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Smart Governance in China's Political-Legal System

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Abstract

The belief in quantitative indicators based on standardized data as an effective tool has become more entrenched than ever before, in both public and corporate governance, because of a drive to achieve more efficiency and accountability. The power of automated computation systems and the ubiquitous availability of big data have magnified the potential and capacities for quantification. The People's Republic of China (PRC) has enthusiastically embraced these advanced technologies. The rapid digitization and automation of social governance in China, called "smart governance," entail new approaches to social and political control, driven by innovations in algorithmic systems, big data analytics, and artificial intelligence. This article seeks to reveal the ideological foundations of the PRC's push for the digitization and automation of social governance. Drawing on international scholarship on Chinese Marxism and Leninism, it argues that the positivist organizational and ideological principles of Marxism-Leninism help explain why technology and automation are embraced so enthusiastically by the Chinese party-state: they provide a way to achieve the dream of rational Marxist governance. Through an empirical analysis of 120 articles from 2014 to 2021, this article illustrates that these ideas are, or may be, a vital part of shaping academic discourse around smart governance in China today. An analysis of Chinese academic discourse is an essential part of understanding the ideological foundations of Chinese Communist Party (CCP) governance and statecraft and how these commitments shape the embrace and deployment of smart technologies. The way in which scholars discuss the transformative power of smart technologies demonstrates a similar ideological understanding of social governance.

Keywords

automation – big data – ideology – smart governance – social control

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Introduction

In 2019, Cui Yadong, a former president of the Shanghai Municipal High People's Court, claimed that artificial intelligence (AI) would turn justice into a real science. He added that science would make adjudication fairer and more efficient (Hu 2019). This remark revealed a common conviction among China's intellectual and ruling elites: that governance and justice need to be "scientific" in order to be legitimate and fair (Bakken 2000). This article argues that the positivist organizational and ideological principles of Marxism-Leninism help explain why technology and automation are embraced so enthusiastically by the Chinese party-state: they offer a way to achieve the dream of rational Marxist governance. Since Cui's remarks were delivered, China has rapidly expanded the integration of advanced technologies with its governance apparatus, leading to the widespread automation and digitization of both judicial and government services.

Automation and digitization in governance and adjudication have become a worldwide phenomenon. The majority of developed countries have made some progress in digitizing and automating certain aspects of government and judicial services, such as the cloud-based judicial management system in Israel, Legal-Net (Reichman et al. 2020), the use of risk assessment tools in sentencing decisions (Coglianese and Dor 2021), and predictive analytics and pattern recognition tools in social care (Vogl 2021).

The People's Republic of China (PRC) has been at the vanguard of these developments. The Chinese Communist Party's Central Committee (CCPCC) has designated technological development as an important driver in the "modernization of the national governance system and governance capacity" [*guojia zhili tixi he zhili nengli xiandaihua* 国家治理体系和治理能力现代化] (CCPCC 2013, 2019). In 2017, China's State Council published the country's strategy for developing AI: the New Generation Artificial Intelligence Development Plan [*Xin yidai rengong zhineng fazhan guihua* 新一代人工智能发展规划]. This strategy outlined China's goal of becoming the world leader in AI by 2030, to monetize AI into a trillion-renminbi industry, and to emerge as the driving force in defining ethical norms and standards for AI (Webster et al. 2017). Additionally, the Chinese government sees AI as key tool for overcoming various social, moral, and environmental challenges (Roberts et al. 2021: 65). Since then, and in sharp contrast to more hesitant countries, Chinese local governments and courts have enthusiastically embraced advanced technologies, rapidly digitizing and automating various aspects of their governance and judicial processes.

This development is encapsulated in the term "smart governance" [*zhihui zhili* 智慧治理]. Smart governance entails new approaches to social and political control by the political-legal system in China that leverage advanced technologies driven by algorithms, AI, and big data analysis.[1] It can also be described as the digitization and automation of social governance, a holistic policy approach to public security and stability maintenance. The framework of social governance and its objective to maintain stability is the primary objective of China's political-legal system.

For example, China's police, as the primary enforcer of social governance, are increasingly using big data analysis for solving past crimes or preventing future crimes (Sprick 2019). Likewise, China's judiciary has also embraced automation as part of its smart court building policy [*zhihui fayuan jianshe* 智慧法院建设], a far-reaching reform that aims to integrate courts with digital platforms using applications that automate specific judicial tasks. Automation is, allegedly, conducive to the "scientific and objective administration of justice" [*kexue keguan de sifa* 科学客观的司法]. At the same time, Chinese government institutions have leveraged technological innovations to improve administration and implementation as well as to control and manage public life (Creemers 2018). This includes the use of AI in education, cities, traffic management, and social governance (Elliott 2020).

Contrary to the common misconception that China lacks debate around the ethics of AI and automation, ethics played a central role in China's rapid digitization and automation drive (Gal 2020). In the past few years, China's legislature and executive have moved to regulate the future development of AI and to establish new ethical norms to support the continued digitization and automation of both public and private life.[2] In this way, China's regulatory regime for automation and AI is rapidly taking shape (Sheehan 2022).

These developments in rapid digitization and automation in China's political-legal system are a manifestation of specific ideological convictions. One important element is the association of AI with impartiality and scientific objectivity, with a promise that it will fundamentally transform and improve governance. This assumption explains the general acceptance of AI by the political-legal system in social governance and justice administration. For example, in a survey of Chinese internet users and legal aid seekers on the

1 For the sake of clarity, in this paper, some algorithms are part of AI, but not all algorithms are considered AI. An algorithm is a set of instructions used to solve a specific set of problems or perform a calculation. Here, AI refers to the simulation of human intelligence.

2 See, e.g., the Cybersecurity Law (2017), Personal Information Protection Law (2021), the Data Security Law (2021), and, most recently, the Algorithmic Recommendation Management Provisions (2022).

automation and digitization of Chinese courts, Chen and Li (2020: 42–51) found that the vast majority of online respondents perceived computer algorithms and related technology to be beneficial for law and legal institutions. The mass digitization and publication of judicial decisions increased confidence in the justice system: Online respondents believed that the introduction of big data and machine learning would enhance the accuracy of legal outcomes. Respondents among legal aid seekers were more divided, but generally held positive attitudes toward the automation of judicial services.

Similarly, in a review of Chinese legal scholarship debating the automation of justice, Papagianneas (2021) finds that legal scholars evaluate these developments in a positive light. He argues that the instrumentalist understanding of the role of courts in China's political-legal context explains this positive assessment. Lastly, Stern et al. (2021: 528–529) argue that Chinese courts are enthusiastic in their embrace of AI because it provides court leaders with an appealing source of information and control. For frontline judges, it lightens the workload and outsources responsibility for decision making.

