

Zeitschrift: Asiatische Studien : Zeitschrift der Schweizerischen Asiengesellschaft = Études asiatiques : revue de la Société Suisse-Asie

Herausgeber: Schweizerische Asiengesellschaft

Band: 76 (2022)

Heft: 1

Artikel: Sociotechnical imaginaries shaping China's emerging social credit system

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DOI: <https://doi.org/10.5169/seals-1035014>

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Sociotechnical imaginaries shaping China's emerging social credit system

<https://doi.org/10.1515/asia-2021-0019>

Received June 30, 2021; accepted June 11, 2022; published online June 30, 2022

Abstract: Is the convergence of new technologies and an authoritarian state bound to create an all-encompassing surveillance system? Is this happening in China with the Social Credit System (*shehui xinyong tixi*, abb. SCS)? Grounded in the field of Science and Technology Studies (STS), this article aims to describe the nature of the project by focusing on its inception and retracing how the initial visions materialized into the system that is now in place. It will do so by seeking to identify the sociotechnical imaginaries rooted in the SCS with the premise that these imaginaries, in particular the ones proposed by authoritative actors, shape the development trajectory of the SCS. Next, it asks whether the dominant socio-technical imaginaries are control and power legitimation. By touching upon the role of officials, academics, private companies, and citizens in negotiating what is practicable and what is desirable, this article argues that the SCS does not follow a determined trajectory toward technologically enabled dictatorship. It is the result of a process that Sheila Jasanoff has described as co-production, as the various actors embed their values into the project by imagining, engineering, using or even rejecting elements of the SCS. This article finds that before even knowing all the possibilities offered by new technologies, a certain future was envisioned and shared. Rather than the need for control and surveillance, actors emphasized the importance of trustworthiness, the advancement of a post-industrial society, quality of life, and a sense of community. In a certain way, technology was expected to offer a solution to most, if not all social problems. The room left for experimentation supports the argument that sociotechnical imaginaries have the potential to impact the development trajectory of the SCS project. The article concludes that, after more than 20 years since its inception, the SCS is still a policy under construction, whose interpretation and use is yet to be stabilized.

Keywords: China, science and technology studies (STS), social credit system (SCS), sociotechnical imaginaries

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1 Introduction

The year 2020 was marked by intensified surveillance of Chinese citizens. Yet, this surge of control was not a result of the national implementation of the Social Credit System (*shehui xinyong tixi*, abb. SCS),¹ but rather an immediate response to the SARS-CoV-2 pandemic and the resulting needs for public health management.² Pervasive monitoring was not limited to China either, as temporary and long-term preventive measures in various forms or strictness have been implemented all over the world since 2020, ranging from police or community surveillance to CCTV and drone footage, telecommunication and credit card location tracking, Bluetooth- or GPS-based smartphone tracing applications, health testing and health status verification, as well as other home or electronic wearable surveillance devices.³

The swift development of extensive digital solutions as part of the global pandemic response to cope with health and socioeconomic issues was hardly predictable. It underlines that innovation and national projects – publicized ones in particular – are adopted provided they balance several individual and collective concerns.⁴ The present article is based upon the assumption that the SCS takes a development pathway similar to COVID-19 digital solutions, in the sense that it is not predetermined, and that it should balance different actors' values and concerns. Despite being qualified as an authoritarian country, space for negotiation is made possible in China to some extent by the fragmented authoritarianism model of its political regime,⁵ as well as by the experimentative approach towards policymaking.⁶ As to whether the dominant concern of the SCS is the State's need for control and power over the citizen's every move, further analysis is needed.

2 Structure and methodology

This article begins to address the question whether the SCS is conceived as a coercive surveillance tool by focusing on sociotechnical imaginaries, defined as the “collectively held, institutionally stabilized, and publicly performed visions of desirable future [...] attainable through, and supportive of, advances in sciences

1 State Council 2014.

2 Khalil 2020, Liu/Zhao 2021.

3 Gershgorn 2020, Hale et al. 2021.

4 Mahr/Bloch 2022, Knight/Creemers 2021.

5 Liberthal 1992, Mertha 2009.

6 Heilmann 2008, Heilmann/Perry 2011.

and technology.”⁷ This analytic concept is a useful framing grounded in the field of Science and Technology Studies (STS) to explore a policy still under development and to shed light on the societal future it aims to achieve through the use of technology, or what it attempts to resist. More than discourse analysis of a policy, it implies a performative dimension and serves as an instrument of legitimation.⁸

However, sociotechnical imaginaries are not explicit. A good entry point is to unravel them through the lens of comparison,⁹ as will be done in the present article. Other methods employed are text and sense-making analysis.¹⁰ Assuming that future imaginaries of state entities and scholars are predominantly drawn on for policy purpose, it is relevant to analyse the accessible legal documents, policy and media reports, as well as the work of intellectuals related to the SCS project. Therefore, this research relies mainly on all the open-source documents collected on Credit China (*xinyong zhongguo*), SCS's official state website managed by the two leading agencies of this project, the National Reform and Development Commission (NRDC) and People Bank of China (PBoC). To go further, the finding of this research could be triangulated with visual analysis, ethnographic methods, and case studies. Further research could also explore alternative sociotechnical imaginaries to the dominant political elite, and to which extent they have a power in the endeavour.

