
ORWELL THAT ENDS WELL? SOCIAL CREDIT AS REGULATION FOR THE ALGORITHMIC AGE

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China's Social Credit System (SCS) is a massive government-led initiative to promote data-driven compliance with law and social values. In the West, it is widely viewed as an Orwellian effort to crush resistance to the Chinese Communist Party. Such a picture is, if not wholly incorrect, decidedly incomplete. This Article offers a revisionist account of SCS and its implications for liberal democracies. SCS is, in fact, the world's most advanced prototype of a regime of algorithmic regulation. As such it could well represent our future. Or it could be a cautionary tale that sets the West on a different path.

SCS is a sophisticated effort not only to embrace the capabilities of data analytics, but to restrain their potential abuses. Its three distinctive components are: (1) data as infrastructure; (2) feedback mechanisms which leverage the data to promote outcomes; and (3) an integral oversight regime of guiding principles and legal restraints. The system is imperfect, sometimes intentionally so. Yet both its merits and flaws are instructive.

Incorporating lessons from China's system is crucial for resolving the great legal challenges we face in the emerging era of digital platform power, relentless data aggregation, ubiquitous artificial intelligence, and algorithmic control.

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I. INTRODUCTION

Technology scholars, policy-makers, and executives in Europe and the United States disagree violently about what the digitally connected world should look like. They agree on what it shouldn't: the Orwellian panopticon of China's Social Credit System ("SCS"). SCS is a set of government-led initiatives to promote data-driven compliance with law and social values, using databases, analytics, lists, and software applications.¹ In the West, it is widely described as a dystopian effort to crush any spark of resistance to the dictates of the Chinese Communist Party ("CCP").² SCS seems the embodiment of philosopher Jeremy Bentham's vision of surveillance so pervasive that all comply even when not being watched.³

This picture is, if not wholly incorrect, decidedly incomplete. SCS is the world's most advanced prototype of a regime of algorithmic regulation. It is a sophisticated effort not only to embrace the capabilities of data analytics, but also to restrain their potential abuse.

1. See Amanda Lee, *What is China's Social Credit System and Why is it Controversial?*, S. CHINA MORNING POST (Aug. 9, 2020, 12:00 PM), <https://www.scmp.com/economy/china-economy/article/3096090/what-chinas-social-credit-system-and-why-it-controversial> [<https://perma.cc/4K5J-HNLG>].

2. See *infra* note 10.

3. See Julie E. Cohen, *Privacy, Visibility, Transparency, and Exposure*, 75 U. CHI. L. REV. 181, 184 (2008).

What if the patron saint of SCS was neither George Orwell nor Jeremy Bentham, but Alan Kay, the Apple executive who said, “the best way to predict the future is to invent it?”⁴ The world is hurtling toward an era where everything senses, everything is connected, and the gold of insight is spun from the straw of data on the loom of artificial intelligence. This future, as many now point out, poses grave dangers for privacy, fairness, economic security, and human autonomy. It promises wealth, comfort, and solutions to planetary threats. It also endangers the finely-tuned balance of both capitalist economic dynamism and liberal democratic politics. Our technologies (and those employing them) want everything to be watched. Using all that data, machine learning algorithms can find patterns that humans ignore, and those insights can be used to shape behavior.

We must develop novel governance structures appropriate to this epoch. SCS may be the first serious attempt. Abstracted from the particularities of its current implementation, the social credit approach involves three core design principles: (1) an infrastructure layer to integrate data and make it broadly available; (2) feedback mechanisms to leverage that data to promote outcomes; and (3) an integral oversight regime that establishes guiding principles and legal restraints.

Social Credit as actually implemented in Xi Jinping’s China sometimes operates in ways that democratic societies find frighteningly repressive. But that is the point. Social credit planted in the soil of liberalism could grow into something quite different. It might even be more protective of fundamental rights and the values of a decentralized capitalist society than native approaches to the surveillance problem. We should protest the use of social credit mechanisms against the Uighur minority in Xinjiang or pro-democracy protestors in Hong Kong, just as we condemn Nazi Germany’s use of IBM Hollerith tabulating machines to exterminate Jews⁵ and Cambridge Analytica’s use of Facebook’s social media engine to manipulate elections.⁶ The challenge—impossible but worth striving for—is to separate the tool from its applications. That can make it possible to alter the affordances of the tool to neuter its predisposition for harm.

At first glance, SCS reinforces current trends toward the concentration of algorithmic power. Yet even in China’s authoritarian society, countervailing aspects can be discerned. The architecture of social credit does not inevitably lead toward centralization, secrecy, control, and manipulation. Surprisingly, it contains the seeds of something quite different. Social credit may actually be the most realistic pathway to combat the excesses of surveillance capitalism and its

4. Kay made this particular formulation famous in the technology world, although others expressed similar concepts earlier. *We Cannot Predict the Future, But We Can Invent It*, QUOTE INVESTIGATOR (Sept. 27, 2012), <https://quoteinvestigator.com/2012/09/27/invent-the-future/> [https://perma.cc/U9Z6-67VT].

5. See EDWIN BLACK, *IBM AND THE HOLOCAUST: THE STRATEGIC ALLIANCE BETWEEN NAZI GERMANY AND AMERICA’S MOST POWERFUL CORPORATION* 24 (2001).

6. See Nicholas Confessore, *Cambridge Analytica and Facebook: The Scandal and the Fallout So Far*, N.Y. TIMES (Apr. 4, 2018), <https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html> [https://perma.cc/EAX8-5QSK].

state-driven siblings. It could hasten the availability of data accessible to all, and loosen the power of those who today control information flows.⁷

If nothing else, social credit is an alternative vision that throws Western models into starker relief. A terrifying boogeyman in the dark—the role social credit plays today in Western discourse on law and ethics of algorithmic systems—permits us to tell comforting stories about our own choices. Yet that very smugness is what produced our current challenges. We need something more bracing: a challenger we can examine in the light, forcing us to question assumptions and consider radically new ideas. Some aspects of social credit, both in terms of benefits and dangers, are actually more developed in the United States today. This Article therefore considers SCS on its own terms, as an approach to the fundamental problems of governance, regulation, and trust.

The remainder of this paper proceeds as follows. Part II offers a detailed description of SCS, its history, and its objectives. Part III analyzes SCS as a regulatory regime. SCS is both a vision for social and legal compliance on the basis of algorithms, and a governance structure to address the problems such a system generates. Part IV explains how the informational architecture of SCS points the way for limiting the dangers of pervasive surveillance. Part V concludes.

The investigation could not be more timely. The novel coronavirus that, ironically, originated in China in 2019, forced citizens of liberal democracies to accept coercive extensions of state power that would have been unthinkable months earlier.⁸ Not only China, but also more open societies, are employing every means of surveillance at their disposal to identify and isolate carriers.⁹ Seeing limits on collection and use of personal information, and deciding how to implement them, have never been more pressing matters.

II. WHAT IS SOCIAL CREDIT?

A. *SCS as Boogeyman*

In the West, SCS is widely described as a dystopian nightmare, a prison world of pervasive surveillance feeding soul-crushing behavior modification to promote obedience to the CCP.¹⁰ It is often explained as a universal scoring

7. The economic historian Karl Polanyi described a similar dynamic in the transition to modernity, which he termed the “double movement.” In Polanyi’s account of the rise of modernity, new forms of power emerged alongside mechanisms to restrain them. See KARL POLANYI, *THE GREAT TRANSFORMATION* 239 (1944).

8. See Robert E. Litan & Martin Lowy, *Freedom and Privacy in the Time of Coronavirus*, BROOKINGS (Apr. 23, 2020), <https://www.brookings.edu/research/freedom-and-privacy-in-the-time-of-coronavirus/> [https://perma.cc/R9JW-HGLZ].

9. See *id.*

10. See, e.g., *Remarks by Vice President Pence on the Administration’s Policy Toward China*, TRUMP WHITE HOUSE (Oct. 4, 2018, 11:07 AM), <https://trumpwhitehouse.archives.gov/briefings-statements/remarks-vice-president-pence-administrations-policy-toward-china/> [https://perma.cc/5UMZ-LCLK] (calling SCS “an Orwellian system premised on controlling virtually every facet of human life”); Ross Anderson, *The Panopticon Is Already Here*, ATL. (Sept. 2020), <https://www.theatlantic.com/magazine/archive/2020/09/china-ai->

regime, where every citizen is assigned a number representing their compliance with state-defined norms and laws.¹¹ The term “social credit” has become an epithet, used to attack everything from crowdsourced fact-checking systems¹² to social media services banning those who violate their terms of service¹³ to

surveillance/614197/ [https://perma.cc/PS65-JB64] (“China’s government could soon achieve an unprecedented political stranglehold on more than 1 billion people.”); *China Invents the Digital Totalitarian State*, ECONOMIST (Dec. 17, 2016), <https://www.economist.com/briefing/2016/12/17/china-invents-the-digital-totalitarian-state> [https://perma.cc/W622-CZKE] (labeling SCS as “digital totalitarianism”); Paul J. D’Ambrosio, *The Proliferation of Proficiency*, L.A. REV. BOOKS (Jan. 18, 2020), <https://lareviewofbooks.org/article/the-proliferation-of-proficiency> [https://perma.cc/DSD4-6WUW] (“China is aggressively implementing the largest surveillance system the world has ever seen.”); Rich Acello, *Would a Government-Backed Social Credit Scoring System Like China’s Ever Fly in the US?*, ABA J. (Aug. 1, 2020, 12:45 AM), <https://www.abajournal.com/magazine/article/some-u.s.-businesses-already-require-consumers-to-maintain-a-certain-social-credit-score-but-a-government-sponsored-system-is-unlikely> [https://perma.cc/WG4S-CMDM] (quoting a senior policy analyst for the American Civil Liberties Union describing the application of credit scores to other areas of life as “ominous”); Steven W. Mosher, *China’s New ‘Social Credit System’ Is a Dystopian Nightmare*, N.Y. POST (May 18, 2019, 11:39 AM), <https://nypost.com/2019/05/18/chinas-new-social-credit-system-turns-orwells-1984-into-reality/> [https://perma.cc/ZUV5-8WJQ] (describing SCS as a “dystopian nightmare”); Jacob Dirnhuber, *China’s Creepy ‘Social Credit’ System Creates ‘Dystopian Nightmare’ That Posts Locations of Blacklisted Citizens and Rewards Others for Grassing Up Their Mates*, SUN (May 22, 2019, 11:28), <https://www.thesun.co.uk/news/9117058/china-social-credit-spy-friends/> [https://perma.cc/T3YM-EEVT] (also describing SCS as a “dystopian nightmare”). A few articles attempt to counter the fear-mongering. See, e.g., Shazeda Ahmed, *The Messy Truth About Social Credit*, LOGIC (May 1, 2019), <https://logicmag.io/china/the-messy-truth-about-social-credit/> [https://perma.cc/3V2U-D252]; Bing Song, *Opinion: The West May Be Wrong About China’s Social Credit System*, WASH. POST (Nov. 29, 2018), <https://www.washingtonpost.com/news/worldpost/wp/2018/11/29/social-credit/> [https://perma.cc/M2YD-26U3] (urging a realistic assessment of pros and cons of SCS); Jamie Horsley, *China’s Orwellian Social Credit Score Isn’t Real*, FOREIGN POL’Y (Nov. 16, 2018, 6:46 AM), <https://foreignpolicy.com/2018/11/16/chinas-orwellian-social-credit-score-isnt-real/> [https://perma.cc/BEZ5-RPR2] (arguing that SCS is not as scary as critics make it out to be); Louise Matsakis, *How the West Got China’s Social Credit System Wrong*, WIRED (July 29, 2019, 3:25 PM), <https://www.wired.com/story/china-social-credit-score-system/> [https://perma.cc/5C7K-X4FG] (stating that attacks on SCS assume a worst-case scenario that does not exist today).

11. See, e.g., Rachel Botsman, *Big Data Meets Big Brother as China Moves to Rate Its Citizens*, WIRED UK (Oct. 21, 2017, 8:00 AM), <https://www.wired.co.uk/article/chinese-government-social-credit-score-privacy-invasion> [https://perma.cc/BW35-K3XP] (describing the heart of SCS as a “national trust score”); *Social Credit System Coming to China, with Citizens Scored on Behavior*, NBC NEWS (May 11, 2019), <https://www.nbcnews.com/nightly-news/video/social-credit-system-coming-to-china-with-citizens-scored-on-behavior-59458117685> [https://perma.cc/UXM7-JKGN] (claiming that “every citizen will be scored based on their behavior”); Clinton Nguyen, *China Might Use Data to Create a Score for Each Citizen Based on How Trustworthy They Are*, BUS. INSIDER (Oct. 26, 2016, 2:33 PM), <https://www.businessinsider.com/china-social-credit-score-like-black-mirror-2016-10> [https://perma.cc/34TN-55FS] (referencing “one big social trustability score”); F.H. Buckley, *‘Social Credit’ May Come to America*, WALL ST. J.: OPINION (Aug. 28, 2019, 6:59 PM), <https://www.wsj.com/articles/social-credit-may-come-to-america-11567033176> [https://perma.cc/238U-K3K9] (“The system ranks Chinese citizens according to what the government regards as good and bad behavior.”); Anna Mitchell & Larry Diamond, *China’s Surveillance State Should Scare Everyone*, ATL. (Feb. 2, 2018), <https://www.theatlantic.com/international/archive/2018/02/china-surveillance/552203/> [https://perma.cc/ELM4-UTHE] (“China’s communist party-state is developing a ‘citizen score’ to incentivize ‘good’ behavior.”).

12. See, e.g., Tom Parker, *Twitter Tests Social Credit Style Fact-Checking System for Politicians and Public Figures*, RECLAIM THE NET (Feb. 20, 2020, 4:52 PM), <https://reclaimthenet.org/twitter-social-credit-fact-checking/> [https://perma.cc/BTF9-AAZU] (comparing Twitter’s experimental system to crowdsource fact-checking to China’s social credit system).

13. See Bradley Brewer, *The Invisible Shackles of America’s Social Credit System*, HUM. EVENTS (Sept. 13, 2019), <https://humanevents.com/2019/09/13/the-invisible-shackles-of-americas-social-credit-system/> [https://perma.cc/A8AG-KLSW]; Josh Hawley, *Sen. Hawley: It’s Time to Stand Up Against the Muzzling of*

Covid-19 contact tracing apps¹⁴ to legislation banning gender discrimination in public accommodations.¹⁵ It has even been identified as an sign of the Antichrist.¹⁶ For these authors, SCS is self-evidently evil.

Even those seeking a more balanced perspective have difficulty describing SCS accurately. In the popular press, the term can mean any form of incentives based on real-time monitoring, such as a mobile application that awards college students virtual “points” for attending class by tracking their movements through GPS.¹⁷ Such a definition is so expansive as to be useless for distinguishing social credit from “nudges,”¹⁸ gamification,¹⁹ surveillance capitalism,²⁰ the “scored society”²¹ or other controversial mechanisms of data-driven accountability.

In reality, as one Chinese legal scholar puts it, “[t]he scary picture [of SCS] . . . reflects often not much on China’s reality but more on the Westerners’ acute sense of anxiety about their own fate in the data society.”²² We live in a world where both the government and corporations can increasingly track our every move, transaction, and utterance.²³ Even worse, both can use powerful analytics to piece together patterns from scattered breadcrumbs of information. An era of techno-utopianism has quickly given way to a “techlash” against the power of digital platforms.²⁴

Big Brother from George Orwell’s *1984* and Jeremy Bentham’s panopticon are common motifs in privacy scholarship.²⁵ Orwell envisioned an all-powerful

America, N.Y. POST (Jan. 24, 2021, 8:22 PM), <https://nypost.com/2021/01/24/its-time-to-stand-up-against-the-muzzling-of-america/> [<https://perma.cc/DK5T-7Z4U>].

14. See Helen Buyinski, *Universities Quietly Develop Personal Covid-19 ‘Risk Score’ App in Bid to Mainstream Black Mirror-Style Social Credit for Students*, RT (May 6, 2020, 10:14 PM), <https://www.rt.com/op-ed/487964-social-credit-risk-score-universities/> [<https://perma.cc/N9LS-26PR>].

15. See Stella Morabito, *Democrats’ ‘Equality’ Act Would Be A Big Nudge Towards A U.S. Social Credit System*, FEDERALIST (Jan. 28, 2020), <https://thefederalist.com/2020/01/28/democrats-equality-act-would-be-a-big-nudge-towards-a-u-s-social-credit-system/> [<https://perma.cc/QR8S-7AHZ>].

16. See Sean Martin, *End of the World: Rise of Technology Is the ‘Mark of the Beast’—Claim*, EXPRESS (Aug. 6, 2020, 2:04 PM), <https://www.express.co.uk/news/weird/1319507/end-of-the-world-signs-apocalypse-technology-mark-of-the-beast-bible-news> [<https://perma.cc/F3L5-Z8LE>] (“A blog by doomsday site Signposts of the Times claims there are several signs in the world already which shows the beast, or the Antichrist, is plotting his mark. One sign is in the form of social credit systems in China, which closely monitors its citizens.”).

17. See Chris White, *U.S. Universities Roll Out China-Style Social Credit Tracking for Students*, NAT’L INT. (Dec. 30, 2019), <https://nationalinterest.org/blog/buzz/us-universities-roll-out-china-style-social-credit-tracking-students-109496> [<https://perma.cc/EHX2-GR2J>].

18. See RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 13 (2008).

19. See KEVIN WERBACH & DAN HUNTER, *FOR THE WIN* 8 (rev. & updated ed., 2020).

20. See SHOSHANA ZUBOFF, *THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER* 15 (2019).

21. See FRANK PASQUALE, *THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION* (2015).

22. See Xin Dai, *Enforcing Law and Norms for Good Citizens: One View of China’s Social Credit System Project*, 63 DEVELOPMENT 38, 38 (2020).

23. See BRUCE SCHNEIER, *DATA AND GOLIATH: THE HIDDEN BATTLES TO COLLECT YOUR DATA AND CONTROL YOUR WORLD* 1 (2015).

24. See Darrell M. West, *Techlash Continues to Batter Technology Sector*, BROOKINGS (Apr. 2, 2021), <https://www.brookings.edu/blog/techtank/2021/04/02/techlash-continues-to-batter-technology-sector/> [<https://perma.cc/A7C8-Q64V>].