In sum, the public, intellectual elite, and government officials have demonstrated great enthusiasm about advanced technologies in China's governance system, albeit it for different reasons. AI and algorithms are perceived as scientific, reliable, and impartial. Previous scholarship has examined Marxist-Leninist axioms that underpin Chinese theoretical conceptions and justifications of the world that drives the rapid adoption of these new technologies (Voegelin 1948; Munro 1971). It argues that the Chinese Communist Party (CCP) has a strong ideological affinity with quantification and automation. Its "scientific and objective" [*kexue keguan* 科学客观] approach to law and governance is driven by Marxist-Leninist ideas about the malleability of humans, social control, technological determinism, and rational governance (Hua 1995; Hoffman 2017; Gueorguiev 2021). Through this Marxist-Leninist approach, human morality and society are reduced to a set of scientifically objective truths (Bakken 2000). Automation technologies are, therefore, important elements in building a scientifically objective mode of governance, because they cater to the belief in science as the primary legitimating principle for governance decisions (Creemers 2020).

To get a handle on these ideas and illustrate the salient of such ideas in shaping discourse around smart governance in the PRC today, this article analyzes debates by PRC intellectual elites over the "smartness" [*zhihuihua* 智慧化] of China's governance, that is, smart governance, with a particular focus on the discourse around automation technologies. It uses the theoretical frameworks by Hoffman (2017) and Gueorguiev (2021) to reveal key themes and attitudes that recur in the debate over automation and the smartness of governance

and to critically analyze the underlying normative themes and ideological commitments.

This article contributes to the literature in a few ways. First, it provides a comprehensive English-language review that defines and analyzes Chinese academic discussions on smart governance. Chinese academic debates often play an important role in Chinese policy formulation. They are among the few arenas available for a certain degree of open debate, including the expression of critical opinions. Therefore, it is an integral part of understanding Chinese policy-making and reform (Snape 2019).

Second, this review article builds on previous research that discusses the link between China's adoption of technology and broader strategies of social management and control. Most notably, Hoffman (2017) is one of the first to explain how the Chinese party-state conceptualizes social governance in a way that offers a clear role for automation. Additionally, Gueorguiev (2021) shows that the Leninist governance principles of control and social inclusion are being enhanced by the use of modern technologies. This article contributes to this stream of research by reviewing the interaction among these questions in Chinese scholarship.

Third, it connects critical literature on metric fixation, quantification, and automation (see, e.g., Morozov 2014; Merry 2016; O'Neil 2016; Muller 2019; Zuboff 2019) with Chinese research on smart governance, a policy initiative that is arguably a manifestation of metric fixation, a tendency to excessively emphasize metrics as a legitimate basis for decision making. This dialogue offers insight into the implications of automated governance driven by Marxist-Leninist interpretations of society and guided by political priorities that are entirely different from those in the West. By doing so, it hopes to enrich the global debate on automation in governance and adjudication by introducing these contemporary Chinese voices to the English-speaking world.

In what follows, this article first reviews the international theoretical discussion on Marxism-Leninism to determine the axioms that underpin the CCP's approach to governance and how it relates to automation. It explains why science and technology are seen as central to CCP rule. This theoretical discussion precedes an empirical analysis to identify the degree of salience of these ideas in shaping academic discourse on smart governance in China today. Second, we present the data and methods. The empirical analysis examines journal articles published in the China National Knowledge Infrastructure (CNKI) database from 2014 to 2021. The review is a metasynthesis, using practices of narrative and systematic literature reviews. It is an immanent evaluation and interpretation of the Chinese scholarship and theory. Then, we review the

debate, using the themes that emerged to structure the review. These sections analyze discussions by Chinese scholars about the implications of digitization and automation for China's governance. Finally, the conclusion discusses the implications for broader social governance reforms and the importance of ideology in understanding change in the PRC.

A Theory of Marxism-Leninism and Science and Technology

Since the early nineteenth century, the standardization and quantification of nature and public life has been intimately intertwined with the emergence of the modern nation-state and bureaucracy (Porter 1995; Desrosières 2002). Because of a drive for more efficiency and accountability, the belief in quantitative indicators based on standardized data as an effective tool has only become more entrenched, in both public and corporate governance (Scott 1998; Demortain 2019). This metric fixation is further reinforced in societies with low social trust and systems with pronounced principal-agent conflicts (Muller 2019).

The increasing power of automated computational systems and storage capacity, as well as the ubiquitous availability of big data, have multiplied the potential uses of quantification and numerical indicators. In the twenty-first century, automatic systems have grown more complex, powerful, and intrusive. Their application ranges from sports analysis to credit ratings to recidivism risk assessments and beyond (O'Neil 2016). Inherent in this trust in numerical indicators is the belief that they represent scientific objectivity, an ideal that implies fairness and impartiality and, most important, authority (Porter 1995: 3–8). This belief creates what Merry (2016: 9) calls indicator culture: "a body of technocratic expertise that places a high value on numerical data as a form of knowledge and as a basis for decision making." Nonetheless, consumers of these indicators often forget about the contingent social processes that generate the data, meaning that they can only simulate objectivity.

Indicator culture, metric fixation, and a culture of quantification all refer to the trends described above.[3] They can be traced back to scientism, an intellectual movement that dates to the early sixteenth century. It is based on three central dogmas: (1) the assumption that mathematization of natural phenomena is a model science that all other sciences should emulate; (2) all realms in the universe are accessible using scientific methods; and (3) all reality

3 These terms are used interchangeably here.

inaccessible to mathematized science is either irrelevant or illusory. This belief found its way to modernity via positivism and, according to some scholars, found its perfect expression in Marxism and communism (Voegelin 1948). More recently, quantification has gained popularity since the 1950s through the rise of managerialism, since the 1960s through the demand for greater public accountability, and since the 1980s via the development of new public management styles that require clear goal setting, monitoring, and incentivizing (Muller 2019: 42–70). This global trend is now being driven by the ubiquitous availability of big data, in turn leveraged by (machine-learning) algorithms (O'Neil 2016; Zuboff 2019). Nowadays, the majority of public and corporate governance is arguably subject to quantification (Berman and Hirschman 2018). In the following sections, we explain step by step that Chinese ideology about governance and modernization are closely intertwined with science and technology and that this stimulates a push toward automation in its rule. To do so, we draw primarily on the theoretical interpretations of Chinese governance by Hoffman (2017) and Gueorguiev (2021).

Chinese Marxism and Scientism

The CCP's affinity with quantification and automation has deep ideological roots. Beginning with Chinese Marxism, China's intellectual elite believes in human malleability. According to Munro (1971: 610–612), a fundamental assumption of Marx and Engels's historical materialism is the belief in human perfectibility. Chinese interpretations of Marxism highlight this human changeability. However, this capacity for change is reoriented by educators and propagandists for social ends. Therefore, Munro argues that the word "malleability" is more appropriate than changeability.