This article is structured as follows. After addressing the definition of the SCS, I will compare the external – mainly Western – understanding of the SCS with the national sociotechnical imaginaries of the project. Then, I will explore more in detail the national imaginaries, subdivided into two types: first, the national outward-looking imaginaries, which informed the reference models of the SCS; second, the Chinese inward-looking vision of a desirable future, which is reflected in the establishment of the SCS project. I will conclude by raising the controversies and future work identified by some actors involved in the SCS.

3 Literature review

According to Google Trend,¹¹ worldwide interest on the topic ‘Social Credit System’ rose slightly at the end of 2016, only to gain traction in 2018. Peak interest was reached in the second half of 2021. This surge not only reflects interest in the situation in China, but also the controversies around health monitoring measures amid

7 Jasanoff/Kim 2015: 4.

8 Jasanoff/Kim 2009, 2015, Beckert 2016, Sovacool/Hess 2017.

9 Jasanoff/Kim 2015.

10 Jasanoff/Kim 2015, Widbeck/Linnér 2021.

11 www.trends.google.com, searching for the topic ‘Social Credit System’ worldwide from 2004 to now (2022).

the pandemic. Calling for resistance against privacy and liberty infringements, some COVID-sceptics and activists referred to the Chinese system as the inevitable dystopian future awaiting Western societies if action was not taken against schemes for health and vaccination pass.¹² The SCS became a symbol for a digital totalitarian state, the obverse of a desirable future in sociotechnical imaginaries.¹³

Next to plenty and at times sensationalist media coverage outside of China,¹⁴ the SCS has also become a much-discussed topic in the Western-language academic literature. A number of studies discuss the SCS with a prospective tone, reflecting for instance on how this system could infringe human rights, automate or be diverted for governance or surveillance, and whether the SCS is an exportable model.¹⁵ Yet, this body of literature fails to explain why the Chinese government would need the SCS as a tool to legitimate and maintain its power, giving the impression that granular control of its citizen is an obvious need or end to itself.¹⁶

Other studies remain more descriptive and factual. Western legal scholars, social scientists, and Chinese studies specialists have for the most part clarified the ongoing development,¹⁷ and the multiplicity of heterogeneous components of the SCS.¹⁸ In doing so, they contributed to demystifying the immediate totalitarian threat associated with the SCS and its impact on Chinese citizens by showing, for instance, that it is far from automated,¹⁹ or that it is not an unanimously popular policy.²⁰ Consultancy reports have also described the SCS with a corporate audience in mind, to help businesses active in China navigate the new regulatory environment.²¹

12 See for instance Davidson 2020, Andrews 2021 or Hinchliffe 2021.

13 Jasanoff/Kim 2015: 4–5.

14 See for instance the following newspapers, each featuring a rather sensationalist coverage followed by more nuanced articles a few years later: *Business Insider* (Nguyen 2016, Ma 2019), *Financial Times* (Clover 2016, Hornby 2017), *Foreign Policy* (Creemers et al. 2016, Horsley 2018 and Brussee 2021), *MIT Technology Review* (Condliffe 2016, Hao 2019). *The Conversation* (Brehm/Loubere 2018, Wang 2019), *The Economist* (2016, 2019), *The New York Times* (Gough 2016, Mozur 2018), *The Washington Post* (Denyer 2016, Song 2018), and *Wired* (Botsman 2017, Kobie 2019 and Matsakis 2019).

15 Hoffman 2017, Cheung/Chen 2017, 2021, Chen et al. 2018, Chorzempa 2018, Dai 2018, Loubere/Brehm 2018, Sithigh/Siems 2019, Strittmatter 2019, Wong/Schiels Dobson 2019, Cho 2020, Knight 2020, Orgad/Wessel 2019, 2020, Jessup 2021.

16 On the contrary, China's one-party rule popularity is often explained by its ability to deliver high economic performance. While an important factor, researchers have called for a more nuanced explanation (see Chu 2013, Zeng 2014, Huang/Pang 2022).