25. See Cohen, *supra* note 3, at 184.

totalitarian state. Big Brother is watching us constantly through our televisions, through the people we encounter, and through countless other monitoring mechanisms. Bentham described a prison in which every inmate could be under surveillance at any time, without knowing it, from a central tower.²⁶ French philosopher Michel Foucault refracted Bentham's vision to describe modern society in general, where "surveillance is permanent in its effects, even if it is discontinuous in its action."²⁷ SCS strikes most Western observers as the fusion of Big Brother and the panopticon.²⁸

In addition to misunderstanding important details about SCS in China, this reaction misses a crucial distinction. Orwell's Big Brother was created to warn us of the chilling evils of socialism. Bentham *endorsed* the panopticon. He dreamed it up as a humane proposal for penal reform.²⁹ The panopticon was not surveillance itself; it was a particular instantiation of surveillance within architectures physical, legal, and cultural. China's new panopticon similarly offers pathways to embed surveillance within structures of governance. This is important for China, but not only for China. The United States, Europe, and other liberal democracies face a similar need to domesticate the genie of surveillance that those digital networked technologies have unleashed.

To be clear: SCS as deployed in China today is deeply problematic for privacy, human rights, and the rule of law. It is being used and abused in highly concerning ways.³⁰ These dangers could multiply as the SCS roll-out proceeds. But dismissing SCS as the personification of digital authoritarianism obscures important aspects of the system. Researchers have found that individuals on the ground in China, even in cities where SCS implementation is most advanced, are sanguine about its effects.³¹ Most of them explicitly endorse it.³² Even educated

26. *Id.*

27. See MICHEL FOUCAULT, *DISCIPLINE AND PUNISH: THE BIRTH OF THE PRISON* 201 (Alan Sheridan trans., Pantheon Books ed. 1977).

28. The system's emphasis on shaping voluntary compliance, and including rewards as well as punishments, also bears the hallmarks of the other great mid-20th century dystopian novel, *Brave New World*. See generally ALDOUS HUXLEY, *BRAVE NEW WORLD* (1932).

29. See JANET SEMPLE, *BENTHAM'S PRISON: A STUDY OF THE PANOPTICON PENITENTIARY* 323 (1993) (describing Bentham's vision of the panopticon as "a harbinger of humane competence").

30. See generally Botsman, *supra* note 11.

31. See Matsakis, *supra* note 10 ("I really think you would find a much larger percentage of Americans are aware of Chinese social credit than you would find Chinese people are aware of Chinese social credit," says Jeremy Daum, a senior research fellow at Yale Law School's Paul Tsai China Center in Beijing."). Daum has been a consistent voice pushing back on misconceptions about SCS, by translating and analyzing Chinese primary sources.

32. See Amy Hawkins, *Chinese Citizens Want the Government to Rank Them*, FOREIGN POL'Y (May 24, 2017, 11:45 AM), <http://foreignpolicy.com/2017/05/24/chinese-citizens-want-the-government-to-rank-them> [<https://perma.cc/USD7-LB93>] (stating that SCS in China is "being welcomed by a public fed up of not knowing who to trust"); Genia Kostka, *China's Social Credit Systems Are Highly Popular—For Now*, MERCATOR INST. FOR CHINA STUDS. (Sept. 17, 2018), <https://merics.org/en/analysis/chinas-social-credit-systems-are-highly-popular-now> [<https://perma.cc/UXJ7-H44X>]; Xinyuan Wang, *Commentary: Why China's Social Credit System Gets Thumbs-Up From Citizens*, CNA, <https://www.channelnewsasia.com/commentary/commentary-why-chinas-social-credit-system-gets-thumbs-citizens-1311596> (Dec. 31, 2019, 6:40 AM) [<https://perma.cc/NM3M-293V>].

elites scoff at the dystopian vision described in Western media.³³ In private, many don't disagree that China is prone to human rights violations, governmental abuses of power, and excessive restrictions on speech. They simply do not see SCS as a tool of that authoritarianism. Instead, they tend to emphasize its potential to reinforce fair legal enforcement and trustworthy market transactions.

China does not have a free press, and the state actively suppresses or manipulates information about controversial topics.³⁴ But SCS is generally not one of them. The major policy documents are publicly available in China; Chinese officials give interviews accurately discussing SCS developments; and news reports about SCS are not systematically censored. Thus, even beyond the educated Chinese who travel abroad or access censored content through virtual private network connections, there is no particular barrier to discovering information about SCS in China. The CCP is not hiding its ambitions. Thus, the absence of local opposition cannot simply be attributed to lack of awareness.

“Nosedive,” a 2016 episode of the British dystopian science fiction series *Black Mirror*, serves as the model of Social Credit for many in the West.³⁵ “Nosedive” imagines a world in which everyone constantly rates others on a five-point scale using a mobile application. Those with higher scores enjoy more than just admiration. They receive discounts on products, access to better apartments, and entrée to exclusive clubs. Those with low scores are sneered at in the public square and penalized in the marketplace. Predictably, most people become fixated on raising their scores. When the show's protagonist sees her efforts go awry, tragicomedy ensues.

Ironically, the “Nosedive” vision bears far greater similarity to existing ratings systems in the West than to China's SCS.³⁶ There is no mention of government involvement. The ratings are entirely subjective, and the sole source is other individuals. The system bears a family resemblance to social media applications such as Snapchat and Instagram which have driven a generation of

33. The author found this to be the case during an extended visit to several cities in China with a faculty group in summer 2019.

34. See Helen Davidson, *Journalists in China Face 'Nightmare' Worthy of Mao Era*, *Press Freedom Group Says*, *GUARDIAN* (Dec. 8, 2021, 1:48 AM), <https://www.theguardian.com/world/2021/dec/08/journalists-in-china-face-nightmare-worthy-of-mao-era-press-freedom-group-says> [https://perma.cc/CN22-DP2F].

35. See Gabrielle Bruney, *A 'Black Mirror' Episode Is Coming to Life in China*, *ESQUIRE* (Mar. 17, 2018), <https://www.esquire.com/news-politics/a19467976/black-mirror-social-credit-china/> [https://perma.cc/HC4C-PWY7]; Tom Connick, *Black Mirror's 'Nosedive' Episode Is About to Become Reality in China*, *NME* (Mar. 14, 2018), <https://www.nme.com/news/tv/black-mirrors-nosedive-episode-become-reality-china-2263309> [https://perma.cc/AGC9-MEJ6]; see Nguyen, *supra* note 11. The fact that the episode was released in 2016, around the time Western reporters first began covering SCS, may have contributed to the connection.

36. See Robert Delaney, *How Can the US Judge China's Social Credit System When American Consumers Are Chained to Big Tech?*, *S. CHINA MORNING POST* (Jan. 7, 2020, 3:00 AM), <https://www.scmp.com/comment/opinion/article/3044795/how-can-us-judge-chinas-social-credit-system-when-american> [https://perma.cc/5WKL-5S6W]; Mike Elgan, *Uh-Oh: Silicon Valley Is Building a Chinese-Style Social Credit System*, *FAST CO.* (Aug. 26, 2019), <https://www.fastcompany.com/90394048/uh-oh-silicon-valley-is-building-a-chinese-style-social-credit-system> [https://perma.cc/3VKH-82G3].

teenagers to distraction by fixating them on views and likes.³⁷ SCS, by contrast, includes no user-assigned ratings in its official formulation.³⁸ “Nosedive” is essentially the reputation system of Uber or eBay, expanded beyond the boundaries of one service. Those ratings are often cited as a positive example of new trust models that made possible the innovations of the “sharing economy.”³⁹ Largely unregulated “e-scores” and trust scores are also widely deployed by Western digital platforms and e-commerce providers to evaluate customers.⁴⁰

Black Mirror perceptively illuminates the risks when outcomes depend on ratings, yet those ratings are subjective, opaque, unpredictable, and unregulated.⁴¹ If anything, the Chinese government’s SCS initiative was developed *in response* to such systems.⁴² SCS is designed to reduce variability in legal enforcement. The initial systems, at least the government-designed ones, generally use simple rubrics for counting points rather than exotic deep learning algorithms.⁴³ SCS and derivative mechanisms are certainly at risk of errors, abuses, and unintended consequences. If the concern is that algorithmic decisions are dangerous, however, that is in no way limited to the Chinese examples.

SCS is in fact a diverse array of public and private activities, operating with limited coordination.⁴⁴ It is “a complex system of experimentation drawing on

37. See Jena Hilliard, *Social Media Addiction*, ADDICTION CTR. (Dec. 17, 2021), <https://www.addictioncenter.com/drugs/social-media-addiction/> [https://perma.cc/2D2T-RV7B].

38. Although the official SCS databases in China are based on government and corporate records, some third-party applications allow individuals to upload information. For example, Chengxin Chunyun, supported by several government agencies, provides an interface to report disruptive or illegal behavior on planes and trains. Reports are reviewed by officials, and if verified, become part of the individual’s Social Credit records. See Kendra Schaefer, *The Apps of China’s Social Credit System*, TRIVIUM USER BEHAVIOR (Oct. 14, 2019), <http://ub.triviumchina.com/2019/10/long-read-the-apps-of-chinas-social-credit-system/> [https://perma.cc/4WEN-6FNP].

39. See RACHEL BOTSMAN, WHO CAN YOU TRUST?: HOW TECHNOLOGY BROUGHT US TOGETHER AND WHY IT MIGHT DRIVE US APART 10 (2017); ARUN SUNDARAJARAN, THE SHARING ECONOMY: THE END OF EMPLOYMENT AND THE RISE OF CROWD-BASED CAPITALISM 35 (2016).

40. See CATHY O’NEILL, WEAPONS OF MATH DESTRUCTION 127–28 (2016); Nizan Geslevich Packin, *Social Credit: Much More Than Your Traditional Financial Credit Score Data*, FORBES (Dec. 13, 2019, 12:54 PM), <https://www.forbes.com/sites/nizangpackin/2019/12/13/social-credit-much-more-than-your-traditional-financial-credit-score-data> [https://perma.cc/23VZ-K6YE]; Nizan Geslevich Packin & Yafit Lev-Aretz, *On Social Credit and the Right to Be Unnetworked*, COLUMBIA BUS. L. REV. 339, 339 (2016).

41. Another recent fictionalized version of this point is Gary Shteyngart’s best-selling futuristic novel, *Super Sad True Love Story*. See Mary Kuntz, *Will Social Media Make Us Anti-Social? A Talk With Gary Shteyngart*, ATL. (Oct. 26, 2011), <https://www.theatlantic.com/business/archive/2011/10/will-social-media-make-us-anti-social-a-talk-with-gary-shteyngart/247373/> [https://perma.cc/HW4V-9WTB].

42. See Marcelo Thompson & Zhang Xin, *Justice & Social Credit 11* (unpublished manuscript), <https://docplayer.net/163405302-Justice-social-credit.html> [https://perma.cc/F57Y-C3QC] (“[I]t might be said that the *Black Mirror* episode is the antithesis of the SCS; that it is what one gets where no intervention by the State seeks to embed social values in a system of evaluation and filtration of individual attributes. . . .”).

43. See Rogier Creemers, *China’s Social Credit System: An Evolving Practice of Control 22* (2018) (unpublished manuscript), (available at <https://www.ssrn.com/abstract=3175792>) [https://perma.cc/ZTZ2-LG7R]; Martin Chorzempa, Paul Triolo & Samm Sacks, *China’s Social Credit System: A Mark of Progress or a Threat to Privacy?* 7, PETERSON INST. FOR INT’L ECON. (2018), <https://www.piie.com/system/files/documents/pb18-14.pdf> [https://perma.cc/2NHP-QPJL].

44. See Mareike Ohlberg, Shazeda Ahmed & Bertram Lang, *Central Planning, Local Experiments: The Complex Implementation of China’s Social Credit System*, MERICS CHINA MONITOR, Dec. 12, 2017, at 12; Qian Sun, *China’s Social Credit System Was Due by 2020 but Is Far from Ready*, ALGORITHM WATCH (Jan. 12, 2021), <https://algorithmwatch.org/en/story/chinas-social-credit-system-overdue/> [https://perma.cc/P8S8-AUVS].

legacies from both platform capitalism and socialist model making.”⁴⁵ Some SCS activity reflects formal initiatives of the Chinese state; much involves local governments, major corporations, and entrepreneurs pursuing their own objectives under the banner of the larger initiative.⁴⁶ SCS is a product of an authoritarian state, lacking strong rule-of-law guarantees such as an independent judiciary, democratic election of national leaders, or protections for free speech. It is real, not a figment of anti-Chinese xenophobia. Reducing SCS to Big Brother or *Brave New World*, however, differentiates it too starkly from the profit-maximizing surveillance ecologies of the West.⁴⁷ The technological, economic, and political forces that impel the development of SCS in China are not absent elsewhere.⁴⁸

Social Credit is best understood as an approach that seeks to organize society more tightly around data, feedback mechanisms, and enforcement systems.⁴⁹ The idea is that the treatment of an individual or organization should be based on facts: all the facts that can be assembled. Consequences of behavior should reflect considered determinations, rather than luck or human idiosyncrasies. That should be the case regardless of whether the context is financial (repayment of a credit card), legal (obeying a local ordinance prohibiting jaywalking) or social welfare (taking care of elderly relatives).

Such a mindset implies a number of constituent elements. These include: personal and economic data collection; legal and technical arrangements to integrate that data for analysis; analytics, ranging from simple point systems to predictive models using artificial intelligence, that make the raw data actionable; software applications that present those results to individuals, companies, and government actors; and rules about what results produce what consequences, in terms of both benefits and punishments. SCS is an evolving effort to develop, implement, and refine such components.

Framing SCS this way clarifies its connection to well-established Western mechanisms such as financial credit scoring, sentencing guidelines, and corporate reporting requirements. At its heart, SCS is a commitment to a form of regulatory technology (“RegTech”).⁵⁰ It transcends prior efforts in the shocking breadth of its ambition. Social credit is China’s vision of reinventing governance

45. Jonathan Bach, *The Red and the Black: China’s Social Credit Experiment as a Total Test Environment*, 71 BRIT. J. SOCIO. 489, 491 (2020).

46. See Sun, *supra* note 44.

47. See Delaney, *supra* note 36.

48. The research firm Future Markets published a 109-page report on the business opportunities for providing technology infrastructure to social credit systems around the world. *Social Credit Market by Physical and Cyber Infrastructure*, CISION: PR NEWSWIRE (Feb. 10, 2020, 3:10 PM), <https://www.prnewswire.com/news-releases/social-credit-market-by-physical-and-cyber-infrastructure-sensors-cameras-biometrics-computer-vision-software-machine-learning-data-analytics-apis-use-cases-applications-industry-verticals-and-regions-2019-2024-301001762.html> [<https://perma.cc/NT48-B24G>].

49. See Larry Catá Backer, *China’s Social Credit System: Data-Driven Governance for a “New Era,”* 118 CURRENT HIST. 209, 213 (2019).

50. See generally Douglas W. Arner, János Barberis & Ross P. Buckley, *FinTech, RegTech, and the Reconceptualization of Financial Regulation*, 37 NW. J. INT’L L. & BUS. 371 (2017) (examining RegTech as a new instrument for financial regulation).

around the technological capabilities of the 21st century. It is ultimately intended to apply to everyone, everything, and every action, aiming toward not only economic welfare and legal obedience, but also social harmony. That the current implementation falls well short of that mark should be emphasized. We should not, however, be blind to the immense potential of the model.

To unpack this phenomenon, I first relate the history and status of the Chinese SCS initiative. I then break down the major elements. This makes it possible to compare SCS with similar systems, now and in the future, elsewhere in the world. While other countries lack formal initiatives with the same label, SCS mimics or parallels developments in China and elsewhere. In this article, the official Chinese initiative is capitalized, or abbreviated as SCS. Other manifestations of social credit as a concept are rendered in lowercase.

B. *History of the Chinese Initiative*

“Social credit” is a formal initiative of the Chinese state, rendered in Mandarin as 社会信用体系.⁵¹ It involves a large number of governmental and private entities throughout the country, often working independently.⁵² Partly this reflects the Chinese approach of implementing major initiatives through parallel local and private experiments. And partly it is implicit in the design of SCS as a series of platforms that enable third parties to build solutions on their own. Thus, for example, some of the more notorious manifestations of SCS are not inherent or even necessarily intended by Chinese national authorities.⁵³ It is, nonetheless, appropriate to speak of social credit as a system. It is a coordinated effort, instigated and superintended by the state to achieve its public policy goals.⁵⁴

China historically lacked a database-driven consumer credit scoring regime similar to the one developed in the United States beginning in the late 1950s.⁵⁵ Credit scores and related mechanisms facilitated consumer and business lending, giving lenders reliable information on past behavior. Over time, the scoring models incorporated more data and became more technically sophisticated, while applications extended beyond lending to other contexts benefitting from data-

51. See *Understanding China's Social Credit System*, TRIVIUM CHINA (Sept. 23, 2019) [hereinafter TRIVIUM CHINA] <http://socialcredit.triviumchina.com/wp-content/uploads/2019/09/Understanding-Chinas-Social-Credit-System-Trivium-China-20190923.pdf> [https://perma.cc/J9V8-9PJJ]; Creemers, *supra* note 43; Chorzempa et al., *supra* note 43; Fan Liang, Vishnupriya Das, Nadiya Kostyuk & Muzammil M. Hussain, *Constructing a Data-Driven Society: China's Social Credit System as a State Surveillance Infrastructure*, 10 POL'Y & INTERNET 415, 422 (2018); Xin Dai, *Toward a Reputation State: The Social Credit System Project of China*, (June 10, 2018), available at <https://www.ssm.com/abstract=3193577> [https://perma.cc/SY2T-GP68].

52. See TRIVIUM CHINA, *supra* note 51.

53. See, e.g., Daithí Mac Síthigh & Mathias Siems, *The Chinese Social Credit System: A Model for Other Countries?*, 82 MOD. L. REV. 1034–71, 18 (2019) (“[U]nderstanding the Social Credit System as ‘merely’ a tool of state surveillance misunderstands the diversity of the current system . . .”).