Human malleability refers to the Pavlovian doctrine of the plasticity of the central nervous system, meaning that, under the right conditions, a person can be taught anything. This idea minimizes the innate differences in human intellect and emphasizes the plasticity. Individual interests and abilities are not important, as both are malleable.[4] Munro (1971: 618–629) explains that this view provided a scientific justification for educational policies that emphasize uniformity in instructional method and materials. As a consequence, the active shaping of people's values, beliefs, desires, and intentions through political and ideological education takes on central importance (Munro 1971: 630–634). This

4 In behavioral psychology, this idea is also called classical conditioning. For a deeper elaboration on Pavlov's research, see, e.g., Pavlov, Ivan P. 1927. "Conditioned Reflexes: An Investigation of The Physiological Activity of The Cerebral Cortex." http://psychclassics.yorku.ca/Pavlov/.

conviction justifies social engineering for improving "human quality" in the service of modernization. Human "perfectibility" is an important component of economic growth and national progress: "It is not an end in itself, but is geared towards the very aim of Chinese reform …: making the country rich and strong" (Bakken 2000: 39).

Although technological determinism is not considered part of orthodox Marxism (MacKenzie 1984: 473–480), during the early reform period (1978–2001), Chinese elites became inspired by the belief that national progress and social change depend on scientific and technological development (Bakken 2000: 32). Moreover, according to Hua (1995), Chinese-style scientism emphasizes technological determinism, an important component of Chinese scientism, which maintains that the development of history follows objective laws, which are determined by the development of productive forces, and that socialist development has to undergo several stages. It holds that modernization is a panacea for ensuring the perpetuation of socialism: when productive forces are more developed, society will be more advanced. These two positions draw heavily on orthodox Marxist historical materialism This line of thinking, especially the need for gradual development in stages and the tolerance of capitalist aspects in the earlier stages, was adopted by Chinese intellectuals in the reform period, such as Hu Qiaomu, and Su Shaozhi, and became part of the official theory that guided reform (Hua 1995: 49–75).

These two concepts are combined in Chinese scientism. Bakken (2000: 31–57) recounts that, during the reform period, political and intellectual elites became convinced that scientific and technological development are the primary drivers of national progress and that all social problems can be solved through the application of science and technology. During this period, Chinese scientism also became preoccupied with culture and morality. Human morality became seen as reducible to a set of scientifically objective truths, and human society could be changed by adhering to them. In other words, citizens can be transformed by emulating scientific or "exemplary" models.

According to Hua (1995: 7), scientism became dominant during the reform period because it follows Chinese tradition monist thinking, and the claim to objectivity is compatible with Chinese political culture. The ideal of Chinese scientism is encapsulated in the Chinese term "scientific objectivity" [*kexue keguan* 科学客观]. A policy decision, then, is scientific when it is based on a precise measurement of factual reality—this is what is meant by objectivity (Bakken 2000: 203–206). Therefore, given their proximity to social processes, this "objective" information about reality comes from the masses, which brings us to the next part of the argument.

Inclusion, Monitoring, and Social Control

The belief in both human malleability and the existence of a "scientific objectivity" opens the way for the construction of a system of total surveillance, with the ultimate goal of total management and control. Social control requires measurement and evaluation: "evaluation is the main way in which [the] exemplary society links people's behavior closer to the exemplary norm" (Bakken 2000: 195). Evaluation starts with monitoring behavior and registering it, then comparing it to the exemplary standards, and ultimately steering it toward the norm (Bakken 2000: 204).

This leads to the Leninist part of Chinese Marxism-Leninism. The next building blocks combine the work of Munro (1971) on Chinese Marxism and the work of Bakken (2000) and Hua (1995) on Chinese scientism with the theoretical frameworks of Chinese governance developed by Hoffman (2017) and Gueorguiev (2021).

At its core, Leninism was a theory of inclusive authoritarianism, that is, the people govern the country through a vanguard party that embodies the interests of the people and leads them in the achievement of shared political and economic goals (Gueorguiev 2021: 53). Therefore, the CCP views the people as the "legitimate foundation of political power" (Ding 2020: 194). To correctly represent the people and make democratic decisions, the CCP must follow the mass line: they collect disorganized ideas from the masses, organize and concentrate them, and then propagate them back to the masses until they embrace these (now properly structured) ideas as their own (Tsang 2009: 867; Ding 2020: 202).

However, given the party's vanguard character, "following the mass line" does not imply widespread public participation in governance. Another core characteristic of Leninism is the centrality of control. Although the public is now included in governance through a variety of channels—such as people's congresses (Truex 2017), local village elections (Levy 2007; Li 2007), deliberative consultation (He 2018), online consultation (Balla and Liao 2013; Balla and Xie 2021), and government portals (Min and Xu 2009)—this all happens within a framework tightly circumscribed by the CCP (Meng et al. 2017). Through this participation, the CCP creates a bottom-up feedback loop that enables it to control a decentralized and fragmented government. In other words, public participation enhances party control. This is what Gueorguiev (2021: 55) aptly calls "Leninist methods of controlled inclusion." Under Jiang Zemin and Hu Jintao, the central leadership endorsed consultation as a mode of participation, that is, it called on local governments to engage the public in decision making through consultation, public opinion polls, and so forth. The CCP also engages the public in oversight of local governance institutions by

accepting complaints, petitions, and tips. According to the CCP, these practices of controlled inclusion make their governance scientific and democratic (Gueorguiev 2021: 74–88).

Automation and Governance Modernization

Although incomplete, this outline of Chinese Marxism-Leninism suffices to demonstrate the PRC's ideological affinity with the virtues of automation and indicator culture. Simply, the CCP's organizational ideology holds that social reality is reducible to a set of objective truths that simply exist and have yet to be extracted. Furthermore, it underscores the importance of a vanguard party in identifying these objective truths and transforming them into actionable decisions so as to lead the masses onto a path for national progress. The vanguard party then uses this input-driven decision-making process to control the masses and simultaneously adapt its capacity to maintain this control, with the ultimate goal of sustaining itself as a benevolent and efficient ruler.

Therefore, the CCP blends public participation with top-down control, which enables it to constantly shape, manage, and respond to society. Another way to understand this approach to governance is through using the theoretical framework by Hoffman (2017: 47). The above-mentioned processes and methods are best understood as a complex systems management process: a feedback loop of shaping, managing, and responding, ultimately aimed at ensuring stability and legitimacy. Hoffman argues that this feedback process best resembles the autonomic nervous system (ANS) found in biology. The ANS is a component of the human nervous system that autonomically regulates important survival processes. By analogy, the party leadership is the "core" of China's ANS, and the party masses are the "backbone" that relay information from "the body" (nonparty masses) to the party leadership. The party leadership then adjusts its survival processes to respond to the changes effectively (Hoffman 2017: 48–49). It is important to note here that this is only a model for the CCP's governance processes. To party theorists, it constitutes a "scientific" way of thinking. Hoffman (2017: 12) argues that this model is "directly behind the technologies used to automate the social management process."