17 Hoffman 2017, Ohlberge et al. 2017, Creemers 2018, Von Blomberg 2018, Liang et al. 2018, Arsène 2019, Backer 2019, Song 2019, Ding/Zhong 2021, Woesler et al. 2021.

18 Daum 2017, 2018, Ahmed 2017, 2019, Liu 2019.

19 Mistreanu 2018, Drinhausen/Brussee 2021.

20 Ohlberge et al. 2017, Kostka/Antoine 2018, Kostka 2019, Kostka et al. 2021, Liu 2022.

21 Meissner 2017, Schaefer et al. 2019, European Chamber of Commerce in China 2019.

Interestingly, whereas Western research on the SCS hardly addresses economic aspects, most Chinese scholarly literature stems from the field of economics and business management.²² By focusing on sociotechnical imaginaries, this paper attempts to shed light on the underlying dynamics that have shaped the SCS's formation as well as the reasons why Western academics view the SCS primarily through a political rather than an economic lens.

4 Defining the social credit system

The first step in addressing imaginaries is the definition of the SCS. Terminology – and its translation – influences the representation of what is referred to. Legal scholar Daum believes that the term is too vague and argues that had the SCS been named differently, it would have raised less interest and speculation.²³ So what does “social credit system” mean?

In a narrow sense, it is a credit reporting system, an infrastructure standardized by institutions and rules to collect, assess, and monitor the credit situation of market actors for the purpose of better efficiency thanks to information flow with creditors.²⁴ Over time, as I will explain later, the SCS became an umbrella reform policy that not only addressed financial transactions, but also the improvement of efficiency and information management across various sectors. In this context “credit” no longer described the trust that enables payment deferment in a transaction but also trust for any market interaction. Therefore, all market actors are addressed by the SCS framework. This is reflected in the policy name. “Social” (*shehui*) should actually be translated as “societal” to indicate how the policy is targeted towards the entire *society*, which means individuals, corporate entities, and government institutions alike.²⁵ It does not refer to the kind of non-financial data (also known as “social” data)²⁶ feeding the system.

²² Out of the 9,106 results related to the keyword search “社会信用体系” on China Academic Journals (CNKI) database, more than 55% come from to the field of finance and economics, while 33% are related to governance and public administration (China Academic Journals 2022). Out of the 77 literary references on SCS listed on the Credit China website, 65% stems from in the fields of economics or finance, and 22% are written by experts in financial law.

²³ Luchsinger 2020, Yu 2021.

²⁴ Lin 2010.

²⁵ By the same logic, localized subsystems are called urban (*chengshi*) and community (*shequ*) credit systems. I have also noticed that Chinese researchers tend to call other national credit systems with the same term, such as the *American social credit system* (*meiguode shehui xinzong tixi*) (e.g. Li et al. 2008, Wu/Zhang 2017). It would indicate that, in their mind, the term is not Chinese specific, even if its concrete deployment is adapted to the national characteristics.

²⁶ The use of non-financial information is considered mainstream. According to Experian, a leading multinational credit reporting company, 74% of lenders use nonfinancial data for

This distinction is particularly important for two reasons. Firstly, it indicates that the emphasis does not lie on the individual alone. As a risk management and law enforcement tool for efficiency, the monitoring of state and corporate entities is the core concern of the policy. The provincial documents regarding the SCS construction mention primarily the concrete objective of developing a better business environment, while the goal to carry forward a modern society and a culture of integrity is more aspirational.²⁷ Secondly, by equating the policy with the social data it uses, there is also the danger of obfuscating how privacy concerns, data discrimination and lack of impartial oversight are not only a problem in authoritarian states.²⁸

In practice, the broad sense of SCS is both encouraged and criticized within the policy framework. On the one hand, the Chinese experimentative approach toward policymaking invited early on local government officials to develop infrastructure, processes, regulations, but also to explore creative credit products and promotional activities.²⁹ Widespread use and need of credit information were encouraged so that it would become an integral part of society and a driving force of development. On the other hand, the output of some of these initiatives led to mixed feedback. Aggregating blood donation into the financial assessment led, for instance, to controversies.³⁰ According to different national polls and interviews, there is a general concern that credit is too broadly defined and could be abused.³¹ To accommodate public concerns of an all-encompassing SCS, the next development stage of the policy is devoted to better defining credit and clearly delineating trust-breaching behaviours.³²

In a nutshell, the SCS shows a degree of interpretative flexibility.³³ The fact that the SCS is a heterogeneous assemblage under construction³⁴ contributes to this vague representation of what the system really is. The room left for interpretation allows for several sociotechnical imaginaries to flourish, articulating desirable and undesirable futures. As the sociologist Tarkkala³⁵ demonstrates, sociotechnical imaginaries are not stable and change over time, along with policy framing.

credit risk modelling or lending decisions, and 96% believe in the usefulness of this additional source of information (Experian 2020, see also Njuguna/Sowon 2021).