54. See Bach, *supra* note 45, at 494 (describing the Chinese approach as “[l]et a hundred social credit scheme bloom,” echoing Mao Zedong’s famous “let a hundred flowers bloom” campaign)

55. See Adriene Hill, *A Brief History of the Credit Score*, MARKETPLACE (Apr. 22, 2014), <https://www.marketplace.org/2014/04/22/brief-history-credit-score/> [https://perma.cc/L6TK-2HAA].

driven assessment. Regulation followed to rein in abuses.⁵⁶ In the 1990s, the Chinese government identified its lack of a comparable system as an important gap in its economic reform agenda.⁵⁷

A pilot initiative began in 1999 under the auspices of the Chinese Academy of Sciences.⁵⁸ In 2003, in connection with China's accession to the World Trade Organization, the CCP Central Committee declared its intent to "constitute a social credit system with morality as its support, property rights as its foundation, and law as its guarantor."⁵⁹ This was apparently the first usage of the term in official Chinese documents. It evidently meant nothing more than a Western-style financial credit reporting system.⁶⁰

As is often the case in China, what began as imitation grew into something different than its progenitors. A number of social credit pilot projects were initiated in the 2000s. A 2007 pronouncement further developed the initiative.⁶¹ Then, in 2014, China's State Council, roughly equivalent to the President's Cabinet in the U.S., issued the "Notice Concerning Issuance of the Planning Outline for the Construction of a Social Credit System,"⁶² which substantially expanded the scope of the concept.⁶³

The 2014 Notice "remains the most authoritative blueprint for subsequent SCS efforts, and represented a major advance in political thought on social credit at the national level."⁶⁴ It envisioned a comprehensive system of data aggregation, analysis, and availability, extending well beyond traditional

56. See Fair Credit Reporting Act (FCRA), 15 U.S.C. §§ 1681–1681x; Equal Credit Opportunity Act (ECOA), 15 U.S.C. §§ 1691–1691f.

57. See Liang et al., *supra* note 51, at 424.

58. See Thompson & Xin, *supra* note 42, at 13; Sun, *supra* note 44.

59. See Chorzempa et al., *supra* note 43, at 3; CHINA INTERNET NEWS CTR., FULL REPORT OF THE THIRD PLENUM OF THE 16TH CENTRAL COMMITTEE OF THE CHINESE COMMUNIST PARTY (2003), <http://www.china.com.cn/chinese/zhuanti/sljzsqh/421625.htm> [<https://perma.cc/7HJJ-NW6Q>].

60. See Chorzempa et al., *supra* note 43, at 3.

61. Guowuyuan Bangong Ting Guanyu Shehui Xinyong Tixi Jianshe de Ruo Gan Yijian, 国务院办公厅关于社会信用体系建设的若干意见 [Opinions of the State Council Concerning the Construction of the Social Credit System], 国务院 [ST. COUNCIL] (Apr. 2, 2007), http://www.gov.cn/zwqk/2007-04/02/content_569314.htm [<https://perma.cc/JZS8-L2GH>].

62. See State Council Guiding Opinions Concerning Establishing and Perfecting Incentives for Promise-keeping and Joint Punishment Systems for Trust-Breaking, and Accelerating the Construction of Social Sincerity, CHINA COPYRIGHT & MEDIA (Oct. 18, 2016) [hereinafter 2014 State Council Notice], <https://chinacopyrightandmedia.wordpress.com/2016/05/30/state-council-guiding-opinions-concerning-establishing-and-perfecting-incentives-for-promise-keeping-and-joint-punishment-systems-for-trust-breaking-and-accelerating-the-construction-of-social-sincer/> [<https://perma.cc/T5GF-ZEUE>]. It was updated in 2019. Guiding Opinions on Accelerating the Building of the Social Credit System, providing further clarifications. See Guowuyuan Bangong Ting Guanyu Jiakuai Tuijin Shehui Xinyong Tixi Jianshe Goujian Yi Xinyong Wei Jichu de Xinxing Jianguan Jizhi de Zhidao Yijian, 国务院办公厅关于加快推进社会信用体系建设构建以信用为基础的新型监管机制的指导意见 [The General Office of the State Council on Accelerating the Construction of the Social Credit System], 国务院 [ST. COUNCIL] (July 16, 2019), http://www.gov.cn/zhengce/content/2019-07/16/content_5410120.htm [<https://perma.cc/ER4T-9F4J>].

63. See Chorzempa et al., *supra* note 43, at 4. While the 2014 State Council Notice described both the financial and social dimensions of credit scoring, it left their relationship somewhat ambiguous. See Sun, *supra* note 44.

64. See Creemers, *supra* note 43, at 12.

financial metrics.⁶⁵ By 2020, five major components of the system were scheduled to be operational: a legal and regulatory framework, credit assessment systems, a market of credit-based applications, and a set of reward and punishment mechanisms.⁶⁶ Substantial progress has been made, although the 2020 deadline proved unrealistic in some respects.⁶⁷ Just as there is no one point that represented the beginning of SCS activity, however, there is no specific date when the system will be “operational” or “completed.”⁶⁸

Since 2014, SCS development has proceeded on multiple tracks.⁶⁹ The People’s Bank of China (“PBOC”) created a central repository for financial credit reporting, analogous to Equifax or Experian in the United States, but government-operated.⁷⁰ It is launching a second-generation system that includes not only information about income and past payment behavior, but also civil and criminal case information; administrative punishments; professional qualifications; and awards won.⁷¹ Social credit language has been incorporated into a large number of laws and regulations.⁷² Government agencies have established new data architectures, information technology systems, information-sharing agreements, and public-facing websites. And a number of cities have launched experiments to create local versions of social credit, often going beyond the elements described by national authorities.⁷³ Two-thirds of China’s regional governments are reportedly developing social credit initiatives.⁷⁴

As of November 2019, according to Meng Wei, deputy director of the policy research office of the National Development and Reform Commission

65. See Chorzempa et al., *supra* note 43, at 3 (“The 2014 plan . . . considerably expanded the social credit concept, shaping behavior beyond what most countries consider ‘‘credit’ . . .”).

66. See 2014 State Council Notice, *supra* note 62; Creemers, *supra* note 43, at 12.

67. See Sun, *supra* note 44.

68. See Kendra Schaefer, *The Year in Social Credit: Where Is Corporate Social Credit Going in 2020 and Beyond?*, CHINA BUS. REV. (Dec. 17, 2019), <https://www.chinabusinessreview.com/the-year-in-social-credit-where-is-corporate-social-credit-going-in-2020-and-beyond/> [<https://perma.cc/FZ34-GLVM>].

69. See Chungcheng Liu, *Multiple Social Credit Systems in China*, 21 ECON. SOCIO.: EUR. ELEC. NEWSL. 22, 27 (2019) (“Most of the nationwide governmental SCSs are controlled separately by different central government agencies and do not connect with each other. The only exception is the relationship between PBOC’s financial credit system and the discredited judgment debtor blacklist.”).

70. See *id.* at 23.

71. See *See China’s Second-Generation Financial Credit Reporting System May Come Online Jan 20*, TRIVIAM SOC. CREDIT (Jan. 14, 2020) [<https://perma.cc/UV6H-GQLU>].

72. See, e.g., Kristin Tate, *Coming Soon: America’s Own Social Credit System*, HILL (Aug. 3, 2021, 9:00 AM), <https://thehill.com/opinion/finance/565860-coming-soon-americas-own-social-credit-system> [<https://perma.cc/U9LK-5PXJ>] (“Just last week, the British government announced its own version of a health social credit system.”).

73. See Simina Mistreanu, *Life Inside China’s Social Credit Laboratory*, FOREIGN POL’Y (Apr. 3, 2018), <https://foreignpolicy.com/2018/04/03/life-inside-chinas-social-credit-laboratory> [<https://perma.cc/NTU9-GK5G>]. One reason Western coverage often overstates the dangers of SCS is that reports focus on unrepresentative or poorly-designed local pilots. See Song, *supra* note 10 (“Indeed, China’s social credit system could result in alarming outcomes if it does not learn from the missteps of local pilot programs.”).

74. Ye MinShen (叶旻坤) Fagaiwei Zuzhi Zhaokai Shehui Xinyong Lifea Zuotan Hui (发改委组织召开社会信用立法座谈会) [The National Development and Reform Commission Organized a Forum on Social Credit Legislation] Di Yi Caijin (第一财经) (Sept. 02, 2019, 10:02 AM), <https://www.yicai.com/news/100316178.html> [<https://perma.cc/W4UC-TPCZ>].

(“NDRC”; China’s economic planning agency), there were over 37 billion records in the SCS.⁷⁵ That same month, the National People’s Congress, China’s national legislature, stated that a comprehensive Social Credit law was under development.⁷⁶ NDRC issued a proposed national set of Social Credit rules for public comment in July 2020.⁷⁷ In December 2020, the State Council issued new guidance placing further legal limits on SCS implementation.⁷⁸ Most recently, in March 2022, the General Office of the Central Committee of the Communist Party of China (CCCPC) and the General Office of the State Council outlined 23 policies for applying social credit to enhance transparency and accountability in the business environment.⁷⁹ According to the PBOC, records on 1.1 billion individuals and 60 million organizations had been incorporated into SCS by 2020.⁸⁰

With the outbreak of Covid-19, China repurposed the infrastructure of SCS for its containment and tracing efforts.⁸¹ Several local Chinese authorities announced that Chinese citizens who failed to report coronavirus symptoms could find themselves on social credit blacklists.⁸² The disruption associated with

75. Guojia Fagaiwei: Jianchi Yifa Jianshe Shehui Xinyong Tixi Fangfan Xinyong Jizhi Lanyong, 国家发展改革委：坚持依法建设社会信用体系 防范信用机制滥用 [National Development and Reform Commission: Adhere to the Construction of a Social Credit System in Accordance with the Law to Prevent the Abuse of the Credit Mechanism], Sohu (搜狐) (Aug. 19, 2019, 5:09 PM), http://www.sohu.com/a/334806382_481016 [https://perma.cc/N966-PQE7].

76. Zhu Ningning (朱宁宁), Quanguo Renda Caijing Wei Jianyi Jiakuai Shehui Xinyong Fa Lifa Jindu (全国人大财经委建议加快社会信用立法进度) [The National People’s Congress Finance and Economics Committee Proposes to Speed up the Legislative Progress of the Social Credit Law], Quanguo Renmin Daibiao Dahui (全国人民代表大会) [NAT. PEOPLE’S CONG.] (Nov. 5, 2019, 10:26 AM) <http://www.npc.gov.cn/npc/c30834/201911/b4826cce51b5406788c26b2de2155e29.shtml> [https://perma.cc/K9SQ-WEHW].

77. See *Social Credit & the Law*, CHINA L. TRANSLATE (July 29, 2020) [hereinafter CHINA L. TRANSLATE] <https://www.chinalawtranslate.com/en/social-credit-the-law/> [https://perma.cc/9MBN-MU82].

78. See Zichen Wang, *Beijing Reins in the Social Credit System to Prevent Official Abuse, Avoid Collateral Damage*, PEKINGNOLOGY (Nov. 27, 2020), <https://pekingnology.substack.com/p/beijing-reins-in-the-social-credit> [https://perma.cc/J3G8-JNU8] (providing details on the provisions prior to their official release); *China Issues Rules on Social Credit System Amid Public Concerns*, REUTERS (Dec. 24, 2020, 4:18 AM), <https://www.reuters.com/article/china-economy-data/china-issues-rules-on-social-credit-system-amid-public-concerns-idUSL4N2J417K> [https://perma.cc/4VX8-W2NL].

79. Zhu Yu (朱豫), Zhonggong Zhongyang Bangong Ting Guowuyuan Bangong Ting Yinfa "Guanyu Tuijin Shehui Xinyong Tixi Jianshe Gao Zhiliang Fazhan Cuijin Xingcheng Xin Fazhan Geju de Yijian (中共中央办公厅 国务院办公厅印发《关于推进社会信用体系建设高质量发展促进形成新发展格局的意见》) [The General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued the “Opinions on Promoting the Construction of a Social Credit System with High-Quality Development and Promoting the Formation of a New Development Pattern.”], (Mar. 29, 2022, 6:49 PM), http://www.gov.cn/zhengce/2022-03/29/content_5682283.htm [https://perma.cc/YZ8G-SE5N].

80. See *China’s Social Credit System Covers 1.1 Billion People by End 2020*, GLOB. TIMES (Jan. 26, 2021, 12:45 PM), <https://www.globaltimes.cn/page/202101/1213955.shtml> [https://perma.cc/KZN6-2RVS]. This number likely covers all credit records, including purely financial data.

81. See Paul Mozur, Raymond Zhong & Aaron Krolik, *In Coronavirus Fight, China Gives Citizens a Color Code, With Red Flags*, N.Y. TIMES, <https://www.nytimes.com/2020/03/01/business/china-coronavirus-surveillance.html> (July 26, 2021) [https://perma.cc/3Z89-QNLA]. See generally Adam Knight & Rogier Creemers, *Going Viral: The Social Credit System and COVID-19* (Jan. 21, 2021) (unpublished manuscript) (available at <https://ssrn.com/abstract=3770208>) [https://perma.cc/GTC3-MN79].

82. See Isobel Asher Hamilton, *Chinese Citizens Who Conceal Any Coronavirus History Are Being Punished Using the Country’s Dystopian Social Credit System*, BUS. INSIDER (Mar. 17, 2020, 7:09 AM), <https://>

the epidemic also slowed implementation of SCS. Because many Chinese struggled to meet financial obligations such as loans and tax payment due Covid-19 restrictions, the government created temporary exemptions from the system's requirements.⁸³

C. Major Elements of the System

There are several manifestations of social credit in China. This is a common pattern for major Chinese government initiatives.⁸⁴ Central authorities and leaders define high-level objectives through speeches and formal policy documents. These stimulate experimentation by bureaucrats, hoping success stories will lead to promotions. Private firms are also encouraged to move in the same direction through government subsidy programs, as well as direct orders in the case of state-owned enterprises. The result is often a patchwork of overlapping activity, which is coordinated or centralized over time.⁸⁵ In the case of SCS, the local and private efforts complement the national project.⁸⁶ Only the governmental components, however, incorporate the force of law, which is what gives rise to fears about the system's Orwellian potential. Moreover, blacklists and penalties, which generate the greatest concern, are primarily elements of the national system.

SCS covers three domains: individuals, corporations, and government entities.⁸⁷ Each involves separate data repositories, although they are connected.⁸⁸ An individual with poor Social Credit metrics who serves as a CEO

www.businessinsider.com/china-hiding-coronavirus-punishable-social-credit-system-2020-3 [https://perma.cc/6HF9-FBPK]; Rong Cheng (荣成), Shandong Rongcheng Shehui Xinyong Jiangcheng Bingju Zhuli Da Ying Yiqing Fang Kong Zuji Zhang (山东荣成: 社会信用奖惩并举 助力打赢疫情防控阻击战) [Shandong Rongcheng: Social Credit Awards and Punishments Help to Win the Fight Against Epidemic Prevention and Control], Zhong Hong Wang (中宏网) <https://www.zhonghongwang.com/show-382-166675-1.html> [https://perma.cc/8T8T-6SLG]; Masha Borak, *Hiding Your Coronavirus History Can Give You Bad Social Credit*, ABACUS CHINA TECH CITY (Feb. 7, 2020, 5:28 AM), <https://www.abacusnews.com/china-tech-city/hiding-your-coronavirus-history-can-give-you-bad-social-credit/article/3049509> [https://perma.cc/25XZ-RU6Q].

83. See Alexander Chipman Koty, *China's Social Credit System: COVID-19 Triggers Some Exemptions, Obligations for Businesses*, CHINA BRIEFING (Mar. 26, 2020), <https://www.china-briefing.com/news/chinas-social-credit-system-covid-19-triggers-some-exemptions-obligations-businesses/> [https://perma.cc/7FLG-WFBD]; Acello, *supra* note 10 (suggesting that the planned 2020 completion of the initial SCS rollout was “[a]mong the casualties of COVID-19”).

84. See Sebastian Heilmann, *From Local Experiments to National Policy: The Origins of China's Distinctive Policy Process*, 59 CHINA J. 1 (2008); Sebastian Heilmann, *Maximum Tinkering Under Uncertainty: Unorthodox Lessons from China*, 35 MODERN CHINA 450 (2009).

85. See Sun, *supra* note 44 (quoting several Chinese experts decrying the “chaos” of SCS activities).

86. See *id.*

87. As of 2017, more than 80% of the data in the Chinese government's main social credit repository was actually corporate information, rather than data about individuals. See Mirjam Meissner, *China's Social Credit System*, MERCATOR INST. FOR CHINA STUDS. (May 24, 2017), https://www.merics.org/sites/default/files/2017-09/China%20Monitor_39_SOCS_EN.pdf [https://perma.cc/DP32-2C77]. This corporate SCS could represent a new approach to corporate governance and compliance, or it might be another form of entry barrier for foreign firms in China. See MICHAEL D. SUTHERLAND, CONG. RSCH. SERV., CHINA'S CORPORATE SOCIAL CREDIT SYSTEM 1–2 (Oct. 24, 2019). However, such topics are beyond the scope of this paper.

88. *Id.*

or corporate legal representative might reflect poorly on that company. The reverse could also be true: executives of a blacklisted firm might find its sanctions follow them to new positions.

At the core of the national SCS for individuals is the National Credit Information Sharing Platform (“NCISP”), a data aggregation framework that so far incorporates records from more than forty government agencies.⁸⁹ This makes it possible, for example, to see in one place whether an individual who failed to make child support payments also has traffic violations or an arrest record. This system is limited to government administrative records; it does not include data from financial transactions, e-commerce activity, or medical information. Figure 1.2-C below provides a full list, from a September 2019 report by the consulting firm Trivium China.⁹⁰

FIG 1.2-C: Data collected on individuals

<p>BASIC IDENTITY INFORMATION</p> <ul style="list-style-type: none"> • Name • ID number • Gender • Other basic identifying data <p>EMPLOYMENT INFORMATION</p> <ul style="list-style-type: none"> • Professional qualifications • Registration as legal representative of any company <p>FINANCIAL INFORMATION</p> <ul style="list-style-type: none"> • Tax payment history • Bank loan repayment record • Social security payment • Utility and telecom bill payment history • Child support payment history <p>LEGAL HISTORY</p> <ul style="list-style-type: none"> • Civil and criminal court records • Failure to carry out court-ordered judgements • Incarceration • Recidivism <p>POLITICAL DATA</p> <ul style="list-style-type: none"> • Communist Party membership and status 	<p>REGULATORY AND LEGAL VIOLATIONS</p> <ul style="list-style-type: none"> • Traffic violations • Violations of professional ethics • Evasion of military duty • Academic fraud • Patent or copyright fraud • Telecom scamming • Insurance fraud • Lying or cheating on examinations • Serving as the legal representative of a company found in violation of regulations <p>CIVIC BEHAVIOR</p> <ul style="list-style-type: none"> • City volunteering • Blood and bone marrow donation • Charitable contributions • Timely return of library books • “Good deeds” <p>OUTSTANDING ACHIEVEMENT RECORDS</p> <ul style="list-style-type: none"> • Awards and recognition received for innovation, patents and inventions • Literary awards • Heroism awards • Various “good citizen” awards
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Two important points to note from this list. First, all of the information already exists in government databases. China collects information that other governments do not—for example, membership in the CCP is integrated into the state in a way that political parties elsewhere are not. It is an authoritarian state

89. *Id.*

90. TRIVIUM CHINA, *supra* note 51, at 11.

that aggressively embraces surveillance of its citizens.⁹¹ SCS, however, is about what China does with information it has already collected.⁹² Second, the final two categories of the list are positive information, ranging from formal civic awards to blood donation. SCS has two sides: it seeks to prevent behavior deemed undesirable, and encourage behavior deemed desirable.