Because of the increased legibility of society and access to millions of data points, it is impossible for the Chinese party-state to manually monitor, shape, and respond to everything that is happening. Harvesting and processing this information to exert political and socioeconomic control is not easy and requires a high degree of party embeddedness in society. Establishing controlled feedback loops requires party organs to be constantly in touch with the masses—that is, informants, constituents, and representatives—who inform oversight, policy-making, and administrative agencies. Technology and

automation, then, facilitate setting up different autonomic (i.e., self-managing systems) through the automation of lower, routine decision making and implementation. They are part of the larger system, which is directed by the system controller (the party). The ideal is a system that is capable of preventing crises and addressing them when they occur (Hoffman 2017: 57–61). To return to the words of Gueorguiev (2021: 220–43): the controlled feedback loop of oversight—planning—implementation is supposed to be conducted by these autonomous systems. Automated, big data–driven governance is the next iteration of this Leninist mode of controlled inclusion.

In sum, the organizational and ideological principles of Marxism-Leninism explain why technology and automation are so enthusiastically embraced by the Chinese party-state: they provide a way to achieve the dream of rational Marxist governance. They optimize existing Leninist structures and practices for input-driven decision making and controlled inclusion. In other words, governance modernization does not imply a departure from the party-state's basic governance and organizational structures. Rather, technology and automation enhance existing procedures for control and monitoring. Therefore, according to this theoretical discussion, the digitization and automation of governance practices, such as the social credit system or smart courts, are more about putting old wine in new bottles or "retrofitting" Leninism (Gueorguiev 2021: 53–57).

Data and Methods

This article reviews Chinese scholarship to examine how smart governance and Marxist-Leninist principles interact. The review is a metasynthesis, using a mixture of practices from narrative and systematic literature reviews. A narrative review aims to enrich discourse by generating understanding, rather than by accumulating knowledge, which may reduce the comprehensiveness of the review (Geertz 1973). To compensate for this, the article also adopts systemic review practices, such as specifying literature search procedures and being explicit about inclusion and exclusion criteria (Hagen-Zanker and Mallett 2013).

As noted in the introduction, Chinese scholarship functions as a channel for political participation. Engaging with Chinese academic literature helps to clarify the official discourse used in policy-making and governance reform. Official terminology and political concepts (e.g., smart governance, the focus of this article) "function as grounds for political contention over which arguments about fundamental values and policy directions can be played out"

(Snape 2019: 386).[5] This means that seemingly objective interpretations of political concepts are in fact an argument for a scholar's preferred policy or interpretation, using political discourse to give their ideas authority, legitimacy, and a protective barrier (Snape 2019: 391; Kato 2021). Ultimately, this enables us to better understand how policy is developed and how scholars try to reframe official framing as a means of political participation.

To this end, I reviewed periodical articles from 2014 to 2021 downloaded from the CNKI database. I searched the database with the keywords "smart governance" [*zhihui zhili* 智慧治理]. The document type was set to "periodicals" [*qikan* 期刊], which include academic and policy journals as well as party and government publications. The keyword search yielded a little more than 300 articles. Because the distribution of published articles over the period was uneven (the majority of articles were published between 2019 and 2021), the articles were first categorized by year and then sorted by the number of downloads to reflect how broadly the articles have circulated (Kato 2021: 142). Then, all articles with more than 250 downloads were downloaded for screening. After a manual screening of the abstracts and titles, a total of 120 articles remained for analysis.[6]

In the first step, I read a random selection of articles and then inductively coded them. In the second step, after triangulating the emerging themes with the theoretical discussion, I selected a series of themes to further guide my analysis. The analysis focuses on Chinese scholars' discussions about how smart governance is supposed to change the nature of social governance in China, about what is being said about democratization and public participation with respect to smart governance, and issues such as technological alienation and human agency in connection to smart governance. Not all the themes in the literature are discussed here. I chose particular themes because they relate to the Marxist-Leninist principles discussed in the theoretical section and were dominant in the literature. I then used these themes to analyze the entire corpus systematically in NVivo, which is qualitative data analysis software. In this process, I switched between extensive reading and coding the articles, creating an iterative process. The coding sheet is shown in Appendix 2.

5 For an in-depth discussion of the role of policy concepts in the shaping of Chinese politics, see Schoenhals, Michael. 1992. *Doing Things with Words in Chinese Politics: Five Studies*. Berkeley: Institute of East Asian Studies.

6 While I cite the literature extensively in the analysis below, to conserve space, not all articles that are part of the analysis are cited. A database of the literature collected and analyzed is available in Appendix 1. Appendixes are available directly from the author upon request.

Smartness as a Transformative Vehicle: Upgrading Service-Oriented Governance and Changing the Nature of Social Governance

Smart governance literature in the PRC can be divided into two distinct areas: service-oriented governance (public service, crisis management, etc.) and social governance (public participation, surveillance and control, etc.). From the perspective of ANS, the former relates to outputs, and the latter relates to inputs. For practical reasons, the next two subsections divide the analysis into these areas. Nonetheless, to remain consistent with the ANS model, they need to be seen as inherently connected to and constantly in interaction with each other.

First, this section reviews how the literature defines smart governance and how it will improve governance by the political-legal system (see, e.g., Zhang and Zhou 2016; Huang and Chen 2019). In one of the earliest definitions, Chen et al. (2014: 99) describes smart governance as:

> an innovative strategy oriented by technology and with governance as the vehicle, its main features are (1) relying on internet technology to promote the optimization and upgrades of social governance; (2) advancing the promotion of government governance capabilities on the basis of "intelligentization" and datafication; (3) connecting virtual and real society through the combination of network technology and governance innovation, thereby forming a new social governance space.

Yan and Wang (2019: 28) argue that "smart governance" as a concept is subordinate to the modernization of a national system of governance and governance capacity. Therefore, it must be analyzed in this context. It is not only a technical concept but also a concept that embodies the norms and values of governance. It comprises a holistic approach to governance and can unify different morality and value systems (see also Song 2018).

The idea that "smartness" will inevitably improve governance dominates the literature (see, e.g., Fu 2018; Fan and Guan 2019). Yin (2018: 80) claims that it will raise the scientific level of decision making as well as expand the input ("democratic participation") and output ("supply capacity of public services"). Wang (2014: 54) calls smart governance "a dynamic interactive system that integrates technology, government functions, and public participation." "Smartness" allows the government to keep its finger on the pulse, make pro-active decisions, and adapt to changing circumstances. In this, it is the "driving force" behind the transformation of the way in which it governs society by improving interactions and communication between the government

and society (Chen et al. 2014: 99). It helps to integrate government functions as well as monitor them because it enhances coordination between different political-legal departments (Wang 2014: 54; Deng 2019).