²⁷ A quantitative analysis from 2007 to 2016 identifies commercial benefits and rural welfare as the predominant topic in the national coverage of the SCS (Shahin/Zheng 2018). The recently released five-year plans of each province confirm that this tendency prevails (e.g. Hebnews 2021).

²⁸ O’Neil 2016.

²⁹ Wang 2005.

³⁰ Toledo 2019.

³¹ Wang/Pan 2020.

³² State Council 2020.

³³ Bijker et al. 1987; Bijker 1995.

³⁴ Liu 2019.

³⁵ Tarkkala et al. 2019.

5 External sociotechnical imaginaries of the social credit system

I begin with the sociotechnical imaginaries that arguably have the least impact on policy debates in China. These are the external, mainly Western visions of the SCS. Terminology issues aside, legal scholar Daum points out – and other scholars after him – that the SCS is often covered by Western media as a projection of our fears of pervasive use of technology.³⁶ The SCS, and by extension China, is imagined as the undesirable model.³⁷ This vision resonates with Edward Said's influential *Orientalism* theory, suggesting that Western culture has learnt to view China with a mix of fascination and fear. In the case of the SCS, fascination for potential technological advancement and fear over its potentially undemocratic use has created a fertile soil for sociotechnical imaginations.

While it has been recognized that the original SCS documents are “dry”,³⁸ it is often described in overly melodramatic fashion as a digital dystopia established for the sole purpose of maintenance of the leadership's power, total control of the population and assertion of power abroad.³⁹ This framing is reinforced by its association to President Xi Jinping, and his image as an autocratic leader so thirsty for absolute power that he abolished term limits and evinced any opposition under the pretext of his anti-corruption campaign.⁴⁰ Leadership power is a common explanation for modern Chinese policymaking,⁴¹ yet the SCS is not President Xi Jinping's flagship policy,⁴² since it was already promoted by Jiang Zemin in 2001.

In Western countries, the SCS crystallizes concerns over China's rapid economic, technological, and undemocratic development. Yet the timeline of the SCS's

36 Daum 2017.

37 Resistance against the use of social data for credit scoring pre-existed (e.g. Geslevich-Packin/Lev-Aretz 2016, O'Neil 2016), but became stronger as awareness for the SCS increased. For instance, the European Commission issued the *Artificial Intelligence Act*, in which it is proposed to prohibit artificial intelligence practices for social scoring and trustworthiness assessment or usage of real time biometric data for the purpose of law enforcement. The word choice “social score and trustworthiness assessment” suggests an influence of the SCS. (European Commission 2021: art. 5(c)–(d)).

38 Greenfield 2018.

39 Strittmatter 2019.

40 Arguments supporting the leader power explanation speculated that his firm stand against corruption and his experience in charge of the highly surveilled Olympic Games in 2008 inspired him to the comprehensive system. See also Strittmatter 2019.

41 Duckett 2019.

42 The “Belt and Road Initiative” (BRI), launched in 2013, is claimed as Xi Jinping's flagship policy.

development also warrants to be taken into consideration. In 2001, it was hardly imaginable that total digital dictatorship would soon be possible. On the contrary, up until 2009, the Internet in China was portrayed by many as a technology of freedom embedded with democratic hopes.⁴³ I therefore now turn to the leadership's vision of the SCS to analyze the initial context of the project and explain why it was in fact not imagined as a tool for authoritarian digital control.

6 Internal sociotechnical imaginaries of the social credit system: (1) outward-looking

Because of the vague definition of the SCS, its starting point is also unclear. “Trustworthiness” (*shou xinyong*) was already promoted within pilot projects in 1984.⁴⁴ The term “social credit” (*shehui xinyong*) was mentioned for the first time in 1990 in a State Council statement.⁴⁵ What is clear is that it did not exist before 1978, because the People's Republic of China (PRC) was a centrally planned economy without any need or infrastructure for credit. After 1978, as the PRC opened-up to the market economy, bank and commercial credit emerged, followed by credit agencies and law to guarantee compensation for defaulted loans in 1993.⁴⁶

Fair Isaac Corporation (FICO) and Experian, leading credit agencies in the US and UK respectively, provided their help in the endeavour.⁴⁷ Developed countries, the US in particular, were made into advanced, almost idealized, models to learn from. It was also understood that expanding credit allowed them efficient management of the economy and stimulated consumption, hence growth.⁴⁸ For this reason, many Chinese scholars and government officials started to visit Western developed countries.⁴⁹ Studies on their credit system were compiled, which constitute the foundation of credit knowledge in China.⁵⁰ The SCS is explicitly based on Western models.⁵¹

⁴³ Delise et al. 2016.