Contrary to popular belief, China's SCS today does not involve a numeric score for each citizen.⁹³ There are financial creditworthiness ratings, as in the other countries. And there are scores generated by various government agencies for activity within their domains.⁹⁴ On top of this, some Chinese municipalities have city-based scores for their implementations of social credit.⁹⁵ These, however, are not connected to any national consequences.⁹⁶ Finally, there are private "social credit" scoring applications, which may or may not incorporate governmental data.⁹⁷ SCS is better understood as a symphony of feedback, not a single universal score.⁹⁸

Sesame (Zhima) Credit, implemented by Ant Financial (a subsidiary of Chinese e-commerce giant Alibaba), did provide customers with a three-digit score.⁹⁹ Many Western accounts confuse the Sesame Credit service with the overall SCS. This was a private system with no special access to government-collected data, however, and no power beyond offering preferential access to

91. See Paul Mozur & Aaron Krolik, *A Surveillance Net Blankets China's Cities, Giving Police Vast Powers*, N.Y. TIMES (Dec. 17, 2019), <https://www.nytimes.com/2019/12/17/technology/china-surveillance.html> [<https://perma.cc/CT6G-5WFT>].

92. The proposed NDRC rules for SCS formalize the limitation to government-collected data, or other information subject to explicit consent and purpose limitation. See CHINA L. TRANSLATE, *supra* note 77.

93. See Jeremy Daum, *Untrustworthy: Social Credit Isn't What You Think It Is*, in A DYSTOPIAN FUTURE? THE RISE OF SOCIAL CREDIT SYSTEMS 1, 40 (Liav Orgad and Wessel Reijers, eds., 2019) (pointing out that "neither the 5-year planning document initiating the establishment of China's Social Credit System nor any other higher-level social credit legal authority mentions a social credit score"); Horsley, *supra* note 10; Dai, *supra* note 22, at 38; Chorzempa et al., *supra* note 43, at 2; Schaefer, *supra* note 38 ("China's central government doesn't see its own role in the SCS as an assigner of scores, but rather as a record keeper. . . .").

94. See Bach, *supra* note 45, at 493–94 ("There are multiple types of credit ratings accessible and living together on the national platform, generated from different sources, and most likely arrived at using different methods.").

95. See Schaefer, *supra* note 38; Severin Engelmann, Mo Chen, Lorenz Dang & Jens Grossklags, *Blacklists and Redlists in the Chinese Social Credit System: Diversity, Flexibility, and Comprehensiveness*, AIES '21, May 19–21, 2021, at 79, <https://dl.acm.org/doi/pdf/10.1145/3461702.3462535> [<https://perma.cc/4AP4-NM7L>].

96. Schaefer, *supra* note 38. Several cities are, however, establishing reciprocal agreements to extend the effect of their local SCS systems.

97. *Id.*

98. See Sun, *supra* note 44 (claiming that "information sharing is very difficult" among local credit information platforms in China).

99. See e.g., Creemers, *supra* note 43, at 22–23; Botsman, *supra* note 11; Nicole Kobie, *The Complicated Truth About China's Social Credit System*, WIRED UK (June 5, 2018), <http://www.wired.co.uk/article/china-social-credit> [<https://perma.cc/SP3U-MRPA>]. Tencent, Alibaba's leading Chinese competitor and the parent company of the WeChat messaging application, also launched a private social credit application which quickly shut down. See Eva Xiao, *Tencent's New Credit System to Use Payments, Social Data*, TECHINASIA (Jan. 31, 2018), <https://www.techinasia.com/tencent-credit-launch> [<https://perma.cc/XZ9P-VFS6>].

Alibaba services.¹⁰⁰ It was launched subject to a trial license from the Chinese government, which expired in 2018 and was not renewed.¹⁰¹ Alibaba and other major Chinese technology firms were subsequently directed to become partners in a new state-sponsored firm, Baihang Credit, as the exclusive provider of a national credit scoring application.¹⁰² Baihang launched its service in January 2020, but it has had difficulty getting access to and integrating private data from Ant Financial and other partners.¹⁰³ As of mid-2020, it has amassed records on 130 million people, a very large number but less than 10% of China's population.¹⁰⁴ Baihang's difficulties, which are not atypical even between government agencies, belie the notion that SCS will soon seamlessly incorporate all personal data collected in China.

Rather than a universal score, the official SCS relies primarily on blacklists and redlists.¹⁰⁵ A blacklist is a published list of individuals or organizations who failed to meet certain requirements, or were subject to certain punishments.¹⁰⁶ The first major blacklist, predating the State Council's 2014 planning document, was for those who failed to pay fines issued by the Supreme People's Court.¹⁰⁷

100. See Masha Borak, *China's Social Credit System: AI-Driven Panopticon or Fragmented Foundation for a Sincerity Culture?*, TECHNODÉ (Aug. 23, 2017), <https://technode.com/2017/08/23/chinas-social-credit-system-ai-driven-panopticon-or-fragmented-foundation-for-a-sincerity-culture/> [https://perma.cc/N72G-U6U7] (including a correction that Sesame Credit had no punitive measures for low scores, and did not affect receiving loans).

101. See Chorzempa et al., *supra* note 43, at 5. Zhima still operates as a private service to evaluate credit determinations for Ant Financial, based on activity within the Alibaba ecosystem. Tencent launched a competitor in mid-2020. See Hu Yue and Guo Yingzhe, *Tencent Launches Credit Scoring System Based on WeChat Purchases*, CX TECH NEWS (June 8, 2020, 1:31 PM), <https://www.caixinglobal.com/2020-06-08/tencent-launches-credit-scoring-system-based-on-wechat-purchases-101564336.html> [https://perma.cc/ZKT3-F7JW].

102. See Lea Nonninger, *Here's Why China Is Concerned About Tencent and Alibaba's Credit Scoring Efforts*, BUS. INSIDER (Feb. 6, 2018, 8:37 AM), <http://uk.businessinsider.com/china-tencent-and-alibabas-new-credit-scoring-solution-2018-2> [https://perma.cc/MZ67-NFDQ]; Ohlberg et al., *supra* note 44, at 4; Dai, *supra* note 51, at 17–18; Many Koetse, *Baihang and the Eight Personal Credit Programmes: A Credit Leap Forward*, WHAT'S ON WEIBO (June 10, 2018), <https://www.whatsoneibo.com/baihang-and-the-eight-personal-credit-programmes-a-credit-leap-forward/> [https://perma.cc/6YML-QQ89]. In December 2020, the People's Bank of China accepted an application from a second provider, Puda Credit, jointly owned by the Beijing local government and major tech firms JD.com, Xiaomi, and Megvii. See Coco Feng, *Xiaomi, JD.com-backed Firm on Track to Become China's Second Personal Credit Ratings Agency*, S. CHINA MORNING POST (Dec. 9, 2020, 4:42 PM), <https://www.scmp.com/tech/policy/article/3113198/xiaomi-jdcom-backed-firm-track-become-chinas-second-personal-credit> [https://perma.cc/MMM9-GMTB].

103. See Yuan Yang and Nian Liu, *Alibaba and Tencent Refuse to Hand Loans Data to Beijing*, FIN. TIMES (Sept. 18, 2019), <https://www.ft.com/content/93451b98-da12-11e9-8f9b-77216ebe1f17> [https://perma.cc/68W6-SXG7]; Yuan Yang, *Does China's Bet on Big Data for Credit Scoring Work?*, FIN. TIMES (Dec. 19, 2019), <https://www.ft.com/content/ba163b00-fd4d-11e8-ac00-57a2a826423e> [https://perma.cc/RL5T-LBTG].

104. *Baihang Credit Amasses Data on 130 Million Borrowers in China*, CHINA BANKING NEWS (July 23, 2020), <https://www.chinabankingnews.com/2020/07/23/baihang-credit-amasses-data-on-130-million-borrowers-in-china> [https://perma.cc/GUM5-FHYR].

105. Dai, *supra* note 102, at 25.

106. *Id.* at 26.

107. Zuigao Renmin Fayuan Guanyu Gongbu Shixin Bei Zhixing Ren Mingdan Xini de Ruogan Guiding (最高人民法院关于公布失信被执行人名单信息的若干规定) [Several Provisions of the Supreme People's Court on Announcement of the List of Dishonest Persons Subject to Enforcement, Interpretation No. 17 [2013]] (promulgated by the Sup. People's Ct. Gaz., July 16, 2013, effective Oct. 1, 2013) SUP. PEOPLE'S CT. GAZ., Oct. 1, 2013, www.lawinfochina.com/Display.aspx?lib=law&Cgid=207020&EncodingName=gb2312 [https://

Many others were created subsequently. Because national and local government departments have authority to establish their own blacklists, many have already been created.¹⁰⁸ While many involve serious criminal activity such as tax evasion, others cover relatively minor misconduct.¹⁰⁹ There are blacklists for major violators of financial regulations; tax evaders; smugglers violating import/export rules; employers owing unpaid wages to migrant workers; and passengers who have committed serious offenses on planes or trains.¹¹⁰

A blacklist (or a redlist, the equivalent for desirable behavior) simplifies and regularizes information. Information that someone failed to pay a court fine may be searchable in a database, but a blacklist reduces that fact to a binary.¹¹¹ That makes it easy to feed that information into another system. The blacklists and redlists provide standardized mechanisms for rewards and punishments, which can be imposed either by courts as an additional sanction, or by agencies for conduct within their purview. For example, those on the transport blacklist may be prohibited from purchasing rail or airplane tickets. As of mid-2019, such restrictions had stopped 14 million Chinese citizens—approximately 1% of the population—from purchasing nearly 27 million flights and six million high-speed rail tickets, according to the NDRC.¹¹²

SCS blacklists and redlists form the backbone of the Joint Punishment System, a series of reciprocal agreements between government agencies.¹¹³ Just as the infrastructure dimension of SCS makes it possible for agencies to share data, these arrangements share blacklists and redlists. Someone on the transport blacklist might thus receive punishments when attempting to take out a loan, or a tax evader might experience limits on travel. Redlists can similarly generate benefits in other contexts.¹¹⁴ “Grade A” taxpayers receive customs fee waivers and low-interest loans, in addition to the “home” benefits offered by the tax collection authority.¹¹⁵ So far, these join punishments or rewards are imposed

perma.cc/3TMK-T3NZ]. Compliance with judicial orders is a particular problem in China today. Enhancing it is therefore a priority for SCS.

108. The Congressional Research Service claimed there were “hundreds of official blacklists” as of October 2019, although the source of this estimate was not provided. SUTHERLAND, *supra* note 87, at 1.

109. *Id.*

110. See TRIVIUM CHINA, *supra* note 51, at 13.

111. *Id.* at 15.

112. See Orange Wang, *China’s Social Credit System Will Not Lead to Citizens Losing Access to Public Services*, *Beijing Says*, S. CHINA MORNING POST (July 19, 2019, 2:15 PM), <https://www.scmp.com/economy/china-economy/article/3019333/chinas-social-credit-system-will-not-lead-citizens-losing> [https://perma.cc/92P7-AU8Z].

113. See SUTHERLAND, *supra* note 87.

114. So far, however, redlists are significantly more vague and have less-significant consequences than blacklists. See Severin Engelmann, Mo Chen, Felix Fischer, Ching-yu Kao & Jens Grossklags, *Clear Sanctions, Vague Rewards: How China’s Social Credit System Currently Defines “Good” and “Bad” Behavior*, PROCEEDINGS OF CONF. ON FAIRNESS, ACCOUNTABILITY, & TRANSPARENCY, Jan. 2019, at 69, <https://dl.acm.org/doi/10.1145/3287560.3287585> [https://perma.cc/DJX5-EX6R].

115. SUTHERLAND, *supra* note 87, at 1.

individually by participating agencies; there is no national blacklist that automatically rolls up all the others.¹¹⁶

The impact of SCS to date is difficult to assess.¹¹⁷ The components are still in the process of deployment.¹¹⁸ The multifaceted nature of the system means that people in different parts of China, or interacting with different services under the SCS umbrella, will have distinct experiences. And China does not guarantee freedom of speech, making accurate opinion surveys difficult. Nonetheless, researchers have begun to collect data on the effects of SCS on the ground.

In a 2018 survey of 2,200 Chinese internet users, three-quarters reported interacting with an SCS application, although mostly with commercial services rather than government-run ones.¹¹⁹ But 94% of them reported a behavior change in response to an SCS assessment, rising to 99% for those interacting with a government-run SCS.¹²⁰ Interestingly, positive incentives of prestige and recognition (as well as financial benefits) were more significant in changing behavior than punishments.¹²¹ And although various objections were raised in the interviews the researchers conducted with subjects, 93% of survey respondents said they considered the SCS ratings fair.¹²²

III. SCS AS A REGULATORY SYSTEM

If SCS is not a *Black Mirror* episode manifested in reality, how best to conceptualize the program? It incorporates surveillance and the authoritarian rule

116. There are some references in Chinese documents to plans for a “heavily distrusted entities list.” It might serve a kind of universal national blacklist for corporations, but not for individuals. *See id.* The possibility of a “heavily distrusted” list takes on added significance in light of the U.S.-China trade war. The Trump Administration placed major Chinese firms such as Huawei on the American “entities list” in 2019, restricting U.S.-based companies from doing business with them. China responded by threatening similar action against American firms such as FedEx and Cisco. *See Rachel Siegel & Hannah Denham, FedEx Files Suit Against Commerce Department Over Huawei Restrictions*, WASH. POST (June 24, 2019), <https://www.washingtonpost.com/business/2019/06/24/china-demands-explanation-fedex-returned-huawei-package-heightening-trade-tensions/> [<https://perma.cc/E4XR-USH4>].

117. *See Genia Kostka & Lukas Antoine, Fostering Model Citizenship: Behavioral Responses to China’s Emerging Social Credit Systems*, POL’Y & INTERNET 1, 6 (2019) (“Very little is known about the extent to which these different SCSs have already been woven into the fabric of Chinese citizens’ everyday lives.”).

118. A significant percentage of Chinese are still unfamiliar with SCS. *See Matsakis, supra* note 10.

119. *See Kostka & Antoine, supra* note 117, at 11. Eighty percent of respondents used at least one commercial SCS, but only 7% used a local government SCS. This survey was conducted while Sesame Credit and Tencent Credit were still operating, so results today might be different.

120. *See id.* at 12. The most common behavior changes included using mobile payment apps more often, following traffic regulations, adjusting shopping behavior, donating money, and playing online games less often. Seventeen percent reported unfriending someone on social media who had a low score. This gives some credence to critics who view SCS as a dangerous form of state interference in interpersonal relationships. *See Dirnhuber, supra* note 10. As noted, however, the survey results seem largely driven by the commercial SCS applications, where scores had direct consequences in a consumer financial setting.

121. *See Kostka & Antoine, supra* note 117, at 21. Again, this may reflect the dominance of Sesame Credit and Tencent Credit in the results, since those services generally lack punishments beyond less-desirable financial terms. It might also reflect the structure of initial local SCS applications, which tend to emphasize carrots over sticks. *See Dev Lewis, All Carrots and No Sticks: A Case Study on Social Credit Scores in Xiamen and Fuzhou*, MEDIUM (Oct. 3, 2019), <https://medium.com/berkman-klein-center/social-credit-case-study-city-citizen-scores-in-xiamen-and-fuzhou-2a65feb2bbb3> [<https://perma.cc/DP3H-Y7P7>].

122. *See Kostka & Antoine, supra* note 117, at 20.

of the CCP, but those were well-established in China already. Rather, SCS is best understood as a *regulatory* system.¹²³ It is designed to promote compliance with both legal requirements and social norms.¹²⁴ It will even regulate how the state itself engages in its enforcement activities.

A. *Algorithmic Governance*

SCS represents the intersection of two global regulatory trends: the migration from human to digital decision-making, and the shift from top-down regulation toward more sophisticated conceptions of governance.¹²⁵ Governance is the process of collective decision-making that produces social norms and institutions.¹²⁶ In the legal context, it is an approach to achieve desired public policy objectives through delegated rules and incentive structures.¹²⁷ SCS represents the world's preeminent effort by a nation-state to achieve governance objectives through data collection and software-driven analysis of that data.¹²⁸ It pushes further, but at the root, it parallels algorithmic regulatory mechanisms springing up in many other contexts. As such, SCS generates both benefits and risks wholly distinct from its repressive potential in the Chinese context. As Backer summarizes, SCS is an effort to shift the focus and forms of governance from law and regulation to metrics and algorithm.¹²⁹

1. *The Algorithmic Turn*

In recent decades, there has been a dramatic intellectual shift in the administrative state, away from command-and-control mandates and toward regulation more broadly as a governance process.¹³⁰ This “new governance” orientation now shapes both academic analysis and regulatory practices. With the growing power of digital platforms such as Google, Facebook, and Amazon, scholars turned their attention to how algorithmic systems—with rules encoded

123. See Thompson & Xin, *supra* note 42, at 3 (endorsing “regulatory mechanisms. . . that safeguard the appropriate recognition of individual attributes,” and observing that, “[t]he SCS is one such mechanism, and certainly, so far, the most prominent one”).

124. Both formal rules and informal attachments, commitments, and beliefs shape behavior. See William S. Laufer & Diana C. Robertson, *Corporate Ethics as Social Control*, 16 J. BUS. ETHICS 1029, 1031 (1997).