Lastly, smart governance is considered part of building a rule of law country and is said to reinforce the conditions for a good rule of law environment (Guo 2017a: 178; Fu 2018: 61). It is considered consistent with the political platform of "ruling the country in accordance with the law" [*yifa zhiguo* 依法治国]. Peng (2020: 30) goes so far as to say that rule of law can be achieved through smart governance because it improves the political-legal system's scientific and democratic decision making. Improvement in governance thus refers to a more integrated government that, thanks to modern technology, can better serve and monitor society.

For scholars such as Tan (2019: 52–53) and Chen and Pan (2021), big data analytics will improve decision making by making it more "objective, scientific, and forward looking." This will lead to a more holistic approach to governance, stimulating integration, collaboration, and information sharing across government entities. Holistic governance and data-driven decision making will make responses to "governance issues," such as tackling environmental pollution, more dynamic and accurate (Guo 2017b: 49; Yao 2020: 67). This is also contrasted to previous modes of governance: decisions made by people based on subjective assumptions and personal experience often lead to "arbitrary and impulsive" decisions (Dong 2016: 35; Ge 2019). In short, the literature depicts human decision making as faulty and biased. In contrast, big data analytics and algorithms are accurate and objective, improving "scientific decision-making" (Shen and Zhu 2019: 49). Hence, improvement comes from the elimination of human error.

Going even further, Wang (2018) envisions the operation of a smart governance premised on a platform-based "smart governance center," which functions as the brain of the entire governance system. The basic logic behind it is that a smart governance center can automatically collect and process information, which is then used to make decisions and take actions related to social management, macro-control, and public services. It thus creates a kind of closed feedback loop with input from "social governance targets" (i.e., the people, businesses, cyberspace), which is then processed and analyzed for transformation into "governance directives." The human element seems to have been utterly removed from this smart decision-making process.

This article argues that these interpretations of improvement follow from the underlying ideological principles discussed in the previous section: the scientific objectivity of social governance depends on the input of correct information and data retrieved from society. Big data analytics and algorithms are

primed to improve this input and, by extension, social governance itself. It also enables the government to respond and adapt in real time, that is, improving the output of social governance. Therefore, technology and governance are unified in smart governance (Hu et al. 2021: 16). Moreover, "smartness" increases "rule of law" in the sense that it improves scientific and democratic decision making and, in turn, justifies the existence of surveillance and control technologies.

In sum, the authors conceptualize social governance in a way that mirrors the earlier theoretical discussion drawing on Hoffman (2017: 16–18) with respect to a holistic approach to social governance, that is, observing and studying specific social phenomena or issues not in isolation but as part of a larger system that is constantly interacting with other fields. Smart technologies offer this possibility.

Improving Outputs: Holistic versus Fragmented Governance

According to the literature, smartness can improve social governance in the sense that it facilitates the transformation from fragmented to holistic social governance. Despite many attempts at centralization over the past few decades, China's governance has traditionally been fragmented (see, e.g., Lieberthal 1992; Mertha 2005; Bulman and Jaros 2021). However, smartness is said to improve connectivity, integration, and coordination among government institutions, business, government services, and communication channels, creating a seamless, integrated, and service-driven holistic governance model (Chen 2021). According to Xu and Wu (2018: 41–42), the use and cross-departmental sharing of big data will lead to integration and coordination between them, allowing government departments to make holistic and, therefore, scientific decisions. To these scholars, technology's transformative power come from its ability to improve data collection and analytics that inform decision making so as to provide better public services and govern more pro-actively (Yin 2018: 80). Zhang and Zhang (2021: 158) define holistic governance as follows:

> [It] refers to being oriented toward meeting the needs of the public and using information technology to strengthen communication and cooperation within and between governmental and nongovernmental organizations and to coordinate and integrate governance hierarchies and functions and the public and private sectors. [It is] a governance method to achieve seamless services under common governance goals. The main content of the holistic governance theory can be divided into three points: governance based on public needs, emphasis on the integration

> and coordination of governance structure, and information technology and services as the main means of governance.

Therefore, smartness is a way to transform traditionally fragmented governance into more holistic governance through the use of information technology, big data collection, and sharing and, thus, integrating and connecting otherwise fragmented areas of China's political-legal system. The discussion on the effect of smartness by Zhang and Zhang (2021: 158–160) shows that the approach to governance is consistent with the theoretical discussion above: They divide governance in three key channels for meeting public needs: collection, integration and coordination, and implementation. Smartness facilitates the collection, integration, and analysis of information inputs and the coordination and determination of the kind of outputs that are required. Most important, "the governance process is continuously adjusted based on information feedback until problems are solved" (Zhang and Zhang 2021: 158). Ultimately, this improves outputs because it simultaneously allows gains in short- (quick adjustments to sudden crises) and long-term (monitoring and analyzing more complex issues) governance, as well as simplifying government services that are highly repetitive and involve multiple departments (e.g., through online "one-stop" portals).

Nonetheless, some scholars have expressed skepticism about the holistic effect of smart governance. Although the scholars mentioned earlier frame smartness as a kind of panacea for all governance issues, others argue that smartness alone is not enough. Lan (2019: 142) says smartness cannot overcome the inherent problems of fragmentation, poor collaboration, and information silos. For smart governance to be effective, it is first necessary to break through organizational barriers between department levels to create greater information exchange. Che (2017) concurs that smartness cannot miraculously reverse fragmentation: given that smart governance relies on big data, a key requirement is to strengthen information management by expanding cybersecurity regulations and stimulating information exchange between government departments.

In fact, the digitization and automation of government might actually lead to further fragmentation, as different local governments are implementing their own digital systems and standards. Zhang (2015: 136) argues that because of the division of functions and interests, government departments have different data standards and disclosure conditions, making it impossible to compare and handle data across different platforms and government levels. Shen and Zhu (2019: 52) claim that, despite the government's advanced level of informatization, fragmentation persists both horizontally and vertically:

government institutions only use data that they generate themselves and do not share it with others of equal administrative rank. Moreover, Shen and Zhu warn against "techno-optimism": the presence of technology cannot be the only evaluation criterion. For them, technology can only be a tool for data collection, process optimization, and in-depth analysis. By itself, technology will not improve governance processes (Shen and Zhu 2019: 51).

It is well documented that relations between hierarchical levels of government are complex (e.g., see Mertha 2005; Choong 2016; Mattingly 2019). Lower-level governments might refuse to share their data with government at a higher level. In a perverse sense, informatization has the potential to perpetuate fragmentation, with different departments jealously guarding their own data. It raises questions about many of the claims made by the scholars cited above. However, as explained earlier, this might not be the point of Chinese scholarship. One interpretation is that the scholarship is in fact advocating for a resolution of government fragmentation and is using the policy slogan of smart governance as a vehicle for doing so.