⁴⁴ Reformdata 2012.

⁴⁵ State Council 1990. The concept “social credit system” (*shehui xinyong tixi*), previously referred to as the “national credit management system” (*guojia xinyong guanli tixi*), was first mentioned in 2002 (Lin 2019).

⁴⁶ People.cn 2018.

⁴⁷ Ronas-Tas/Guseva 2014, Huang et al. 2016, Lin 2019.

⁴⁸ Yang/Qiao 2001.

⁴⁹ Lin 2012, 2019, Han 2018, Ronas-Tas/Guseva 2014.

⁵⁰ Lin 2019. Reading these comparative studies is very insightful to understand how some foreign elements have been perceived and adapted within the SCS (e.g. Li et al. 2008, for a short analysis of the Swiss system, see for instance Zhang 2017).

⁵¹ Shahin/Zheng 2018.

For many Chinese credit scholars, and notably the leading SCS designer Lin Jinyue, national development follows an evolutionary path. As China is entering the digital economy, it has to catch up by improving the problem of lack of integrity, a problem that is believed to be already solved in Western countries.⁵² In the same vein, it was hoped that the emphasis on moral education would be temporary. Once well into the post-industrial era and trust being part of the fabric of society, the moral assessment part of the SCS would recede into the background while financial assessment would prevail. This is what these scholars perceived to be the case in the West.⁵³

Inspiration from the West was not restricted to scholars and policy specialists. Ordinary citizens and entrepreneurs experienced a growing exposure to Western societies through travel and business. For many Chinese observers social trust appeared to be a key underlying dynamic of developed economies. The influential businesswoman Huang Wenyun, for instance, expressed after a visit the US that trust was fundamental to the functioning of a society.⁵⁴ Huang's name has become strongly attached to the SCS, because she made large donations to the project.⁵⁵ Premier Zhu Rongji allegedly even launched the SCS in response to one letter she wrote, a letter "from an ordinary citizen" requesting a fair competition mechanism to enhance economic and social integrity as exist in other countries.⁵⁶

In brief, Chinese sociotechnical imaginaries were strongly influenced by the belief that the grass is greener elsewhere, and that China is only catching up. Western countries have a post-industrial economy model to learn from and to imitate. Experts from the West even contributed, directly or indirectly, to the endeavour. Even if the SCS is adapted to local conditions, the belief that other SCS were successfully developed elsewhere contributed to the positive reception of the national policy.⁵⁷ In addition, the policy is portrayed as a direct response to the population's needs for such a comprehensive system.

52 Han 2018, Lin 2022.

53 Han 2018, Lin 2012, 2022.

54 Shenzhen Special Zone News 2014.

55 Contrary to Huang's original story, China National Investment & Guaranty Co. Ltd. played a key role in leading research, collaboration and high-level discussion with Premier Zhu Rongji (People. cn 2018). Note that openness of credit and credit data was also a requirement to access the World Trade Organisation (WTO) in 2001.

56 Lin 2010, Lin 2019.

57 Wang 2019, Kostka 2019.

7 Internal sociotechnical imaginaries of the social credit system: (2) inward-looking

The civilized West is even more attractive when compared to what is believed to be a backward China. Despite impressive economic growth since the reform and opening-up in 1978, the Chinese population suffered from a sense of moral crisis.⁵⁸ A national survey in 2009 found that only 5.3% of the population was satisfied with China's ethical situation.⁵⁹ Huang Wenyun, the reportedly hero originator of the SCS initiative, substantiated her reform request with a lot of personal anecdotes on how much she suffered from fraud and disillusionment in her own country.⁶⁰

In the 2000s, public contentions expressed growing concern for the moral decay caused by economic growth.⁶¹ Notwithstanding China's autocratic regime and censure, these concerns could not be ignored. For the few scandals which made it to international headlines, such as the 2008 tainted milk scandal or the 2011 Wenzhou train collision, there were a host of other issues regularly giving a concrete sense of insecurity and moral decay to people: corruption, mass protests, pollution, food and safety hazards, unfulfilled contracts, tax evasion, fraud, criminality, etc. One incident in particular became an ethical wake-up call. In 2011, surveillance cameras displayed that some twenty bystanders failed to rescue, or even cared to notice Wang Yue, a two-year-old girl who had been run over in the street. Consequently, central authorities promoted one year later twelve core values – among which civility, prosperity, harmony and integrity – to address the perceived moral crisis. The ethic awakening came with the realization that a high quality of life could not be attained by money alone, but for which underlying values and trust were necessary. There was a strong desire for a society with a sense of community rather than apathy. This desire informed the national sociotechnical imaginaries. It is interesting to observe that the SCS, first and foremost a financial initiative, was imagined over time as a tool that would go beyond the credit in a narrow sense and, correlating with social concerns, expanded to the socio-economic field. This can also be observed in a shift of the SCS's objectives from financial stability to socio-economic stability in official discourses around 2011–2012. Experimentation on moral assessment became more important in the SCS, thereby diverting from the Western models.

