF CHINA AND SOUTH KOREA'S DEVELOPMENT OF QUARANTINE SURVEILLANCE MOBILE APPLICATIONS DURING COVID-19

Youngrim Kim
University of Michigan

Yuchen Chen
University of Michigan

Fan Liang
University of Michigan

Muzammil Hussain
University of Michigan

Introduction

This article examines China and South Korea's health surveillance infrastructures that are being developed and deployed during the 2019-2020 coronavirus pandemic (COVID19). By comparatively analyzing quarantine surveillance mobile applications that the Chinese and South Korean governments are utilizing in pandemic control, we investigate how these two different governmental regimes - one authoritarian and the other democratic - construct and propagate what their state-of-the-art surveillance technologies can offer to the public in moments of emergency.

As China being the epicenter of the outbreak and South Korea being one of the closest countries from mainland China, these two countries have been actively developing health surveillance infrastructures to monitor and control the pandemic and maintain the state. The Chinese government has collaborated with technology giants like Alibaba to implement the Alipay Health Code, a color-coded classification system that is now being

used in more than 200 cities (Lin 2020). Meanwhile, the Korean government launched the "self-quarantine safety protection app" in March 2020 to enforce home isolation to suspected carriers and monitor their health statuses.

Through a mixture of walk-through method and situational analysis (Clarke, 2005), this article aims to unpack the processes in which these technologies become developed and examine the politics around their deployment. More broadly, we argue that analyzing them offers new opportunities to investigate the relationship between state surveillance and personal privacy in the context of a national crisis. As surveillance tactics that were deemed oppressive and undemocratic in ordinary times get easily normalized in crisis situations, these moments allow us to reveal the precarious and flexible nature of surveillance and privacy while destabilizing the West-oriented, dichotomic understanding of these concepts. This article tackles this question by observing the relationship between relevant actors – the state officials, industry professionals, and general users – and various contestations/negotiations involved in the process of designing and deploying these quarantine surveillance apps.

Theoretical Framework

We approach these quarantine technologies as infrastructures that both sustain and perform the work of surveillance, containment, and management of people and viruses. Infrastructure studies can lend us a theoretical lens in examining how the politics involved in the infrastructure design are translated into objects, categories, and practices of that technology (Anand, Gupta and Appel 2018), and furthermore, influence how crises are understood and governed. In our case, these state-initiated surveillance infrastructures show us how the state inscribes the promise of stability within the technology by claiming that they can solve or at least prevent the crisis.

Infrastructure is also a site where different actors and politics converge: governments, corporations, activists, citizens, and objects. Involving heterogeneous actors, infrastructure is often seen as "a terrain of power and contestation" (ibid. 2). In this respect, we attempt to unpack such dynamics of power among different stakeholders involved - the state officials, technology companies, healthcare experts, and users - by mapping out the ecosystem and collaborators of these surveillance infrastructures.

Lastly, literature in Science, Technology, and Society has informed us that the classification work involved and embedded in these technologies is inherently political (Bowker and Star 1999). By unpacking these categorizations, we attempt to reveal how these surveillance infrastructures operate as both technologies of care and technologies of control (Foucault 1978).

Method and Findings

The method of this article is two-front: 1) a situational analysis that involves mapping out key actors, debates, and events from the collected archive of first and secondary materials related to China and South Korea's quarantine apps and, 2) the "walkthrough method" (Light, Burgess, and Duguay, 2016) of these apps. First, in terms of secondary materials, we collected mainstream newspaper coverage that has commented about these projects that were published between January 1st, 2020 and April 30th, 2020. Second, we collected an archive of materials produced both by the state and corporate actors who were involved in these projects in the same timeframe. We obtained these materials via official government websites and corporate web pages. Then, we mapped out the ecosystem of these projects by asking – who were the main stakeholders of these projects, who were subject to these technologies, and what data were these technologies using under what mechanism. Lastly, through a comparative perspective, we looked for recurrent themes that reflect what the Chinese and South Korean states promise from these technologies and how they negotiate issues of surveillance and privacy when communicating about them to the public.

The analysis reveals that the main stakeholders involved in these projects were not only the state departments but also private technology firms including telecommunications and platform companies. In the case of China's Health QR code, Alibaba's Alipay was the central collaborator of the project, while South Korea's Safety Protection App was built with the help of Korea's telecom firms, which provided with real-time location data. However, it is important to note that, in the case of China, the Health QR code was built upon the existing surveillance infrastructures made by the same technology firm, Alipay. Meanwhile, South Korea's health surveillance technologies were integrated into the existing bureaucratic system managed by the government. Another major difference was concerned with whom these technologies surveil. In China, the surveillance infrastructure targeted a large scale of people in an omnipresent and compulsory manner. Any people who needed to re-enter the cities were subject to this technology. In contrast, the South Korean government made app installation mandatory to only those who were recommended to self-isolate, instead of all citizens. In Korea's case, the risk groups – those who were suspected of carrying the virus – were first sorted out through traditional contact tracing method, and then were subjected under app-based management.

We also discovered similarities between China and Korea's quarantine surveillance infrastructures. Although China's app conducted mass surveillance when Korea chose a more targeted approach, both apps involved significant moralizing work of defining "ideal" and "deviant" users. While ideal users were heavily praised by the news media

as responsible, loyal citizens, those who uncompiled to the app's orders or tried to game the system were vilified and punished. These mechanisms demonstrate that in both countries, the responsibility to manage and prevent the pandemic shifted from the government to individuals, while the power to surveil and control these people were re-centered to the state-corporate nexus. We argue that establishing such structures of vilification, and the surveillance infrastructures' promise to manage such deviant subjects, operate as vital mechanisms that contribute in naturalizing surveillance in times of crisis.

References

Anand, Nikhil, Akhil Gupta, and Hannah Appel. 2018. *The Promise of Infrastructure.* Duke University Press.

Bowker, Geoffrey C, and Susan Leigh Star. 1999. *Sorting Things Out: Classification and Its Consequences.* Cambridge, MA: The MIT Press.

Clarke, Adele, 2005. *Situational Analysis: Grounded Theory After the Postmodern Turn*. Thousand Oaks, CA: Sage Publications.

Foucault Michel. 1978. *The History of Sexuality, Vol. 1: Introduction.* Tavistock, London.

Light, Ben, Jean Burgess, and Stefanie Duguay. 2016. "The walkthrough method: an approach to the study of apps." *New Media and Society* 20(3): 881-900.

Lin, Liza. 2020. "China Turns to Health-Rating Apps to Control Movements During Coronavirus Outbreak". *WSJ*. Retrieved from https://www.wsj.com/articles/china-turns-to-health-rating-apps-to-control-movements-during-coronavirus-outbreak-11582046508