Therefore, its actual point might be that "modernization of the national governance system" does not necessarily consist only of technological innovation. A prerequisite for smartness is addressing fragmentation and "information silos" among government institutions (Li and Chen 2018: 205). Zhang et al. (2017) suggest the construction of more centralized data-sharing platforms that can be used among different organizations and government departments. Li and Chen (2018: 207) similarly make the case for building a unified big data system to standardize data collection, processing, and sharing as well as a national data-sharing platform for government services at all levels, in order to promote cross-regional and cross-departmental data and information sharing across the political-legal system.

Zhang and Zhou (2016: 26–27) discuss fragmentation and smart governance in more detail. They argue that government institutions have insufficient incentives for sharing data and cooperating more in the creation of unified smart platforms. This hinders the establishment of truly holistic and comprehensive smart governance systems. Thus the real challenge is overcoming deep-rooted organizational and political differences within the government. No true smart governance can be created if this is not addressed. Hence, Zhang and Zhou (2016: 28) suggest that local governments be encouraged to integrate informatization platforms, standardize smart governance technologies and services, promote platform and system compatibility and data resource sharing, and eliminate communication barriers.

It is clear that critical scholars in the literature reviewed believe improvement and modernization are not necessarily a function of how much technology is

used. They suggest that fragmentation is not only a technical issue but also a political one. Critiques in the discussion about overcoming fragmentation are framed under the policy slogan "modernization of governance" but try to redirect the focus from one that is purely technological, arguing that improving governance also requires other—that is, institutional and structural—reforms. In this sense, the ideological foundations of the critique of automation are not necessarily different from those of their approval: according to these scholars, automation also has the potential to "numb" or "disrupt" the nerves in the ANS. Therefore, critique and approval are both articulated in terms of the Marxist-Leninist understanding of governance and technology.

Improving Inputs: Smartness, Democratization, and Public Participation

The idea that smartness will improve the consultative and participatory elements of governance in China is a common theme in the literature. Smartness opens up new pathways for "democratization," that is, broadening the scope and increasing the quality of public participation and, therefore, raising the quality of decision making (Huang and Chen 2019: 64–65).

In the analysis, we see how this understanding shapes the discussion. For example, Fu (2018: 60–61) claims that digital platforms, as part of smart governance, provide new channels for public participation, which will foster political democratization as well as ensure better democratic supervision, restriction, and regulation of government actions. In this sense, smart governance is meant not only to provide better public services (outputs) but also to improve the monitoring and collection of information (inputs). These improvements will make governments more attuned to "the masses." The increased quantity and quality of information from people will increase the democratic, and therefore scientific, nature of decision making (Zeng and Ma 2018: 19). Although Zhang and Zhang (2021) discuss this more from an output perspective, they also recognize that better outputs depend on better inputs. In particular, their framing of how the governance responses constantly change and adapt to inputs resonates with the ANS model by Hoffman (2017).

Interestingly, the literature does not discuss smart governance or "democratization" in connection with the liberal understanding of democracy, that is, free elections, separation of powers, and granting of political and civil rights. This might indicate the limits of the open debate in academic scholarship. The idea of "democratization" is primarily interpreted in Marxist-Leninist terms in the sense that smart governance enhances the "public oversight" role played by the people in the Leninist state structure. Public participation is legitimate only to the extent that it facilitates the collection and monitoring of

information, which are necessary for making the right decisions and improving social governance and control (Gueorguiev 2021: 30–37). Going beyond this Leninist interpretation of controlled participation might exceed what is considered acceptable in academic debates.

Others argue that governments should actively stimulate this participation, as the public is an important source of big data (Zhang 2014: 103). Under the leadership of the government, big data should be used to draw on both civil society and industry for more and better inputs into the decision-making process (Cui 2016; Guo 2017b). By stimulating interaction between the government, on the one hand, and the people, social organizations, and industry actors, on the other, some authors argue that big data and smart governance will lead to a new form of "multicollaborative social governance" [*duoyuan xietong zhili* 多元协同治理] (Dong 2016; Lin 2018).

Scholars also discuss smartness in connection with the political concept of a "social governance system based on coconstruction, cogovernance, and cosharing" [*gongjian gongzhi gongxian de shehui zhili zhidu* 共建共治共享的社会治理制度]. This policy slogan was introduced by Xi Jinping in his report at the nineteenth National Party Congress (Snape 2019) along with the concept of a "smart society" [*zhihui shehui* 智慧社会]. Following Snape's argument, this discussion is consistent with how scholars use official discourse as a channel for political participation. They use these concepts to peddle their own arguments and interpretations of what social governance should be and what the political-legal system should look like.

For example, Ma (2019: 23) argues that "coconstruction" should be framed in tandem with a people-centered [*yi ren wei ben* 以人为本] approach. The point of smart governance should be to minimize the human factor but to maintain the status and dignity of the people. According to him, this approach is the only way to make smart governance a success and is central to being "people centered" and having "coconstruction, cogovernance, and cosharing." Chen et al. (2021: 3–4) state that the achievement of smart governance is inseparable from participation by and the support of all actors: government, industry, social organizations, and citizens. In this sense, smart governance does not stand on its own as a new mode of governance but, rather, is a pathway toward social governance based on coconstruction (see also Yan and Wang 2019: 30).

The slogans "people centeredness" and "coconstruction" are both used to contrast smart governance from traditional governance, which is described as top-down, heavily dominated by the state, and very rigid overall (Wang 2014; Tan 2019). However, smart governance is people centered, meaning that it considers citizens' rights and interests, and "citizens should be encouraged to actively participate in the formulation of various visions and construction

plans, so that the selection and function of projects can truly meet the needs of citizens and society" (Shen and Zhu 2019: 53). Similarly, according to Shen (2019: 102), smart governance is a form of governing that prioritizes respect for the people and truly reflects the value of people, because they are "the most essential and active force in social development."

However, although smart governance revolves around providing the people with better and more accurate public services and, at the same time, creates more and better ways for society to give its input, it does not seem to entail specific mechanisms or systems that allow citizens to genuinely influence decision making in the political-legal system. Rather, "people centeredness" seems to involve deeper embeddedness of the state in society, enabling it to attain a more accurate grasp of the public. This participation or cogovernance can take place only under the leadership of the party. As Fan and Guan (2019: 86) state:

> It is necessary to adhere to the "people-centered" value orientation under the leadership of the Chinese Communist Party, to ensure that the people can widely participate in democratic decision making, democratic management, and democratic supervision in the construction of a "smart society" through various channels and forms in accordance with the law, so as to ensure that the construction of a "smart society" in China advances in the right direction—that of socialism with Chinese characteristics.