58 He 2015, Lin 2009, Linggi 2011.

59 Fan 2009.

60 Shenzhen Special Zone News 2014.

61 Lei 2017.

Over time, the SCS grew into an overarching policy framework that was supposed to solve a large number of problems and trust-breaking behaviour was identified as the root of all kinds of society's ills in China.⁶² As mentioned above, Chinese scholars, SCS developers and population alike tended to believe that developed countries were attainable models who had already solved this issue with a credit system. This shows that support for the SCS was not mainly motivated by the desire for citizen surveillance, for which there are also other methods that do not need to be promoted openly.⁶³ The SCS was thus primarily conceived of as an economic tool and economic considerations are at the core of the SCS since its inception. Of course, this does not mean that it cannot also serve other goals. In addition to delivering economic performance, caring for the citizens' concern and bringing long-term stability, the SCS could indeed also become an important ideological tool in service of the Party.⁶⁴ The inspirational slogans of building a "Harmonious Society" (*hexie shehui*) and the "Chinese Dream" (*Zhongguo meng*), put forward respectively by then-President Hu Jintao in 2004 and by President Xi Jinping in 2013, indicate that stability and a broad socioeconomic development are promoted as a key goal of the leadership.

Against this backdrop, national sociotechnical imaginaries view the SCS as a one-size-fit-all solution that would bring trust, protection against misdemeanours, individual and collective prosperity, as well as material and environmental quality of life. Having identified quality of life and sense of community as important aspects of the national sociotechnical imaginaries, I now turn to the ways these values are articulated within the SCS project.

7.1 The social credit system to improve quality of life

By expanding access to credit for both consumers and enterprises, the SCS promises to contribute to economic growth and thereby also technological progress. Both foster a higher quality of life. The SCS is envisioned as being supported by and supporting innovation. Better market environment and access to credit will help entrepreneurs and companies to innovate. The SCS infrastructure should be supported by the latest technology, and official documents highlight particularly the importance of Big Data and Artificial Intelligence. Whether and how these technologies will be applied remains to be seen. Moreover, the SCS' initial vision

⁶² He 2015. A global debate about trust took place since the end of the Cold War. Observing that in Western Europe, democracy alone was not enough to guarantee prosperity, economics and political scholars identified trust as a potential economic growth factor (Linggi 2011).

⁶³ Drinhausen/Brussee 2021.

⁶⁴ Gow 2017.

was formed long before these technologies existed, for instance, with regards to security surveillance technologies. Therefore, it is doubtful that the SCS was initially considered as a tool for control, although its later use could diverge from the uses for which the SCS was initially designed.

On an abstract level, the local government officials in their work report that the SCS is expected to create an attractive business environment and a “beautiful” society.⁶⁵ On a concrete level, the SCS’ main contribution to quality of life is convenience and improved efficiency in the administrative process for trustworthy individuals, which is currently 99% of the overall Chinese population, although we should be cautious with taking this data at face value, especially in regards to the prosecution of ethnic minorities.⁶⁶ Nevertheless, it is important to recognize that the SCS is heavily promoted as a tool for administrative efficiency. For state and private entities which are the main target of the SCS, the benefit of convenience is triple. First, by providing a hassle-free all-in-one service for administration processes, entrepreneurs save time and focus on their core business. Thanks to a digitally streamlined process, a company could be set up in half a day,⁶⁷ and a loan obtained in less than 3 min.⁶⁸ Second, local governments ease their resource-intensive supervision workload. Finally, digitalization of government services is intended to stymie corruption and arbitrariness.⁶⁹

7.2 Social credit system to foster a sense of community

Sense of community is to be achieved with small-scale projects within a village or a neighbourhood, often in rural areas or elderly urban dwellers. Consisting mostly of a mechanism of personal credit points (*geren xinyongfen*), also called moral points (*daode jifen*), it is based on voluntary participation to activities, whose accumulation leads to material and honorific rewards. These subsystems aim mainly at individuals rather than companies. Focusing on moral assessment rather than

⁶⁵ E.g. Xiaoxiang Morning News 2020, Song 2021, Hebnews 2021. Some even target “exquisite-ness” (Song 2021).