125. See Stefan Brehm & Nicholas Loubere, *China's Dystopian Social Credit System Is a Harbinger of the Global Age of the Algorithm*, CONVERSATION (Jan. 15, 2018, 6:35 AM), <http://theconversation.com/chinas-dystopian-social-credit-system-is-a-harbinger-of-the-global-age-of-the-algorithm-88348> [<https://perma.cc/HYW9-VNMR>]; EUROPEAN CHAMBER OF COMMERCE IN CHINA, *THE DIGITAL HAND: HOW CHINA'S CORPORATE SOCIAL CREDIT SYSTEM CONDITIONS MARKET ACTORS* 1, 2 (2019).

126. See David Levi-Faur, *Regulation & Regulatory Governance*, in David Levi-Faur, *HANDBOOK ON THE POLITICS OF REGULATION* 1–20 (2011).

127. *Id.*; John Braithwaite, Cary Coglianese & David Levi-Faur, *Can Regulation and Governance Make a Difference?*, 1 REGUL. & GOVERNANCE 1, 1 (2007).

128. See Song, *supra* note 10.

129. Larry Catá Backer, *And an Algorithm to Entangle them All? Social Credit, Data Driven Governance, and Legal Entanglement in Post-Law Legal Orders* 9 (Research Paper No. 05-2020, 2020).

130. See, e.g., Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 351 (2004); Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 10 (1997).

in complex networks of software applications—could be important instruments of governance.¹³¹ The same techniques employed the private sector are being adopted as regulatory tools. Nearly half of U.S. federal administrative agencies in a 2019 survey reported planning, piloting, or implementing machine learning techniques.¹³² The Securities and Exchange Commission, Internal Revenue Service, and Centers for Medicare and Medicaid Services are all using artificial intelligence to detect fraud and drive enforcement activity.¹³³

A major report commissioned by the Administrative Conference of the United States and released in February 2020 argues that algorithmic enforcement could enhance the administrative state, by scaling up regulatory capacity and reducing perceived politicization of decision-making.¹³⁴ A number of scholars have begun to evaluate the potential and pitfalls of such algorithmic regulation.¹³⁵ Karen Yeung distinguishes algorithmic regulatory systems along four dyads: simple or complex regulatory mandates; reactive or predictive enforcement; sanctions executed automatically or as recommendations to human decision-makers; and whether the system is implemented by private or public entities.¹³⁶ As Yeung explains, algorithmic regulation is appealing as a form of outcome-based public policy, and as a form of data-driven public management.¹³⁷ Yeung connects the preemptive forms of algorithmic regulation to risk-based regulation.¹³⁸

Though regulatory uses of cloud computing, data analytics, and machine learning technologies involved are new, the basic enterprise is not. Governments have a long history of employing data as a simplifying mechanism to exercise and expand their authority.¹³⁹ As political scientist James C. Scott wrote in his influential book, *Seeing Like a State*, the very foundation of the modern state grew out of rulers' ability to regularize local knowledge such as landholdings

131. See JULIE COHEN, BETWEEN TRUTH AND POWER: THE LEGAL CONSTRUCTIONS OF INFORMATIONAL CAPITALISM 31 (2019). See generally Christopher T. Mardsen, *The Regulated End of Internet Law, and the Return to Computer and Information Law?*, in AFTER THE DIGITAL TORNADO: NETWORKS, ALGORITHMS, HUMANITY 41 (Kevin Werbach, ed., 2020); Kate Klonick, *The New Governors: The People, Rules, and Processes Governing Online Speech*, 131 HARV. L. REV. 1598, 1655 (2017).

132. See DAVID FREEMAN ENGSTROM, DANIEL E. HO, CATHERINE M. SHARKEY, & MARIANO-FLORENTINO CUÉLLAR, GOVERNMENT BY ALGORITHM: ARTIFICIAL INTELLIGENCE IN FEDERAL ADMINISTRATIVE AGENCIES 1, 16 (2020).

133. See *id.*

134. *Id.* at 7.

135. See generally Karen Yeung, *Algorithmic Regulation: A Critical Interrogation*, 12 REGULATION & GOVERNANCE 505 (2018); Tim O'Reilly, *Open Data and Algorithmic Regulation*, in BEYOND TRANSPARENCY: OPEN DATA AND THE FUTURE OF CIVIC INNOVATION 289 (Goldstein & Dyson eds., 2013); Cary Coglianese & David Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 GEO. L.J. 1147, 1149 (2017); Kenneth A. Bamberger, *Technologies of Compliance: Risk and Regulation in a Digital Age*, 88 TEXAS L. REV. 669, 671 (2010); Mireille Hildebrandt, *Algorithmic Regulation and the Rule of Law*, 376 PHIL. TRANS. ROYAL SOC. A 1, 1 (2018); Niva Elkin-Koren & Michal S. Gal, *The Chilling Effect of Governance-by-Data on Data Markets*, 86 U. CHI. L. REV. 403, 405 (2019).

136. See generally Yeung, *supra* note 135.

137. See *id.* at 510–11.

138. See *id.* at 511.

139. *Id.* at 30.

into generic metrics.¹⁴⁰ Standardizing information about individuals and their communities gave the state what Scott calls a “synoptic” view, making them “legible” to regulators.¹⁴¹ That in turn facilitated everything from tax collection to large-scale collectivization.¹⁴² Such efforts have become considerably more widespread in the digital era, with its enormous opportunities for collecting and refining personal data.¹⁴³ Private firms now have the capacity to make behavior legible that previously was limited to governments.

A different strain of literature, growing out of science and technology studies, recounts how computers and related technologies produce a fetishization of data.¹⁴⁴ Computers are far better than humans at processing large volumes of data. They are relentlessly rational, never tire, and can consider vastly more information. Yet reducing anything to a number inherently loses some of the richness of reality along with its messiness.¹⁴⁵

The confluence of technologies labeled as artificial intelligence (“AI”), big data, business analytics, data science, machine learning, and related terms matured tremendously in the first two decades of the twenty-first century.¹⁴⁶ Domains that seemed to require the ineffable insight of human judgment, from chess to Go to speech recognition to facial recognition, were rapidly conquered by armies of data scientists and their algorithms.¹⁴⁷ AI is now woven deeply into our entertainment systems, our news and information ecologies, how we interact with our friends, who we date, and many aspects of our work lives.¹⁴⁸ It is unsurprising that governments are adopting the same approaches. And it is equally unsurprising that China is at the forefront.

2. *China’s Autonomic Vision*

China expressly positions SCS as a technology-mediated governance innovation.¹⁴⁹ It builds on a vision that China researcher Samantha Hoffman

140. See JAMES C. SCOTT, *SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN CONDITION HAVE FAILED* 87–102 (1998).

141. See *id.* at 11.

142. Scott’s book is a critique of such efforts, pointing out what is inevitably lost when the dense fabric of reality is reduced to thin abstract metrics.

143. See generally Marion Fourcade & Kieran Healy, *Seeing Like a Market*, 15 *SOCIO-ECON. REV.* 9 (2017).

144. See generally BRETT FRISCHMANN & EVAN SELINGER, *RE-ENGINEERING HUMANITY* (2018).

145. See DAVID BOYLE, *THE TYRANNY OF NUMBERS: WHY COUNTING CAN’T MAKE US HAPPY* xiii, 4 (2000); David G. Robinson, *Reclaiming the Stories That Algorithms Tell*, O’REILLY RADAR (May 27, 2020), <https://www.oreilly.com/radar/reclaiming-the-stories-that-algorithms-tell/> [<https://perma.cc/XQ9L-9C88>].

146. These are often generalized as “AI,” even when using conventional deterministic analysis. Acknowledging the imprecision, I do so here at times for simplicity.

147. See VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, *BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK* 14–15 (2014); ERIK BRYNJOLFSSON & ANDREW MCAFEE, *THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES* 24, 55 (2014).

148. See KARTIK HOSANAGAR, *A HUMAN’S GUIDE TO MACHINE INTELLIGENCE: HOW ALGORITHMS ARE SHAPING OUR LIVES AND HOW WE CAN STAY IN CONTROL* 134 (2019).

149. See Creemers, *supra* note 43, at 19 (“The SCS is a poster-child example of what the Chinese government sees as a process of informatization in governance.”).

describes as “autonomic.”¹⁵⁰ The autonomic nervous system is the collection of biological mechanisms within the body that regulate critical functions such as heart rate, respiration, and digestion without the need for conscious awareness.¹⁵¹ The goal of SCS, as Hoffman explains, is to make the Chinese state “self-optimizing.”¹⁵² Public authorities will continually improve their effectiveness at delivering services, and also their aptitude at enforcement, through the closed loops of data analytics.

Autonomic systems are based on feedback loops. They are able to operate (most of the time, at least) without explicit guidance because they have internal mechanisms for tracking their state.¹⁵³ When performance exceeds certain parameters, the system automatically adjusts in response.¹⁵⁴ When successful, autonomic systems achieve homeostasis: they seem calm and stable even though they may experience significant short-term volatility. A thermostat is a simple autonomic mechanism. It can be quite unsophisticated and yet adapt to dramatically different temperature conditions. The idea behind autonomic social management is that automated incentives and enforcement systems can be used to manage human behavior in the same way.

Most of the SCS today is basic counting.¹⁵⁵ There is little to no effort to identify hidden patterns or predict future actions. Applications layered on top of the governmental data, such as Sesame Credit, may employ more sophisticated machine learning techniques. So far, however, the official SCS websites focus more on tabulating points based on simple rubrics, or on explicit either/or classifications such as redlists and blacklists.¹⁵⁶ This is partly a reflection of the infrastructural design of SCS, as described below in Section IV.C.1. It is also a reflection of the relatively early stage of SCS implementation. Once the foundations for data integration and applications are in place, government and private solutions based on SCS are likely to employ more sophisticated analytics over time. It is not, however, a given that they will aim toward a *Minority Report*-style punishment system for predicted crimes, or that they would succeed if they did.¹⁵⁷

The autonomic approach is particularly appealing to socialist societies such as China.¹⁵⁸ Socialist theorists conceive of Marxism as a scientific enterprise.¹⁵⁹

150. See Samantha Hoffman, *Programming China: The Communist Party's Autonomic Approach to Managing State Security*, MERICS 1, 5 (2017).

151. IBM coined the term “autonomic computing” in 2001 to describe self-monitoring mechanisms for management of data centers, what today we would call “cloud computing.” See W. Wayt Gibbs, *Autonomic Computing*, SCI. AM. (May 6, 2002), <https://www.scientificamerican.com/article/autonomic-computing/> [<https://perma.cc/S8F9-Z55C>].

152. Hoffman, *supra* note 150, at 8.

153. *Id.* at 5.

154. *Id.* at 6.

155. See Creemers, *supra* note 43, at 3, 20.

156. *Id.* at 13, 21–22.

157. See Anderson, *supra* note 10 (proving an overly credulous account of this possibility).

158. Of course, China's system today is a hybrid of socialist state ownership and capitalist free market arrangements.

159. See generally Michael Burawoy, *Marxism as Science: Historical Challenges and Theoretical Growth*, 55 AM. SOCIO. REV. 775 (1990).

Marx's observations, further refined by Lenin and, in the Chinese variant, Mao Zedong and his successors, are viewed not just as economic arguments, but as empirical principles about the nature of society.¹⁶⁰ Many Chinese leaders trained as engineers or scientists. China's massive economic success in recent decades is viewed as the triumph of "socialism with Chinese characteristics" over centuries of backwardness in the world's largest country.¹⁶¹ CCP ideology holds that cutting-edge technology, including data analytics and AI, will help China surpass the West economically. Major Chinese investment initiatives explicitly seek world leadership in these strategic technologies.¹⁶²

Historian and best-selling author Yuval Noah Harari distinguishes free-market capitalism and state-controlled communism as distinct data processing systems: the former is decentralized and the latter is centralized.¹⁶³ This is actually an old concept, which was at the heart of a debate among economists in the mid-20th century.¹⁶⁴ Austrian School economists led by Friedrich Hayek are generally thought to have won the "socialist calculation debate" because, in practice, capitalist economies proved far more dynamic than centrally-planned socialist ones, such as that of the Soviet Union.¹⁶⁵ The "invisible hand" of a free market, operating through the price system, functions more effectively as an information processing modality than even the smartest central planners.¹⁶⁶

Contemporary digital systems incorporating AI and big data might alter the game.¹⁶⁷ According to Feng Xiang, a law professor at Tsinghua University, "If AI rationally allocates resources through big data analysis, and if robust feedback

160. *See generally id.*

161. Incorporating new approaches such as SCS, China's current leader Xi Jinping has revised this motto to "socialism with Chinese characteristics for a new era." *See generally* Chris Buckley, *Xi Jinping Thought Explained: A New Ideology for a New Era*, N.Y. TIMES (Feb. 26, 2018), <https://www.nytimes.com/2018/02/26/world/asia/xi-jinping-thought-explained-a-new-ideology-for-a-new-era.html> [<https://perma.cc/CP4U-5TPA>].

162. *See* Graham Webster, Rogier Creemers, Paul Triolo, & Elsa Kania (translators), *Full Translation: China's 'New Generation Artificial Intelligence Development Plan' (2017)*, NEW AM. (Aug. 1, 2017), <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/> [<https://perma.cc/LY3S-HGLH>] (declaring that, "by 2030, China's AI theories, technologies, and applications should achieve world-leading levels, making China the world's primary AI innovation center . . ."); KAI-FU LEE, *AI SUPERPOWERS: CHINA, SILICON VALLEY, AND THE NEW WORLD ORDER* (2018); Ian Burrows, *Made in China 2025: Xi Jinping's Plan to Turn China Into the AI World Leader*, ABC.NET.AU (Oct. 5, 2018, 8:05 PM), <https://www.abc.net.au/news/2018-10-06/china-plans-to-become-ai-world-leader/10332614> [<https://perma.cc/68TM-A89H>].

163. *See* YUVAL NOAH HARARI, *HOMO DEUS: A BRIEF HISTORY OF TOMORROW* 399 (2016).

164. *See* Evgeny Morozov, *Digital Socialism? The Calculation Debate in the Age of Big Data*, 116/117 NEW LEFT REV. 33, 44 (2019).

165. *See id.* at 35.

166. *See id.* at 36.

167. *See* *Can Big Data Help to Resurrect the Planned Economy?*, GLOBAL TIMES (June 14, 2017, 10:33 PM), <http://globaltimes.cn/content/1051715.shtml> [<https://perma.cc/BES4-BMFA>]. *See generally* LEIGH PHILLIPS & MICHAL ROZWORSKI, *THE PEOPLE'S REPUBLIC OF WALMART: HOW THE WORLD'S BIGGEST CORPORATIONS ARE LAYING THE FOUNDATION FOR SOCIALISM* (2019); DANIEL E. SAROS, *INFORMATION TECHNOLOGY AND SOCIALIST CONSTRUCTION: THE END OF CAPITAL AND THE TRANSITION TO SOCIALISM* (2014). *But see* Jesús Fernández-Villaverde, *Simple Rules for a Complex World with Artificial Intelligence*, 1 (Univ. Pa., Working Paper 20-010, 2020), (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3559378) [<https://perma.cc/J8TB-MSPA>] (arguing that conventional legal rules remain superior to artificial intelligence for public policy).

loops can supplant the imperfections of ‘the invisible hand’ while fairly sharing the vast wealth it creates, a planned economy that actually works could at last be achievable.”¹⁶⁸ Based on such factors, *The Economist* posed the question in late 2019 of whether countries such as China could now exercise the kind of control their socialist forbears could not.¹⁶⁹

A future SCS, in this vision, would create ubiquitous feedback loops in which performance is tracked at a local, highly granular level, and then automatically fed into rating systems which generate behavioral incentives. Patterns would be identified bottom-up. That means building systems that rely on experimentation and refinement, because no omniscient designer can anticipate where the real-world data will lead. SCS embodies this spirit of experimentation,¹⁷⁰ which as previously noted is a common feature of contemporary Chinese policy implementation.¹⁷¹

At the same time, China’s autonomic approach brings it closer to the techno-libertarians of Silicon Valley. A number of authors have described “dataism” as an overwhelming faith in the power of big data and analytics to address virtually any problem.¹⁷² Essentially, this worldview treats government as nothing more than a great computer. As Yeung points out, “[d]ataism unites capitalism and communism within a single overarching vision by assuming that the ultimate goal of political systems is the optimal distribution of society’s material resources.”¹⁷³ SCS thus, as Jonathan Bach points out, “fits the modernist desire to make value objectively visible through numerical scores.”¹⁷⁴

Dataism is not the same thing as objective rationalism. As noted earlier, the Chinese manifestation, SCS, has a significant moral component.¹⁷⁵ And more generally, framing problems as technical matters of information and allocation may have significant impacts on the substance of government policies.¹⁷⁶

168. Feng Xiang, *Opinion: AI Will Spell the End of Capitalism*, WASH. POST (May 3, 2018), <https://www.washingtonpost.com/news/theworldpost/wp/2018/05/03/end-of-capitalism/> [https://perma.cc/FB68-KQDS].

169. See *Can Technology Plan Economies and Destroy Democracy?*, ECONOMIST (Dec. 18, 2019), <https://www.economist.com/christmas-specials/2019/12/18/can-technology-plan-economies-and-destroy-democracy> [https://perma.cc/M8YH-52NC]. The article drew upon a blog post by law professor Henry Farrell on the Crooked Timber site. See Henry Farrell, *Seeing Like a Finite State Machine*, CROOKED TIMBER (Nov. 25, 2019), <http://crookedtimber.org/2019/11/25/seeing-like-a-finite-state-machine/> [https://perma.cc/VTS4-D4ZQ].

170. See Bach, *supra* note 45, at 493–95.

171. See *supra* note 59 and associated text (describing China’s practice of encouraging local experimentation).

172. See David Brooks, *The Philosophy of Data*, N.Y. TIMES (Feb. 4, 2013), <https://www.nytimes.com/2013/02/05/opinion/brooks-the-philosophy-of-data.html> [https://perma.cc/WGV7-X46B]; STEVE LOHR, DATAISM: THE REVOLUTION TRANSFORMING DECISION MAKING, CONSUMER BEHAVIOR, AND ALMOST EVERYTHING ELSE 3 (2015); HARARI, *supra* note 163, at 373. John Danaher uses the term “algocracy” to express a similar concept. See John Danaher, *The Threat of Algocracy: Reality, Resistance and Accommodation*, 29 PHIL. & TECH. 245, 247 (2016).