Chen et al. (2014: 4) argue: "Therefore, smart governance must always adhere to the leadership of the party and give full play to the party's core leadership role in overseeing the overall situation and coordinating all parties." This makes it abundantly clear that any discussion on the democratizing effect of smartness should be understood in Marxist-Leninist terms; the party remains at the center of the nervous system as the interlocutor between the state and society, and the people remain passive. Smartness is supposed to open new channels of public participation, yet this participation is heavily circumscribed and controlled. Very few authors make a connection between smartness and self-governance [*zizhu zhili* 自主治理] (Chen et al. 2014) or with liberal interpretations of public participation.[7] As stated earlier, one reason might be that this is merely an indication of the limits of Chinese academic debate. Another interpretation is that "smart governance" is being peddled as a way to improve "service-oriented" or "people-centered" governance, which therefore justifies enhancing technologies of surveillance and thus social governance. Therefore,

7 To give an idea, only 4 out of 120 (3.3 percent) reviewed articles mention self-governance [*zizhu zhili* 自主治理].

smart governance seems to entail the creation of new and more efficient feedback loops in the political-legal system that expand social control. It does not actually treat citizens or other social actors as active decision makers who participate in social governance. They participate only in the sense that they provide the information required to operationalize smart governance. This is in line with a Leninist understanding of controlled inclusion as conducive to better governance while also complementary to control. Technology multiplies these synergies (Gueorguiev 2021: 39).

Issues in and Criticism of Smart Governance

The scholarship is filled with concerns and criticisms, often discussing and analyzing smart governance from both sides. It is therefore difficult to clearly identify different streams in the scholarship. Nonetheless, this is where the scholarship is the most direct in its attempt to participate in policy-making while remaining within the space demarcated for acceptable discussion. Aside from the issue of information silos covered in the previous section, a few other relevant discussions emerged. The biggest themes as part of the critique of smart governance are fear of technological alienation and infringement of personal privacy. Interestingly, this is also where issues of legality and law come into play more explicitly.

Technological Rationality and Dehumanization

One of the biggest criticisms in the literature is that smart governance will lead to dehumanization or the loss of human subjectivity [*ren de zhutixing* 人的主体性]. Guo (2018: 19) argues that the excessive focus on quantification and metrics, often referred to in the literature as technical rationality [*jishu lixing* 技术理性], risks conflating the ends with the means of smart governance. In doing so, Guo repeats a common critique of the international literature that quantified data not only are shaped by values, choices, and preferences of people (Merry 2016; Lynch 2019) but, in turn, also shape people and institutions as well (Espeland and Sauder 2007; Mayer-Schönberger and Cukier 2013). This has become especially visible in China's political-legal institutions (Smith 2020; Ng and Chan 2021).

Therefore, Guo (2018: 19–21) criticizes the centrality of technology in discussion of smart governance. This kind of "big data thinking" overshadows traditional causal thinking, which prefers to prioritize finding correlations as a basis for decision making, regardless of their relevance. This pretense of making value-neutral decisions will lead to a loss of ethical values in decision making. In

this way, he positions technical rationality as linearly opposed to what he calls "value rationality," going so far as to state that smart governance makes public life seem "permeated with science and democracy," but, in fact, people are oppressed by technical rationality.

Others share this sentiment: Ma (2019: 93) and Hu et al. (2021: 19–20) argue that technical rationality poses the significant social risk of reducing humans to data points. Additionally, they seem indirectly to criticize claims about the "people centeredness" of smart governance. Given the increasing role of algorithms and big data in both governance and society, their impact and influence on public decision making will be significantly larger than actual public input. How, then, can smart governance be people centered if decision making is automated and based on big data? Ma (2019: 95–96) concludes that after algorithms dominate governance decision making, it will diminish human agency. Chen (2021: 37) concurs that, rather than being people centered, smart governance is dominated by data, which actually weakens the humanistic aspect of governance. Tan and Han (2021: 143) also argue that an excessive focus on technology and big data would not empower the political-legal system but, rather, simplify issues and public opinion, reducing the effectiveness of governance responses. In turn, this will also negatively affect public participation.

For these authors, doing this would undermine the core function of the party: as a vanguard party, the CCP must be in tune with the masses so as to make the correct policy decisions. Technology enhances both public participation (input) and social control (output). In the framework by Gueorguiev (2021: 19–40), inclusion and control need to be balanced, as inclusion facilitates control, but too much control hinders inclusion. An excessive focus on technology for the sake of technology or control destabilizes the dynamic equilibrium of governance. The way to prevent this undermining effect is to distinguish correctly between the goal of improving governance and the means used to achieve that goal—that is, big data. The goal of smart governance should be to provide better public goods and better management and to uphold moral responsibility. The means, that is, technology, should not undermine these goals.

Personal Privacy, Inequality, and Other Ethical Considerations

Another main concern expressed in the literature is that smart governance infringes on personal privacy. This is an area in which the law features prominently in the discussion of smart governance. Many authors stress the need to have a better system for regulating data and privacy protection and lament the lack of policies for promoting disclosure of government and public data (see, e.g., Yang 2015: 165; Li and Chen 2021: 74). Shen and Zhu (2019: 51) also complain

that smart governance has reduced regulatory constraints on the use of public data by government. Cui (2016: 25) and Yin (2018: 81) put it simply: "the rule of law is the premise and foundation of smart governance." Therefore, the collection and application of personal information for smart technologies should first have laws that must be followed (Lin 2018: 49).

Some of these issues may have already been addressed in new Chinese legislation and regulation regarding the protection of personal information and data security (Creemers 2021). Yet, despite these new legislative protections, Fang and Wang (2021: 182–184) are concerned that they are insufficient for addressing key issues, such as the potentially excessive or even illegal collection of personal information, incorrect classification and correlation between data, and the abuse of personal information by third parties. At the time, they claimed that the legislation did not sufficiently emphasize individual control over personal information and did not properly regulate the government's use of personal information.

Guo (2018: 20) also uses legality as a way to criticize smart governance. He argues that it increases the risk of legal infringement of people's privacy rights. He does not criticize the collection of personal data itself per se but points out that it will undermine people's legal right to self-determination and control over their personal information and that data leaks undermine their right to privacy. In this sense, he does not necessarily criticize the government's unrestricted access to people's data but, rather, the fact that private information can become publicly available because of bad practice or used excessively to infringe on people's freedom outside the scope of the law.