⁶⁶ According to statistics of the National Public Credit Information Center in 2019 and 2020, only 0.15 to 0.30% of the population is blacklisted, and only 2% of the moral entities (Drinhausen/Brussee 2021). In some local official documents, it is clearly stated that the objective is to have a maximum 0.2% of the market actor blacklisted (Xinxiang County Office 2022, Peony Evening News 2022).

⁶⁷ Xiaoxiang Morning News 2020.

⁶⁸ Alibaba put forward the “310” concept in 2015: 3 min to fill in a form online, 1 s to obtain a credit line, and 0 human intervention. Research confirms quick processing for many lending services (Chen 2020).

⁶⁹ Ke/Zhang 2020, Wu 2022, see also State Council 2021.

financial credit in the narrow sense, these local projects are often a sign of a high concern for poverty, left-behind rural families and solitary elderly. Relying on official governmental reports and newspaper interviews, community schemes are considered a success: closer unity and mutual help among people, improved living conditions, reduced criminality, better sense of satisfaction and happiness.⁷⁰ Delegating public responsibility for infrastructure maintenance and social services by demanding voluntary work is questionable, yet these moral points schemes remain small in scale and far from the Western concern of a digital surveillance assigning points to every behaviour. On a larger scale, at the city level, some moral scorings exist. However, instead of encouraging a sense of community, these local systems provide small conveniences to their users: simplified administrative processes, easier access to the shared economy and potential discounts. Commercial SCS systems could be considered as part thereof. In 2019, Lian Weiliang, Deputy Director of the SCS' leading organism NDRC, formalized that moral scoring subsystems can only be used as an incentive mechanism, not for punishments.⁷¹ Finally, on the provincial and national level, through better law enforcement, the community is ironically created by isolating untrustworthy elements, as captured by the 2018 State Council guideline, "once untrustworthy, restricted everywhere." The disproportionality of punishment is frowned upon. Peking University Law Professor Shen Kui advocated for the abandonment of this guideline.⁷² He also reminded that even if the SCS yields some success, it is utopic to believe that it will create a flawless society. Indeed, as of end 2020, priority in the development of the SCS is given to legislation. Financial assessment should remain the core of the policy. Disproportionality, arbitrariness, and overgeneralization of the term "credit" should be avoided.

Fundamentally, China is in a stage of constant reforming and amelioration since its opening up in 1978, and so is the SCS policy since its outset. Sociotechnical imaginaries are influenced by current issues people are facing at home: fraud, heavy administrative burden, poor access to credit, need for innovation, internal migration, rapid urbanization, etc. These concerns were embedded as a desire for a better future in the SCS policy. It is hoped that the SCS will affect the quality of life, interpersonal relations, business, and technology. In a word, support China's socioeconomic development.

70 E.g. Taihe Net 2021, Chen/Tang 2022.

71 China News 2019.

72 Shen 2019.

8 Co-production & evolving sociotechnical imaginaries

In practice, ideals and good intentions don't prevent controversies from emerging. China's population, the end users of the SCS, are not ready to tolerate everything in the name of a better future. Points of friction and subsequent negotiations are particularly interesting because it reminds us that, to some extent, the SCS is [the SCS is] a co-production (footnote: Jasanoff 2004), that is [a collective project...] a collective project rather than a top-down imposed decision.⁷³ Controversies often led to clarification or redirection of the course of development of the SCS. This is where we can also gain insight into the experimental nature of the policy.

Here, I will shortly focus on one prevalent controversy: the quantification of morality and its aggregation to financial assessment. The blood donation controversy quoted above is one example, but many other cases sparked public reactions.⁷⁴ Among them, the recent controversy of the civility score in Suzhou (2020)⁷⁵ is particularly interesting. It proves that what is technically feasible is not necessarily desirable in the citizens' imaginaries. The civility score was based on an app built on top of the "Health Code" (*jiankangma*) COVID-tracking app, which has become de facto obligatory since 2020.⁷⁶ From a technical point of view, it made sense to use an already prevailing app rather than invest resources in a new one, whose adoption rate is uncertain. The moral rating, however, was not well accepted. Interviewed by a Shanghai Newspaper, a representative of the Suzhou government explained that the negative public reception was due to poor communication and insufficient testing of the trial version, but the intentions behind were good.⁷⁷ Nevertheless, the app had to be modified. Following this logic,

⁷³ In addition to national policymakers, there are 47 ministerial agencies, 65 market institutions, 16 universities, thousands of credit agencies and many private companies that contribute to the legal and infrastructural development of the SCS. Thirty two provinces (all but Hong Kong and Macao) are in charge of tailoring the national SCS policy to their provincial level. Six hundred and seventy two cities take part in the urban credit schemes. Rural and community schemes have not been compiled yet. Between 2018 and 2020, 62 demonstration zones have been selected as models to learn from. China's adult population and all companies active in China are the SCS end users. Finally, note that all the SCS official documents are first published as public drafts open for comments before being enforced (e.g. Hebnews 2021).