173. Yeung, *supra* note 135, at 513.

174. Bach, *supra* note 45, at 490.

175. See discussion *supra* Section II.A.

176. Yeung cites Evgeny Morozov’s argument that “technological solutionism” means a political ideology that frees the state of social burdens. See EVGENY MOROZOV, TO SAVE EVERYTHING, CLICK HERE: THE FOLLY OF TECHNOLOGICAL SOLUTIONISM 1–16 (2014); Yeung, *supra* note 135, at 513–14 (“Unlike the welfare state, the

Dataism is a further extension of Scott's concept of "seeing like a state."¹⁷⁷ Governments and other powerful actors reduce human complexity to a small number of precisely-specified values.¹⁷⁸ Today's powerful AI engines sitting atop massive cloud data stores are a world away from the hand-drawn cadastral maps used to identify land ownership in early modern Europe. They serve the same purpose when employed in this way. An emphasis on governing through data implies strong efforts to collect that data. It also requires approaches to data processing that abstract from individual data points to find patterns. As information law scholar Julie Cohen summarizes, "in modern societies, discipline is accomplished through statistical methods [of classification and normalization]."¹⁷⁹

B. Policy Goals

As a regulatory system, SCS is a means to ends defined by the institutions of the Chinese state. It serves four primary objectives: economic development, political control, legal compliance, and moral improvement.¹⁸⁰ Reducing it to any one goal risks creating misimpressions, although particular actors within the Chinese system will emphasize specific objectives at any given time.

1. Economic Efficiency

Western consumer credit regimes, which developed as private offerings to serve the financial services industry, were designed to promote economic efficiency.¹⁸¹ By seeing a prospective borrower's credit history, or a score based on behavioral analytics, a lender could more accurately conduct risk assessment, a foundational element of the capitalist financial system. This objective is surely present in China as well. It was particularly prominent in the initial formulations of SCS in the 2000s.¹⁸²

Furthermore, in the Chinese context, any economic motivation also has a development aspect. Although China is now the world's largest economy by purchasing power parity, it still has attributes of a developing country, with GDP per capital well below Western Europe and the United States, especially outside

algorithmic state makes no assumptions about the existence of specific social problems requiring concerted collective action by the state, and if they exist, they can only be tackled by individual action . . .").

177. See SCOTT, *supra* note 140 and accompanying text.

178. See Cohen, *supra* note 3, at 182.

179. *Id.* at 185; see also James Boyle, *Foucault in Cyberspace: Surveillance, Sovereignty, and Hardwired Censors*, 66 U. CIN. L. REV. 177, 184–88 (1997); OSCAR H. GANDY, JR., *Information and Power*, in *THE PANOPTIC SORT: A POLITICAL ECONOMY OF PERSONAL INFORMATION* 15, 15–52 (1993); see generally Kirstie Ball, David Lyon, David Murakami Wood, Clive Norris, & Charles Raab, *A REPORT ON THE SURVEILLANCE SOCIETY* (2006).

180. See discussion *infra* Section II.B.

181. See *supra* text accompanying note 60.

182. See *id.*; Creemers, *supra* note 43, at 9 (observing that "the initial efforts surrounding the SCS were primarily focused on market economic concerns," although local pilot projects such as one in the city of Suining had broader objectives); Bach, *supra* note 45, at 491–92.

the major cities.¹⁸³ Thus, SCS represents an effort to gain the knock-on benefits of consumer credit regimes those nations enjoy. New solutions for credit assessment are particularly important for small businesses and those in less-developed “lower-tier” cities in China.

With the rise of big data and AI, fintech and social media companies developed algorithms to predict credit behavior from additional data points beyond traditional credit histories.¹⁸⁴ These developments occurred just as SCS was being formulated, and as the Chinese consumer internet sector was exploding.¹⁸⁵ Incorporating a wider range of data and algorithmic techniques into financial credit scoring was a natural direction for SCS, even where the goals were purely economic. As with mobile broadband and digital payments, China’s relative backwardness give it the opportunity to leapfrog the West by moving directly to a more sophisticated digital credit systems than the one prevailing elsewhere. The corporate element of SCS, in particular, is designed to enhance the effectiveness of the Chinese regulatory state: “If implemented successfully, the system will strengthen the Chinese government’s capacity to enforce and fine-tune market regulations and industrial policies in a sophisticated manner.”¹⁸⁶ SCS also provides an impetus for IT investments, process re-engineering, and funding to improve the efficacy of Chinese regulatory agencies.¹⁸⁷

2. *Political Control*

Technological systems based on big data and analytics are never simply neutral tools.¹⁸⁸ They embed normative judgements and latent biases of their creators.¹⁸⁹ This is especially true for systems initiated by governmental

183. Jonathan Eckart, *8 Things You Need to Know About China’s Economy*, WORLD ECON. F. (Jun. 23, 2016), <https://www.weforum.org/agenda/2016/06/8-facts-about-chinas-economy/> [<https://perma.cc/29GB-DHKQ>].

184. See *The ‘Social’ Credit Score: Separating the Data from the Noise*, KNOWLEDGE@WHARTON (June 5, 2013), <https://knowledge.wharton.upenn.edu/article/the-social-credit-score-separating-the-data-from-the-noise/> [<https://perma.cc/C5E8-VLU3>]. In 2015, Facebook was granted a patent for evaluating creditworthiness based on the credit scores of a user’s friends. See Ananya Bhattacharya, *Facebook Patent: Your Friends Could Help You Get a Loan - or Not*, CNN (Aug. 4, 2015, 6:58PM), <https://money.cnn.com/2015/08/04/technology/facebook-loan-patent/> [<https://perma.cc/55XJ-JZK9>]. But see Telis Demos & Deepa Seetharaman, *Facebook Isn’t So Good at Judging Your Credit After All*, WALL ST. J. (Feb. 24, 2016, 5:30 AM), <https://www.wsj.com/articles/lenders-drop-plans-to-judge-you-by-your-facebook-friends-1456309801> [<https://perma.cc/MH6A-RU38>] (suggesting that fears Facebook would dominate credit scoring were overblown due to regulatory limitations and consumer backlash).

185. Robert Scammell, *Facebook Rating Score Has Echoes of China’s Social Credit System*, VERDICT (Aug. 24, 2018, 12:12 PM), <https://www.verdict.co.uk/facebook-rating-score-china-social-credit/> [<https://perma.cc/3SJ2-2HKG>].

186. See MIRJAM MEISSNER, CHINA’S GESELLSCHAFTLICHES BONITÄTSSYSTEM: MARKETREGIERUNG MIT HILFE VON BIG DATA HAT WEITRECHENDE FOREIGN FÜR UNTERNEHMEN IN CHINA [CHINA’S SOCIAL CREDIT SYSTEM: A BIG-DATA ENABLED APPROACH TO MARKET REGULATION WITH BROAD IMPLICATIONS FOR DOING BUSINESS IN CHINA] 2 (2017).

187. See Dai, *supra* note 22, at 40.

188. See O’NEILL, *supra* note 40; PASQUALE, *supra* note 21; Batya Friedman & Helen Nissenbaum, *Bias in Computer Systems*, 14 ACM TRANSACTIONS ON INFO. SYS. 330, 331 (1996).

189. See Langdon Winner, *Do Artifacts Have Politics*, 109 DAEDALUS 121, 125–26 (1980).

authorities. SCS is a project of the Chinese Communist Party, even though many of its components are implemented by private entities with their own motivations.¹⁹⁰ It would be unreasonable to imagine that SCS would not reflect the political objectives of the CCP, even if those are not explicitly designed into the system.

China is a single-party authoritarian state.¹⁹¹ Its leadership is committed to tight controls over political activity and any forms of free expression that it perceives might threaten social stability. It has not hesitated to use coercive measures to enforce these controls, ranging from the massacre of dissidents on Tiananmen Square in 1989 to the recent treatment of Uighur Muslims in Xinjiang Province and protestors in Hong Kong in 2019-20.¹⁹² China created a “Great Firewall” allowing it to censor internet communications in the country, and has zealously regulated or excluded internet firms to enforce its content controls.¹⁹³ These efforts increased under the leadership of Xi Jinping starting in 2012.¹⁹⁴

In a report for the Mercator Institute for China Studies, Samantha Hoffman identifies SCS as a mechanism of central control that co-opts the concept of individual responsibility: “Responsibility implies that every Chinese citizen, whether they are located inside or outside of the Party, is tasked with fulfilling the responsibility to uphold the Communist Party’s leadership.”¹⁹⁵ This concept of responsibility diverges greatly from its manifestation in the West. In the Western model, responsibility is a backstop of pre-existing individual liberties, whereas in China, freedom emerges from the exercise of collective responsibility, which is superintended by the CCP.¹⁹⁶ Generalizing in this way about large, complex societies is necessarily imprecise, but it helps to explain how SCS appears in the Chinese context as something other than Orwellian repression.

A SCS in, say America, would rest on different foundations. It would focus more on scaling back the coercive presence of the state in lieu of voluntary or automated systems. As political scientist Virginia Eubanks has documented,

190. Katja Drinhausen & Vincent Brusse, *China’s Social Credit System in 2021: From Fragmentation Towards Integration*, MERCATOR INST. FOR CHINA STUDS. (Mar. 3, 2021), <https://merics.org/en/report/chinas-social-credit-system-2021-fragmentation-towards-integration> [<https://perma.cc/YHX9-D5FE>].

191. Ming Xia, *The Communist Party of China and the “Party-State”*, N.Y. TIMES, <https://archive.nytimes.com/www.nytimes.com/ref/college/coll-china-politics-002.html> (last visited May 22, 2022) [<https://perma.cc/WNY9-TBVT>].

192. Helen Davidson, *China In Darkest Period for Human Rights Since Tiananmen, Says Rights Group*, GUARDIAN (Jan. 13, 2021), <https://www.theguardian.com/world/2021/jan/13/china-in-darkest-period-for-human-rights-since-tiananmen-says-rights-group> [<https://perma.cc/RH4M-CLL7>].

193. See Simon Denyer, *China’s Scary Lesson to the World: Censoring the Internet Works*, WASH. POST (May 23, 2016), https://www.washingtonpost.com/world/asia_pacific/chinas-scary-lesson-to-the-world-censoring-the-internet-works/2016/05/23/413afe78-fff3-11e5-8bb1-f124a43f84dc_story.html [<https://perma.cc/4Q7G-JGJL>].

194. Elizabeth C. Economy, *The Great Firewall of China: Xi Jinping’s Internet Shutdown*, GUARDIAN (June 29, 2018, 1:00 AM), <https://www.theguardian.com/news/2018/jun/29/the-great-firewall-of-china-xi-jinpings-internet-shutdown> [<https://perma.cc/A5XW-Z8S3>].

195. SAMANTHA HOFFMAN, PROGRAMMING CHINA: THE COMMUNIST PARTY’S AUTONOMIC APPROACH TO MANAGING STATE SECURITY 8 (2017).

196. See *id.*

however, such autonomic approaches today are used more widely, and more harmfully, on the most vulnerable elements of society.¹⁹⁷ Whereas in China the danger is political repression, in America it might be exacerbating inequality.

The political potential of SCS extends beyond its impact on individuals. In 2018, the Chinese aviation authority threatened several U.S.-based airlines with blacklisting in the corporate SCS for an “act of serious dishonesty” if they continued to list Taiwan as an independent country.¹⁹⁸ Although China has pushed foreign governments and companies to accept its views on Taiwan for some time, SCS provides a new lever. Presence on the blacklist would extend not only to transportation, but SCS databases for other categories as well. For example, it could lead to penalties under China’s cybersecurity law.¹⁹⁹ Airlines who defied the Chinese government would therefore need to be concerned about greater exclusion from business in China. In the end, the airlines agreed to compromise language regarding Taiwan that was more in line with Chinese demands.²⁰⁰

SCS is an evolving project, and the Chinese state is not static in its political agenda. The current regime is considerably more aggressive in imposing social controls than its predecessors in the 2000s.²⁰¹ SCS could turn into a more nightmarish tool of repression in the future. China’s digital surveillance capabilities are already being implemented that way in certain areas, most notably for the Uighur population in Xinjiang.²⁰² That is all the more reason to understand what the dangers are, and where they might be prevented through different means of oversight. Simply identifying that a technological system can be oppressive is the beginning, not the end, of the inquiry. All of them can be.²⁰³

China is making efforts to export SCS. A 2020 pilot project is planned with the Central Asian states of Kazakhstan, Kyrgyzstan, and Mongolia, and the Kazakh government has approached India, Turkey, Laos, Russia, and Malaysia about creating a “Credit Asia” initiative inspired by the Chinese SCS.²⁰⁴ This is all occurring at a time when China is becoming increasingly assertive in

197. See VIRGINIA EUBANKS, *AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR* (2018).

198. Samantha Hoffman, *Grasping Power with Both Hands: Social Credit, the Mass Line, and Party Control*, JAMESTOWN FOUND.: CHINA BRIEF (Oct. 10, 2018, 7:00 AM), https://jamestown.org/program/grasping-power-with-both-hands-social-credit-the-mass-line-and-party-control/?mc_cid=35eff63e0a [<https://perma.cc/4YW8-PP63>].

199. Samantha Hoffman, *Social Credit*, AUSTL’N. STRATEGIC POL’Y INST. (June 28, 2018), <https://www.aspi.org.au/report/social-credit> [<https://perma.cc/84NP-6ZE9>].

200. See Hoffman, *supra* note 198.

201. Anderson, *supra* note 10.

202. See *id.*

203. But see Evan Selinger & Woodrow Hartzog, *What Happens When Employers Can Read Your Facial Expressions?*, N.Y. TIMES (Oct. 17, 2019), <https://www.nytimes.com/2019/10/17/opinion/facial-recognition-ban.html> [<https://perma.cc/9EJN-PP79>] (arguing that facial recognition technology is so dangerous that it should be preemptively banned).

204. See Yau Tsz Yan, *Exporting China’s Social Credit System to Central Asia*, DIPLOMAT (Jan. 17, 2020), <https://thediplomat.com/2020/01/exporting-chinas-social-credit-system-to-central-asia/> [<https://perma.cc/8MGV-EQAB>].

promoting its own internet standards to the world.²⁰⁵ Other authoritarian states are developing SCS systems of their own design that follow the Chinese model.²⁰⁶

3. *Legal Compliance and Trust*

SCS is a system to promote trust and trustworthy behavior.²⁰⁷ China is a low-trust society, which suffers from inconsistent enforcement of the law.²⁰⁸

As one recent article puts it, “[t]o be Chinese today is to live in a society of distrust, where every opportunity is a potential con and every act of generosity a risk of exploitation.”²⁰⁹

SCS is intended to increase trust and legal enforcement.²¹⁰ Consistent legal enforcement is difficult in a country as vast as China, especially one lacking a long institutional tradition of the rule of law. Even a fearsome authoritarian state lacks the personnel to police every violation. And while the court system has been significantly expanded and professionalized in recent years, its effectiveness in enforcing decisions often remains limited.²¹¹ Comparative legal scholars Taisu Zhang and Tom Ginsburg suggest that SCS “essentially allows the judiciary to outsource some of the enforcement of its decisions to other public entities, such as banks and public transportation.”²¹²

In China, state-owned enterprises or those closely aligned with high-level figures in the CCP are often seen to be receiving favorable legal treatment.²¹³ This reinforces a culture in which ordinary citizens feel less compunction against

205. See Emily de La Bruyère & Nathan Picarsic, *China's Next Plan to Dominate International Tech Standards*, TECHCRUNCH (Apr. 11, 2020, 10:15 AM), <https://techcrunch.com/2020/04/11/chinas-next-plan-to-dominate-international-tech-standards/> [<https://perma.cc/BQ5B-MBZF>].

206. The city government of Moscow in Russia is creating a system to evaluate “signs of loyalty” among its residents. See *Moscow Plans Expanded Social Credit-Style Tracking System*, MOSCOW TIMES (Nov. 25, 2020), <https://www.themoscowtimes.com/2020/11/25/moscow-plans-expanded-social-credit-style-tracking-system-open-media-a72144> [<https://perma.cc/4TVP-7A86>].

207. See Yu-Jie Chen, Ching-Fu Lin & Han-Wei Liu, “Rule of Trust”: *The Power and Perils of China's Social Credit Megaproject*, 32 COLUM. J. ASIAN L. 1, 28 (2018); Song, *supra* note 10; Primavera de Filippi, *The Social Credit System as a New Regulatory Approach: From 'Code-Based' to 'Market-Based' Regulation*, VERFASSUNGSBLOG (June 24, 2019), <https://verfassungsblog.de/the-social-credit-system-as-a-new-regulatory-approach-from-code-based-to-market-based-regulation/> [<https://perma.cc/WTP4-V829>].

208. See Dai, *supra* note 22, at 2; Chen et al., *supra* note 207, at 2; Bach, *supra* note 45, at 492; Xinyuan Wang, *Hundreds of Chinese Citizens Told Me What They Thought About the Controversial Social Credit System*, CONVERSATION (Dec. 17, 2019, 5:41 AM), <https://theconversation.com/hundreds-of-chinese-citizens-told-me-what-they-thought-about-the-controversial-social-credit-system-127467> [<https://perma.cc/8MY9-JJAL>]. Trust is the fusion of confidence and vulnerability. It is an essential factor in economic and social activity. See KEVIN WERBACH, *THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST* 25 (2018); FRANCIS FUKUYAMA, *TRUST: THE SOCIAL VIRTUES AND THE CREATION OF PROSPERITY* (1995).

209. Hawkins, *supra* note 32.

210. See Bach, *supra* note 45, at 490; Alexandra Stevenson & Paul Mozur, *China Scores Businesses, and Low Grades Could Be a Trade-War Weapon*, N.Y. TIMES (Sept. 22, 2019), <https://www.nytimes.com/2019/09/22/business/china-social-credit-business.html> [<https://perma.cc/W2MR-2HN3>].

211. Taisu Zhang & Tom Ginsburg, *China's Turn Towards Law*, 59 VA. J. INT'L L. 306, 323–24 (2019).

212. See *id.* at 331.

213. MINXIN PEI, *CORRUPTION THREATENS CHINA'S FUTURE* 2 (2007).

violating the law if they think they can get away with it.²¹⁴ One of the CCP's greatest concerns under the leadership of Xi Jinping is that corruption, differential legal enforcement, and more generally, endemic law-breaking will undermine social stability.²¹⁵ A series of scandals in which failure to adhere to legal and regulatory requirements resulted in deaths from high-speed train accidents, tainted food, and similar situations provoked significant popular unrest.²¹⁶ Improving legal compliance and enforcement therefore serve two objectives for Chinese leadership. They help the CCP stay in power, and they promise indirect benefits of greater social harmony.²¹⁷ Surveys find SCS is generally popular in China, because it promises an objective technological alternative to untrustworthy corporate and government officials.²¹⁸ One poll found approval rates of 80%.²¹⁹

Data-driven punishments will mean that definitions of violations are more consistent and enforcement more universal.²²⁰ The composition of a blacklist, and its use to trigger penalties, no longer depend on the fallible decisions of government bureaucrats. Under the rules proposed in mid-2020, these blacklists must be published and subject to public comment prior to adoption.²²¹ Equally important, there are fewer points at which corrupt or otherwise determined bureaucrats could short-circuit the enforcement process for favored individuals or companies. Senior officials are as subject to the SCS rubrics as anyone else. Psychologist Tom Tyler has persuasively shown that compliance with the law derives less from fear of punishment than from two procedural conditions: just processes and trust in the motives of authorities.²²² SCS replaces existing legal enforcement structures in China with mechanisms whose structure, motivations, and consistent enforcement are transparent.