Another issue that is also tied to the people centeredness of smart governance is the digital divide that it might cause. For example, Zhang and Zhou (2016: 26) ask: who actually benefits the most from smart governance? To them, smart governance might not necessarily be the panacea for achieving common prosperity that it is portrayed as. Instead, it might cause new social crises, polarization, and general social alienation from the government. They argue that smart governance and big data technology mainly serve high-income groups and will cause a digital divide between the urban elite and the elderly and less fortunate. According to Guo (2018: 20–21), this digital divide will create inequality in "data discourse power": some social groups will become data rich, and others data poor. This means that certain social groups will be more represented in big data databases, and therefore decision making based on this data ultimately will not be comprehensive. Moreover, these decisions are likely to have a positive effect on those who already have many advantages in society and a negative impact on the disadvantaged. Therefore, smartness has a certain exclusionary effect (Yang 2021: 65). This argument could be a direct rebuttal to

claims that smart governance will make decision making more democratic and scientific. Whereas classification and compartmentalization are inherent parts of Leninist modes of governance because it makes inclusion less risky and its input more visible (Gueorguiev 2021: 34), excessive divisions created by smartness again disrupt the equilibrium necessary for good governance.

In sum, the Chinese literature mainly concerns the dehumanizing effect of increased digitization and automation in China's political-legal system. The fear that the excessive focus on big data and the use of algorithms removes human agency from the decision-making processes is prevalent. Similarly, many authors question whether smart governance will truly be as democratic and scientific as it is claimed to be if it includes infringement on individual privacy and exacerbates inequality among social groups, and big data is of questionable quality, incomplete, and isolated. Automation and digitization cater only to the idea of scientific objectivity, yet their achievement of it remains questionable.

Although these critiques might hint at more liberal interpretations of the role of the people in social governance, the concern about fragmentation, dehumanization, and digital divide do not contradict the ideological foundations of governance described above. To reiterate: a crucial aspect of social governance in China's Marxism-Leninism is maintaining the connection between the party and the nonparty masses (Hoffman 2017: 47–48). These scholars warn about an overemphasis on technology and big data to maintain this connection, which risks losing sight of what truly matters: staying in tune with the masses. Technology can also disconnect the core from the masses. Rather than embedding the party more deeply in society, smart governance creates an extra layer of separation through datafication and automation. The party might risk falling out of tune with the masses. In other words, from the perspective of ANS, technologies might numb the nervous system that maintains the connection between the core and the rest of the body. Therefore, the concern over the increased use of technology can also be seen as departing from a similar interpretation of governance.

In this regard, the Chinese academic literature echoes comparable concerns in the international scholarship on increased automation and digitization in governance and public life. However, this does not mean that these concerns necessarily have a similar ideological foundation. Moreover, these concerns do not necessarily affect the use of algorithmic systems and smart technologies by the Chinese political-legal system, as they do in other countries. Despite these concerns, the underlying conceptualization of governance facilitates the acceptance of automation.

Conclusion: Fusing Mr. Science and Mr. Democracy to Create a Smart State[8]

The Chinese party-state is on a continuous quest to "innovate" social governance, and the advent of smart technologies have only further fueled those ambitions. Social governance innovation is intimately connected to the modernization of the state. Since the early twentieth century, science and democracy have both been considered important drivers of this modernization process. According to the literature reviewed, smart governance promotes both and thus is a crucial element in modernization.

The argument that smartness will inevitably improve social governance in China is omnipresent in the Chinese literature. The sense is that it will fundamentally transform the nature of governance via algorithmic decision making based on big data analytics. This article argues that the reason for this conviction is in the way that Chinese Marxist-Leninist ideology conceptualizes governing. Accordingly, the way in which social governance in China is conceived resembles the operation of an ANS that requires continuous feedback control and adaption to changing circumstances (Hoffman 2017). This requires a high degree of regime embeddedness. Smart governance, then, is a mode in which the ANS is assisted by smart technologies to improve its outputs (i.e., government services) and can process and analyze real-time and broad-reaching input from society (i.e., better surveillance and control). The wide spectrum of what is called "smart governance" includes both service-oriented governance and social governance as part of China's political-legal system, because the added value of smartness to the former justifies the existence of the latter. In this sense, the Leninist understanding of governance is compatible with smart technology.

Our empirical analysis shows that the Chinese academic literature shares this vision of governance. The way in which it discusses the transformative power of smartness reflects a similar understanding of how governance operates: the literature primarily discusses how smartness enhances interaction between the state and society and improves information input. This makes decision making more "scientific and objective," meaning that decisions are based on reality expressed through big data, rather than on subjective human decision makers. Big data analytics also enables better and more accurate

8 The use of gendered terminology in this title is a reference to the New Culture movement, which criticized classical Chinese ideas and promoted a new Chinese culture based upon Western ideals such as democracy and science. The leaders of these movements gave them the nicknames Mr. Democracy and Mr. Science. The New Culture movement is a key pivotal moment in China's "struggle with modernity." See Mitter (2005).

output, improving public services and, in turn, legitimizing the Chinese political-legal system and the mode of input.

Marxist-Leninist principles also explain why the notion that smartness will improve democratization in China is taken for granted in the Chinese literature. Democracy in Marxism-Leninism refers to the collection and processing of bottom-up inputs. Public participation is an essential part of Chinese social governance (Gueorguiev 2021). According to the Chinese literature, smartness further facilitates and increases the channels for public participation. Smart governance, then, is both scientific and democratic because it caters to two fundamental principles of Marxism-Leninism: regime embeddedness and social control.

This does not mean the absence of concerns about smart governance. The literature discusses the persistence of data silos, technological alienation, infringement on personal privacy, and ethical issues—as obstacles to the success of smart governance. Only here does the law explicitly feature in the debate: scholars call for a better regulatory framework for smart governance, especially when it comes to collecting personal information and processing data. However, the legality and legitimacy of smart governance is not put into question. On the contrary, some scholars claim it is in line with "ruling the country in accordance with the law." This reinforces the instrumentalist understanding of law in the wider governance project of the Chinese party-state. Yet it also hints that the law has gained importance: some scholars are careful to frame smart governance as part of improving or adhering to rule of law and a crucial criticism of smart governance comes from a legal perspective—that is, if the political-legal system uses technology to intensify the monitoring, collecting, and processing of personal information to create big data–driven decision making, it must do so in accordance with the law. Simply put: smart governance requires a legal framework. The Chinese state recognizes this and is considering new ways to unlock the social value of big data (see, e.g., the fourteenth Five-Year Plan for National Informatization), regulating the use and development of algorithms (see, e.g., the Provisions for Algorithmic Recommendation Management), and drafting new rules for the handling of personal information (Creemers 2021).

Analysis of Chinese academic literature is an essential part of understanding Chinese politics. These papers are among the few safe forms of political participation for Chinese intellectuals, and they reveal how policy ideas are understood, shaped, and contested. Given the increasing significance of big data, algorithms, and AI in the modernization of the Chinese state, it is crucial for us to gain a better understanding of the ideological foundations of CCP

governance and statecraft and how these commitments shape the embrace and deployment of smart technologies.

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