⁷⁴ E.g. the scoring of individuals in Suining in 2010 (Creemers 2018), the ethical files in Pujiang between 2009 and 2011 (Chu 2012), the National Committee Member of the Chinese People's Political Consultative Conference Li Xiaolin's suggestion of a moral file in 2012 (Li 2012).

⁷⁵ Qian 2020.

⁷⁶ Mahr/Bloch 2022.

⁷⁷ Qian 2020, Yuan/Chen 2020.

it is not because parallel systems are in place, for instance, for surveillance purpose, that they will necessarily be embraced into the SCS without civil negotiation.

As mentioned above, the distinction between financial credit score and moral credit score has been required since 2019, at least on paper. Relying on previous experiences and controversies, NDRC decided that the moral credit score should only be used for incentive, not deterrence.⁷⁸ As the Suzhou case shows, even if it has been educated in an official document previously, this was still a problem in local practice in 2020. This reminds us that not every document or technological promotion is to be taken at face value.

More generally, this controversy illustrates that although scholars and citizens agree to the principle of trust in society put forward by policymakers, they disagree with the “disciplinary overkill” of getting more burden than benefits from the system.⁷⁹ Corroborating Tarkkala’s findings,⁸⁰ the case of the SCS gives evidence that sociotechnical imaginaries evolve to better delineate the future society the community wishes to achieve, while the policies are adapted accordingly. In sum, the process can best be described as an agile management of the project, with a broad objective at the end of the road and small steps with twists and turns to reach it. This pragmatic and gradual approach to reform resonates with Deng Xiaoping’s policymaking principle of “crossing the river by feeling the stones.”

9 Conclusion

Although the SCS has reached an advanced stage of construction in over twenty years of local experimentation, it is still a moving target. I have therefore decided not to describe the system’s exact functioning and its subdivisions, because I expect the system to be modified and clarified in the next stage of development. Instead, I have explored the sociotechnical imaginaries underlying the SCS development. I have focused on the visions held by the authority and promoted in official documents, but I have tried to signal that it is a collective process with many stakeholders. Apart from cultural and historical explanations, few research has been devoted to explaining the reasoning and hopes behind the SCS, and this paper starts to address this topic. Since I focused on official documents, further research is needed on the alternative visions and if they end up playing a role in the project. To my knowledge, the sociotechnical imagination framework is also little used in the Chinese context. Hence, this study contributes to STS research about China.

78 China News 2019.

79 Wang/Pan 2020.

80 Tarkkala et al. 2019.

The starting point of the SCS was contextual. There were concrete financial issues to solve in order to establish market order, as other countries did before China. These post-industrial economies were admired as a model to learn from. As time passed, the SCS continued to be linked to the present circumstances. As the Chinese government encountered social unrest, it broadened the scope of the SCS. To address growing tensions, the government aligned its objective of high-quality growth to the aspirations of the population for a better quality of life and stronger community ties. At the same time, new technologies offered new potential for deployment of the policy. Because the SCS is so broadly defined, it feeds imagination and fear, especially from an external point of view. Perception of the policy might also be changing in China. Researchers have found that, after purposefully framing the SCS as a potentially repressive tool, results of a survey showed decreased support to the policy.⁸¹ By following the dominant sociotechnical imaginations, I did not observe the wish to develop the SCS as a control tool for the sake of strengthening the authority's grip on power. At least, it is not publicized.

As it continues to evolve, it is hard to predict if citizens' resistance will grow stronger, or if the government will impose certain aspects to ensure greater control. It could also be that the SCS disappears in the background as a seamless infrastructure supporting other administrative or commercial activities. It would become unnoticeable unless glitches appear. If the SCS manages to be so imperceptibly entangled in the life of its users, it would become a black box. In the West, especially in the US, the credit rating system has already become a black box. In a comparative perspective, the Chinese example becomes interesting. Even if the modelling and the use of technology constantly improve the American system, it is hardly questioned unless a crisis or a controversy emerge. Per comparison, the SCS project in China is still partially in the experimental phase. It is regularly evaluated and subject to improvements and changes. This co-production period is thus a particularly important moment to question its purposes and speculate about its future impacts.

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⁸¹ Kostka et al. 2021. About the issue of failure of imagination, see Halegoua/Lingel 2018.

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