214. *Id.* at 5.

215. See Hawkins, *supra* note 32 (“The less people trust each other, the more the social pact that the government has with its citizens—of social stability and harmony in exchange for a lack of political rights—disintegrates.”).

216. Evan Osnos, *Boss Rail*, NEW YORKER (Oct. 15, 2012), <https://www.newyorker.com/magazine/2012/10/22/boss-rail> [<https://perma.cc/5X8C-D3LQ>].

217. A system emphasizing ethics and trust in economic activity also addresses the contradiction between China's post-Deng Xiaoping embrace of markets and the traditional Marxist critique of capitalism as inherently immoral. See Bach, *supra* note 45, at 492.

218. See Wang, *supra* note 208 (reporting from an ethnographic study that “a lot of the people I spoke to perceived the new social credit system as a national project to boost public morality through fighting fraud and crime and combating what is currently seen as a nationwide crisis of trust”).

219. Genia Kostka, *China's Social Credit Systems and Public Opinion: Explaining High Levels of Approval*, 21 NEW MEDIA & SOC'Y 1565, 1573 (2019). A more recent study of students in China found somewhat lower, but still significant, approval levels. Marc Oliver Rieger, Mei Wang & Mareike Ohlberg, *What Do Young Chinese Think About Social Credit? It's Complicated*, MERCATOR INST. FOR CHINA STUDS. (Mar. 26, 2020), <https://merics.org/en/report/what-do-young-chinese-think-about-social-credit-its-complicated> [<https://perma.cc/J5R2-CJPB>]. Any assessment of popular opinion in a country without freedom of speech must, by nature, be qualified. However, there are enough data points, both anecdotal and empirical, to provide some confidence that the reported support for SCS in China is not merely out of fear the authorities are listening.

220. See Nathaniel Taplin, *Coming Soon in China: 'Social Credit' for Companies, Too*, WALL ST. J. (Sept. 17, 2019, 1:29 PM), <https://www.wsj.com/articles/coming-soon-in-china-social-credit-for-companies-too-11568713871> [<https://perma.cc/KNT7-EXGL>].

221. CHINA L. TRANSLATE, *supra* note 77.

222. See TOM R. TYLER, WHY PEOPLE OBEY THE LAW 74 (2006).

Whether this is in fact the case remains to be seen. Xi Jinping has engaged in a massive anti-corruption effort, which has ensnared senior party officials at all levels of government.²²³ It is an open question, however, how much of that effort is a genuine effort to stamp out abuses, and how much is a clever means of consolidating power by targeting political adversaries. The two motivations are likely impossible to separate. It is quite possible that, when push comes to shove, the automated machinery of SCS may allow for human-imposed exceptions after all.

China has been described as a country subject to “rule by law” more so than “rule of law.”²²⁴ The former, Eric Orts explains, means the “instrumental, positivist sense of creating consistent and uniform ‘rules of the game’ needed for a modern market economy,” while the latter implies an independent judiciary and other fetters on the power of the state.²²⁵ The Chinese state rules through law. It has a written constitution, adopts statutes, establishes administrative regulations, and operates courts to resolve disputes. Its legal system has been relentlessly formalized, professionalized, and regularized during the reform period beginning in 1978.²²⁶ All of it, however, is ultimately subsidiary to the CCP.²²⁷ Some rules expressly allow for exercise of power in ways that would be unthinkable in the West; others are written so vaguely that they provide no real constraints.²²⁸ And despite the extensive body of formal law, well-connected firms, families, and individuals are often able to violate it without consequence.

According to Zhang and Ginsburg, the regime of Xi Jinping has paradoxically strengthened China’s legalistic implementation of rule by law, even as it moves further from the democratic values associated with the rule of law.²²⁹ Xi centralized power by strengthening the formal role of legal institutions. “The Chinese example shows, in particular, that legal institutions, and even genuine commitment to legality in governmental operations, can empower authoritarianism just as well as constrain it,” they conclude.²³⁰ Orts

223. See Tania Branigan, *Politburo, Army, Casinos: China’s Corruption Crackdown Spreads*, GUARDIAN (Feb. 14, 2015, 7:41 AM), <https://www.theguardian.com/world/2015/feb/14/china-corruption-crackdown-spreads-xi-jinping> [https://perma.cc/Q92L-JNQ2].

224. See Eric W. Orts, *The Rule of Law in China*, 34 VAND. J. TRANSNAT’L L. 43, 106 (2001); Steven Mufson, *Chinese Movement Seeks Rule of Law to Keep Government in Check*, WASH. POST (Mar. 5, 1995), <https://www.washingtonpost.com/archive/politics/1995/03/05/chinese-movement-seeks-rule-of-law-to-keep-government-in-check/f8d6a688-d57a-4938-87da-f721c7e7cb1a/> [https://perma.cc/QGP6-F56C]. See also RANDALL PEERENBOOM, CHINA’S LONG MARCH TOWARD RULE OF LAW 138–39 (2002) (tracking the development of rule-of-law concepts in the People’s Republic of China).

225. Orts argues that “rule by law” need not require democratic institutions, and that it could lay the foundations for later development of a more capacity “rule of law” society.

226. Pitman B. Porter, *Legal Reform in China: Institutions, Culture, and Selective Adaptation*, 29 L. & SOC. INQUIRY 465, 465 (2004).

227. Socialist law generally sees law as serving the goals of the revolution, rather than impartial or equitable justice. See William Partlett & Eric C. Ip, *Is Socialist Law Really Dead?* 48 N.Y.U. J. INT’L L. & POL. 463, 464 (2016) (arguing that the tradition of socialist law developed in the Soviet Union lives on in the People’s Republic of China.).

228. See *id.* at 486.

229. Zhang & Ginsburg, *supra* note 211, at 314–15.

230. *Id.* at 310.

agrees: [i]n this sense, even a grossly authoritarian legal system may qualify as ruling by law.”²³¹

While it is unlikely to be a check on the CCP, there is some anecdotal evidence SCS is being used to rein in scofflaw behavior of the rich and powerful. Wang Sicong, the son of billionaire property tycoon Wang Jianlin, was banned from using his sportscars, traveling first class, or buying certain luxury goods by courts in Beijing and Shanghai in late 2019 over failure to pay a \$20 million debt.²³² While these were manual decisions of courts to impose penalties based on the joint punishment regime, and how strictly they were enforced is difficult to assess, the decisions do give some indication that SCS will serve as a counterbalance to skewed legal enforcement.

As discussed earlier, SCS is also designed to reduce the need for enforcement by improving rates of compliance.²³³ Some of this will happen through the deterrent effect of stricter, more consistent, and broader penalties. Some will be the result of the panopticon effect of anticipatory compliance, or the motivational techniques of SCS applications. In a country such as China, some forms of legal enforcement will inevitably also count as political control. Failing to pay an adjudicated debt is against the law in every country.

Criticizing the leadership, supporting the protest movement in Hong Kong, or participating in Muslim religious activities with fellow Uighurs, can be criminal in China but expressly protected acts in liberal democracies.²³⁴

4. *Ethical Instruction*

Finally, SCS has an important moral dimension.²³⁵ The core financial credit infrastructure fosters economic transactions and, in its initial incarnation, is built on purely economic data. Even here, though, the state’s expressed rationale is to promote good norms of conduct, not just accurate financial risk assessment.²³⁶ The 2014 State Council Notice expresses a goal to “broadly shape a thick atmosphere in the entire society that keeping trust is glorious and breaking trust is disgraceful”²³⁷

This orientation has deep roots in China. Confucius used the character 信 (*xìn*), usually translated as “credit,” to describe the ultimate attribute of a

231. Orts, *supra* note 224, at 94.

232. See Billie Thompson, *Billionaire’s Son Who ‘Refused to Pay £16 Million Debt’ Is Banned from Using His Supercars, Lavish Villas and Savings by China’s Social Credit System*, DAILY MAIL (Nov. 22, 2019, 9:08 AM), <https://www.dailymail.co.uk/news/article-7714603/Billionaires-son-banned-using-supercars-villas-Chinas-social-credit-system.html> [<https://perma.cc/J3YL-YXPD>].

233. See discussion *supra* Part III.

234. E. John Gregory, *China’s P2P Protests, the United States, and the International Liberal-Democratic Order*, DIPLOMAT (Aug. 22, 2018), <https://thediplomat.com/2018/08/chinas-p2p-protests-the-united-states-and-the-international-liberal-democratic-order/> [<https://perma.cc/U99U-2HQU>].

235. See Creemers, *supra* note 43, at 2 (“SCS is framed as a set of mechanisms providing rewards or punishments as feedback to actors, based not just on the lawfulness, but also the morality of their actions. . . .”); Bach, *supra* note 45, at 490 (explaining that SCS “promises a new metric for connecting economic and moral behavior, that of ‘sincerity’”).

236. See Creemers, *supra* note 43, at 7–8.

237. 2014 State Council Notice, *supra* note 62.

successful society.²³⁸ The term has strong moral connotations of honesty, integrity, and trustworthiness.²³⁹ In general, Confucianism “treat[s] the law as an auxiliary tool for moral education.”²⁴⁰ The Chinese legal scholar Xin Dai situates SCS in that tradition as an effort toward “a high level of unification between law and norms.”²⁴¹

Those who appear on SCS blacklists are described as “untrustworthy,” and official SCS documents speak of encouraging “sincerity.”²⁴² The larger SCS activity includes information that has no direct economic basis. For example, since 2018, brides and grooms in China are required to sign letters as part of their marriage license stating that violations of marriage laws (such as lying about age or familial relationship) may lead to SCS blacklisting.²⁴³ Pilot municipal SCS scoring applications in Xiamen and Fuzhou include factors such as “volunteering, donating blood, using public transport, separating waste; working in areas of public interest such as teachers or doctors” to earn points.²⁴⁴ This emphasis is consistent with a larger emphasis on morality by the CCP under Xi.²⁴⁵ According to Paul D’Ambrosio, China’s leaders contrast the Western focus on individual “authenticity” with a “culture of sincerity,” which “basically asks people to live up to social norms, be good citizens, as well as responsible workers and family members.”²⁴⁶

This moral aspect of SCS is the most unfamiliar for Western observers, who are used to both the state and the private sector serving purely positive ends tied to the satisfaction of material needs.²⁴⁷ Going back in time, however, as the sociologist Max Weber famously argued, the spirit of capitalism was inextricably

238. See Chorzempa et al., *supra* note 43, at 1 (“The Chinese character we translate as ‘credit’ has thus long been a core concept of Chinese governance.”); see also Dai, *supra* note 22, at 39 (observing that the two Chinese characters representing “credit” the name of SCS “encapsulate[] a host of lofty moral virtues as trustworthiness, promise-keeping, norm abiding, integrity and decency . . .”).

239. See Creemers, *supra* note 43, at n.13; Liang et al., *supra* note 51, at 424. *But see* Philip Ivanhoe, *How Confucius Loses Face in China’s New Surveillance Regime*, AEON (Jan. 17, 2020), <https://aeon.co/ideas/how-confucius-loses-face-in-chinas-new-surveillance-regime> [<https://perma.cc/N6BX-XZQG>] (arguing that China’s ubiquitous surveillance destroys the Confucian ideal of moral self-reflection, redirecting the cultivation of self to compliance with external requirements of the government and its algorithms).

240. Luo Li, *How Has Chinese Traditional Culture an Impact on China’s Intellectual Property Legal System?*, INT’L J. INTERDISCIPLINARY SOC. SCIENCES, 2010, at 3, 3.

241. Dai, *supra* note 22, at 41.

242. See Creemers, *supra* note 43, at 13; D’Ambrosio, *supra* note 10 (“The word chengxin (‘sincerity’) . . . appears almost 150 times in the 12-page document, in contexts ranging from the economic and political, to the psychological and mundane.”).

243. See *China’s Brides and Grooms to Sign Social Credit Promises During Marriage Registrations*, TRIVIUM SOCIAL CREDIT (Oct. 11, 2019), <http://socialcredit.triviumchina.com/2019/10/chinas-brides-and-grooms-to-sign-social-credit-promises-during-marriage-registrations/> [<https://perma.cc/7VHV-GR7V>].

244. See Lewis, *supra* note 121.

245. Eric Cheung, *‘Inherit the Red Gene’: China Issues Xi-Focused Morality Guidelines*, CNN (Oct. 30, 2019), <https://www.cnn.com/2019/10/30/asia/china-morality-xi-jinping-intl-hnk/index.html> [<https://perma.cc/4CN7-P2TL>].

246. D’Ambrosio, *supra* note 10. This relates to the notion of responsibility as a basis for social control described earlier. See HOFFMAN, *supra* note 195 and accompanying text.

247. See Wessel Reijers, Liav Orgad & Primavera de Filippi, *The Rise of Cybernetic Citizenship*, 69 AM. J. COMP. L. (forthcoming 2022), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4100884 [<https://perma.cc/4YHP-JCN4>] (comparing the role of SCS in China to scoring systems in liberal democracies).

ties to a religious imperative, which he labeled the “protestant ethic.”²⁴⁸ Whether legal compliance and reliable discharge of social obligations are seen as economically advantageous, morally commanded, or politically expedient for rulers is, to some degree, in the eye of the beholder. The same behavior serves all three goals.

As with other aspects of SCS, the details are still under development. The extent to which ethical and socially desirable behavior makes its way into SCS scoring systems is still up for debate. Unlike legal or economic activities which can be recorded reliably and precisely, the moral attributes of SCS give those choosing the categories and recording activities significant leeway. In response to public concerns, Chinese national health officials were forced to hold a press conference to announce that, while donating blood would be included as a positive factor in some SCS databases, failure to donate would not result in punishment or downgrading.²⁴⁹ This decision, however, is not binding on the many local and private SCS-based systems, nor is it immutable. Those concerned about the repressive potential of SCS will readily point out that, once established, the system could extend over time into more intimate aspects of daily life.²⁵⁰

The inclusion of something like blood donations as part of an assessment system for citizens illustrates both the appeal and the dangers of SCS.²⁵¹ Giving blood is, itself, an altruistic act.²⁵² It is a perfect example of a pro-social behavior that is essential to the smooth operation of modern healthcare systems, but largely outside the mechanics of the market economy. Those who give blood deserve our esteem. Should they not get credit, in every sense of the word, for doing so? It is quite likely that a machine learning algorithm would find statistical correlations between blood donors and other desirable traits, such as creditworthiness.

On the other hand, should blood donation records be incorporated into a system that is also used to discipline political dissidents? What if the records are incorporated into a national DNA database assembled by authorities without explicit consent? And what if someone cannot give blood, a category that in the U.S. currently includes monogamous gay men and anyone who spent more than three months in the United Kingdom between 1980 and 1996? The move beyond financial credit to social credit is necessarily fraught.

C. *A Mask for Arbitrary Authority?*

A major concern about SCS and similar systems is that they will not actually operate on the basis of consistent rules.²⁵³ One of the problems with

248. See MAX WEBER, *THE PROTESTANT ETHIC AND THE SPIRIT OF CAPITALISM* 35 (1905).

249. See *Health Officials Respond: Not Donating Blood Will Not Negatively Effect Social Credit*, TRIVIUM SOCIAL CREDIT (Nov. 27, 2019), <http://socialcredit.triviumchina.com/2019/11/health-officials-respond-not-donating-blood-will-not-negatively-effect-social-credit/> [<https://perma.cc/MQ62-DW46>].

250. See *id.*

251. See de Filippi, *supra* note 207.

252. Leaving out those who give blood to get paid.

253. See de Filippi, *supra* note 207.

algorithmic regulation generally is that algorithmic decisions may not be amenable to explanation and interpretability in the same way as human ones. Administrative law is based on the principle of reasoned explanation for decisions to restrain agency overreach or arbitrariness.²⁵⁴ That may be difficult to square with systems, such as those employing AI techniques of deep learning, which make decisions based on hidden patterns of correlations with no direct analogue to explanations humans can understand.²⁵⁵ Coglianesse and Lehr acknowledge this problem, but argue that algorithmic regulation can be made consistent with administrative procedure norms.²⁵⁶

With SCS, there is a further concern that not all decisions will be made according to the ostensibly unbiased rules of the ratings systems.²⁵⁷ There is still room for human involvement. In a place like China, that could well mean that, just as with the Chinese legal system, the formal rules only apply when the relevant government officials want them to.

China does not always follow its own rules.²⁵⁸ Li Hu, an investigative journalist in the city of Chongqing, was placed on an SCS blacklist based on a phantom claim that he failed to pay a court fine.²⁵⁹ He is convinced the authorities are using the system to punish dissidents.²⁶⁰ That is quite likely true. China, however, has many ways to silence critics, and it is not afraid to use them. Hu would quite likely have suffered a similar fate if SCS didn't exist.

A basic difference between a rule by law system such as China's and the rule by law systems of liberal democracies lies in the degree to which formal legal protections have practical meaning for those subject to them. It may be that the legislated and regulated elements of SCS—such as the right of Chinese citizens to view and correct SCS records, and the formal incorporation of SCS scores into government activities such as procurement—are not worth the paper they are written on. If so, SCS will be another example of how China under Xi, as Zhang and Ginsburg argue, is actually moving away from the rule of law by strengthening formal mechanisms of legalism.²⁶¹ In some ways, environments that constrain arbitrary state action on their face but enable it in practice are more dangerous than those in which the abuse is plain for all to see. It becomes more difficult to contest a decision when it is ostensibly made by a machine.

In addition, any data-driven system depends on the accuracy of the data that powers it. One of the potential benefits of SCS is that it can replace human judgment with hard data, by integrating the information in government databases

254. *Dep't of Commerce v. New York*, 139 S. Ct. 2551, 2556 (2019).

255. *See* ENGSTROM ET AL., *supra* note 132, at 28 (“[A]lgorithmic governance tools trigger a profound collision between administrative law’s requirement of transparency and reason-giving and the fact that many algorithmic decision tools are not, by their structure, fully explainable.”).

256. *See generally* Coglianesse & Lehr, *supra* note 135.

257. *Cf. id.*

258. *See* discussion *supra* note 224 and accompanying text.

259. *See* Matthew Carney, *Leave No Dark Corner*, ABC: AU (July 30, 2020), <https://www.abc.net.au/news/2018-09-18/china-social-credit-a-model-citizen-in-a-digital-dictatorship/10200278> [<https://perma.cc/LCG3-TFLM>].

260. *Id.*

261. *See* Zhang & Ginsburg, *supra* note 211, at 308–09.

and piping into feedback systems. What if, however, the initial data are unreliable?²⁶² In China, it is easy to imagine officials putting incorrect information into the government systems feeding SCS. This wouldn't necessarily be a top-down process. It might reflect a dispute between government entities, or a bureaucrat trying to make his or her numbers look better. By automating the loops between data, feedback, and enforcement consequences, SCS may remove opportunities for human review. Or there may not be sufficient checks to prevent nefarious insiders from altering information and scoring rules after the fact. If the means and motivation for corruption exist, an automated system like SCS might just shift where the corruption occurs.

SCS is also at risk of causing harm even when no one tries to manipulate the results. There are many ways algorithms can produce inaccurate outcomes, such as overfitting to noise in the training data used to build their models.²⁶³ Or they can pick up and even magnify patterns of historical discrimination, such as hiring systems biased against women and other groups.²⁶⁴ Today, SCS is built mostly around simple scoring rubrics, where the bases for decisions can be explicitly considered and evaluated after the fact.²⁶⁵ As it incorporates more AI and big data elements, it will need to adopt the technical and operational mechanisms of algorithmic accountability now emerging as best practices in the business world.

It is too early to make definitive statements about how consistently or effectively SCS is implemented in practice. China's extensive commitment to the system, and its benefits as a governance tool, suggest that there is more going on than simply covering up arbitrary authority with a shiny-looking technological interface.²⁶⁶ As with everything in China, however, the reality is likely to be complicated.

Even if China's social credit experience turns out to be corrupt or repressive, key elements of the system's design may still be worth adopting elsewhere. China may be ahead of the rest of the world in adoption of digital surveillance and algorithmic regulation.²⁶⁷ Its leaders may be particularly aggressive in promoting such approaches. They may emphasize some aspects, such as ethical behavior, more than their compatriots elsewhere. But China is not unique. The age of big data, algorithms, analytics, and artificial intelligence is

262. I am grateful to Martin Chorzempa for highlighting this possibility to me.

263. See Pedro Domingos, *A Few Useful Things to Know about Machine Learning*, 55 COMM'N ACM 78, 81 (2012).

264. See Solon Barocas & Andrew Selbst, *Big Data's Disparate Impact*, 104 CAL. L. REV. 671, 674 (2016).

265. See *id.*

266. The ongoing efforts to refine SCS support this interpretation. For example, Trivium China analyst Kendra Schaefer described the July 2020 NDRC proposed rules as an attempt to address "pushback from the business community re: the fragmented, disorganized implementation of the SCS." Kendra Schaefer (@kendraschaefer), TWITTER (Aug. 5, 2020, 9:20 PM), <https://twitter.com/kendraschaefer/status/1291182232820998146> [<https://perma.cc/X6VY-PMYH>]. Articles by Chinese scholars similarly express concern about the need to better coordinate the "chaos" of fragmented SCS activities. See Sun, *supra* note 44.

267. See generally Sun, *supra* note 44 (discussing how "[r]esearch and planning for a national credit score in China started in 1999, according to Lin Junyue, one of the most important minds behind the system").

upon us all. The crisis of trust in institutions both public and private is global.²⁶⁸ The challenges that China faces in devising a workable regime of algorithmic governance apply to other nations as well. And in nations where the rule of law is strong and corruption is restrained, a system like SCS might be implemented without producing the abuse or repression it generates in China. SCS is a model the rest of the world must evaluate.

IV. WATCHING THE WATCHERS

“*Quis custodiet ipsos custodes?*” queried the Roman poet Juvenal: “Who will guard the guards themselves?”²⁶⁹ This is, inevitably, among the most difficult questions for any system of authority. Both the effectiveness and the fairness of rules depend on constraining those who rule. Otherwise, there is nothing to stop even the most just system on paper from manifesting itself as the most lawless tyranny. The conventional solution is the rule of law: a combination of procedural requirements, institutional structures, and established norms that prevent those with power from abusing it.

The rule of law has proven remarkably effective in liberal democratic states.²⁷⁰ It now faces challenges from two directions. On one side are illiberal states, of which China is a premier example, which seem to achieve social stability and economic dynamism without the commitments the rule of law requires.²⁷¹ The alternative model is rising while liberal democracies such as the United States experience internal divisions and struggle in collective efforts such as Covid-19 response.²⁷² The argument that the Western liberal democratic model is demonstrably superior is becoming more difficult to make. China has not been shy about claiming that its more successful pandemic response demonstrates the superiority of its political system.²⁷³ The problem for China and other illiberal states is how to contain the corruption that inevitably arises when formal legal rules do not check the power of officials.²⁷⁴

The second challenge to the rule of law comes from the private sector. Major corporations have always enjoyed significant power to evade or prevent

268. See Indranil Ghosh, *The Global Trust Crisis*, FOREIGN POL’Y (Jan. 22, 2020, 2:24 PM), <https://foreignpolicy.com/2020/01/22/davos-world-leader-trust-institutions-populism-protest/> [https://perma.cc/TR7M-8YDV]; Sandra J. Sucher & Shalene Gupta, *The Trust Crisis*, HARV. BUS. REV. (July 16, 2019), <https://hbr.org/cover-story/2019/07/the-trust-crisis> [https://perma.cc/7CNL-8M7D]; WERBACH, *supra* note 208, at 18–20.

269. Juvenal, *Satire VI*, in SATIRE lines 347–348. This line is sometimes rendered as, “who will watch the watchers” or “who will watch the watchmen.”

270. See Orts, *supra* note 224.

271. See *id.*; Fareed Zakaria, *The Rise of Illiberal Democracy*, FOREIGN AFFS. (Nov./Dec. 1997), <https://www.foreignaffairs.com/articles/1997-11-01/rise-illiberal-democracy> [https://perma.cc/EMJ6-7J9H].

272. See Ted Piccone, *Rule of Law Takes a Big Hit During COVID-19*, BROOKINGS (Oct. 18, 2021), <https://www.brookings.edu/blog/order-from-chaos/2021/10/18/rule-of-law-takes-a-big-hit-during-covid-19/> [https://perma.cc/24T5-9B2C].

273. See, e.g., Lin Lan, *China’s Accountability System Centers on People While US Officials Boast Anti-Virus Achievements*, GLOBAL TIMES (Aug. 4, 2021, 11:46 PM), <https://www.globaltimes.cn/page/202108/1230612.shtml> [https://perma.cc/3LXC-4HKY].

274. See PEI, *supra* note 213, at 1.

legal restraints.²⁷⁵ The rise of digital platform businesses such as Google, Amazon, and Facebook, now among the world's most valuable corporations, further raises the bar. These firms have defeated every effort to rein in their collection and manipulation of data.²⁷⁶ They have done so by shaping the development of law itself.²⁷⁷ Individuals and businesses increasingly find their experiences dependent not on the laws imposed by governments, but upon the software and algorithmic rules of these digital powerhouses.²⁷⁸

Enter China's SCS. It is an embodiment of state power. Yet it is also a system to *constrain* power, both governmental and private.²⁷⁹ The SCS regime is a series of rules to channel algorithmic governance. Corporations and government agencies are already using big data to regulate behavior.²⁸⁰ SCS creates superstructures that could shape such activity in order to limited abuses and promote societal benefits. It responds to Juvenal's call to watch the watchers. Even in China, the national leadership has reasons to rein in the corruption of local officials, and to present itself to the people as a force against petty abuses of power. In liberal democracies, which enshrine the principle that no one is above the law, a system with elements of SCS could reinforce government accountability. Imagine an SCS-based system for handling police misconduct, for example.

In a country such as the United States, with its constitutional limits on certain exercises of governmental power, an explicit SCS-like system would look significantly different than the one China is building.²⁸¹ The point is not to endorse a Chinese-style Joint Punishment System, or any specific manifestation of SCS today. Abstracted from the Chinese context, SCS incorporates structural elements that may bear imitating. Just as many countries—including China—have adapted successful elements from the American political system into their own legal frameworks, while rejecting others, we can look to SCS as a paradigm for algorithmic regulation.

A. *SCS as Paradigm*

The SCS model is based on the Chinese focus on rule by law. The use of legal mechanisms, of which SCS is one, reflects a conscious choice of the most effective way to achieve regime goals. China could have implemented something like SCS without going through the formal processes of setting forth detailed policy pronouncements, establishing bilateral agreements between government agencies, specifying the structure of foundational databases, developing legal

275. See generally Amy Kapczynski, *The Law of Informational Capitalism*, 129 *YALE L.J.* 1460, 1480–96 (2020).

276. See *id.* at 1475–76.

277. See *id.* at 1462.

278. See ZUBOFF, *supra* note 20, at 17; COHEN, *supra* note 131; JONATHAN TAPLIN, *MOVE FAST AND BREAK THINGS* 10 (2018).

279. COHEN, *supra* note 131.

280. See *id.* at 9–10.

281. See Acello, *supra* note 10.

requirements around SCS data, and making that data widely available to integrate into other services.

As Orts observes, the rule by law approach focuses on “relative certainty and uniformity in the application of legal rules.”²⁸² It privileges predictability and transparency over substantive fairness. These are surely elements of a just legal or regulatory regime. Yet law can operate consistently and openly while still being rather unjust. Knowing that, for example, certain religious observance or speech is consistently considered seditious in China, and predictably results in imprisonment or worse, doesn’t make those policies acceptable within a human rights framework.

My goal is not to defend the Chinese system in its entirety. It is, instead, to highlight both the differences and the similarities between the Chinese and Western context. Where China diverges from liberal democracies, SCS helps us to better understand the nature of the Chinese project. SCS provides a window into China’s predilections, capabilities, and limitations. Even if one wishes to argue that Xi Jinping’s “Chinese Dream” is really a nightmare, one must at least take seriously the basis for its appeal.²⁸³

Concurrently, SCS reveals how, in an age transformed by the digital tornado of globally interconnected computer networks, data flows from ubiquitous devices, and information platforms, all societies face common challenges.²⁸⁴ How to govern our information ecosystems is an urgent question that animates important controversies over privacy, civic discourse, market power, security, economic development, and more.²⁸⁵ SCS epitomizes China’s response. It is a model for watching the watchers, both public and private.

The social credit model of governance embodies three dimensions:²⁸⁶

1. an infrastructure layer to integrate data and make it broadly available;
2. feedback mechanisms to leverage that data to promote outcomes; and
3. an integral oversight regime that establishes guiding principles and legal restraints.

As this definition makes clear, social credit systems incorporate elements of existing analytics and algorithmic rating platforms, but they are distinct from

282. Orts, *supra* note 224, at 94. Orts examines these elements in greater detail, building on the work of natural law theorist Lon Fuller. See LON L. FULLER, *THE MORALITY OF LAW* (1969).

283. For a discussion of the “Chinese Dream” slogan introduced in Xi Jinping’s early speeches as CCP leader, see Martin Patience, *What Does Xi Jinping’s China Dream Mean?*, BBC NEWS (June 6, 2013), <https://www.bbc.com/news/world-asia-china-22726375> [https://perma.cc/7EDD-V9LQ].

284. See Kevin Werbach, *Introduction: An Endless Spiral of Connectivity?*, in *AFTER THE DIGITAL TORNADO: NETWORKS, ALGORITHMS, HUMANITY* (2020).

285. See COHEN, *supra* note 131.

286. Karen Yeung’s taxonomy of algorithmic regulatory systems encompasses standard setting, information gathering, and behavior modification. See Yeung, *supra* note 135, at 507. SCS is a kind of meta system under this framework. The infrastructure layer described here relates to information gathering, although SCS is focused on aggregation and access to data rather than the initial collection. The feedback layer is the behavior modification, but concentrating on the exchange of information (such as joint punishment arrangements) and to making information more actionable through means such as blacklists. The oversight layer relates to standard-setting in Yeung’s taxonomy, although the SCS regime is more about rules for how the standards are set and enforced than those standards themselves.

them. Firms such as Google and Facebook create vast infrastructures to track and analyze their users, which they use primarily to generate targeted advertising revenues.²⁸⁷ They employ many similar techniques to the Chinese SCS. These are not full-blown social credit systems, however, because they lack the oversight layer that provides overall direction above and beyond standard business incentives.

The three dimensions of social credit answer the foundational questions for the distribution of power in society that Zuboff highlights in her book, *The Age of Surveillance Capitalism*: “Who knows? Who decides? And who decides who decides?”²⁸⁸ As she argues, building on the 19th century sociologist Emile Durkheim, surveillance capitalism structures itself according to the division of learning, rather than the industrial society’s division of labor.²⁸⁹ The division of labor gave power to the few in positions of management over the masses engaged in the work of production.²⁹⁰ The division of learning, by contrast, rewards those who control the mass of data. SCS can be understood as an effort to reorient the division of learning.

While the Chinese initiative is not currently oriented toward limiting the power of private data collection engines, it provides a framework that could be. SCS is, among other things, an assertion that not all personal data is a commodity. Ant Financial’s Sesame Credit app needed a government license to incorporate social credit data, which was terminated at the end of 2018.²⁹¹ Ant Financial also had to apologize and reverse course when it automatically opted in users to Sesame Credit, because of customer outrage.²⁹² This likely would not have occurred without the SCS.

As the next sections argue, the three major elements of social credit provide a roadmap for channeling algorithmic power.

B. *The Information Architecture of SCS*

1. *Data as Infrastructure*

Counterintuitively, SCS is a mechanism to resist data centralization. Foucault perceived that the panopticon “does not require a centralized authority; instead, it is most powerful when it is most widely dispersed among the civil and private institutions that regulate everyday life.”²⁹³ The logic of value capture impels repositories of data to wall it off as a private asset. Because AI systems improve with the volume of training data they ingest, the companies with the

287. Kapczynski, *supra* note 275, at 1470.

288. ZUBOFF, *supra* note 20, at 184.

289. *See id.* at 187.

290. *See id.*

291. *See supra* notes 100–01.

292. *See* Zen Soo, *Alibaba’s Payments Affiliate Apologises for Opting in Users for Credit Scoring System*, S. CHINA MORNING POST (Jan. 4, 2018, 5:09 AM), <https://www.scmp.com/tech/china-tech/article/2126772/chinas-ant-financial-apologises-over-alipay-user-data-gaffe> [https://perma.cc/2FVM-9EHB].

293. Cohen, *supra* note 3, at 186 (citing FOUCAULT, *supra* note 27, at 207–17, 222–27).

most data can generate the best models, reinforcing their competitive advantage.²⁹⁴ Viktor Mayer-Schönberger calls this the “feedback effect.”²⁹⁵ Current legal regimes are ineffective at preventing the Googles and Facebooks of the world from capitalizing on their vast data assets to build an insurmountable advantage.²⁹⁶ Breaking out of this dynamic requires approaches that counter the inherent centralizing dynamics at work.²⁹⁷

Social credit systematizes information collection about individuals and corporations. That collection process began much earlier, in both China and other countries.²⁹⁸ Already by the 1970s, there were well-developed systems in the United States and other countries to track loan repayment, purchasing habits, employee behavior, and customer transactions privately, in addition to taxation, accounting, and corporate reporting obligations established by the government.²⁹⁹ The law of privacy grew up around efforts by law enforcement and others to access communications records, banking information, and other data recorded incidentally in the course of ordinary transactions.³⁰⁰ Every new wave of technological innovation accelerated the availability of data: the internet, mobile phones, connected homes, connected cars, social media, health analytics, customer analytics, and people analytics. Governmental surveillance programs developed alongside private initiatives, gaining a significant boost after the 9/11 terrorist attacks in 2001.³⁰¹

There are now millions of surveillance cameras in the world, billions of camera-enabled smartphones tracking individuals in real-time, and billions of other devices capable of recording and transmitting photos and video.³⁰² Mainframes gave way to personal computers and to mobile devices; localized databases gave way to data centers and the cloud.³⁰³ Techniques of big data, analytics, and artificial intelligence were refined to process and make sense of

294. See VIKTOR MAYER-SCHÖNBERGER, *REINVENTING CAPITALISM IN THE AGE OF BIG DATA* (2018).

295. See *id.*

296. See *id.*

297. Mayer-Schönberger proposes “a progressive data-sharing mandate.” See Soo, *supra* note 292. Other scholars are exploring the concept of data trusts. These are legally enforceable arrangements for collective ownership of data. See Bianca Wylie & Sean Martin McDonald, *What is a Data Trust?*, CIGI (Oct. 9, 2018), <https://www.cigionline.org/articles/what-data-trust> [<https://perma.cc/JLT3-9A63>].

298. Creemers, *supra* note 43, at 4–5.

299. JOSH LAUER, *CREDITWORTHY: A HISTORY OF CONSUMER SURVEILLANCE AND FINANCIAL IDENTITY IN AMERICA* 210 (2017).

300. See Emmanuel Pernet-Leplay, *China’s Approach on Data Privacy Law: A Third Way Between the U.S. and the EU?*, 8 PENN ST. J. L. & INT’L. AFF. 1, 70 (2020).

301. See John Markoff, *Pentagon Plans a Computer System That Would Peek at Personal Data of Americans*, N.Y. TIMES (Nov. 9, 2002), <https://www.nytimes.com/2002/11/09/us/threats-responses-intelligence-pentagon-plans-computer-system-that-would-peek.html> [<https://perma.cc/2HGU-W7KE>].

302. Stanislava Ilic-Godfrey, *Artificial Intelligence: Taking on a Bigger Role in Our Future Security*, U.S. BUREAU OF LAB. STATS. (May 2021), https://www.bls.gov/opub/btn/volume-10/investigation-and-security-services.htm?view_full [<https://perma.cc/H9BQ-Z3PW>].

303. Naliabh Nishchhal, *What’s in The Cloud? And Why Everyone Want’s a Piece of It*, ANALYTICS VIDHYA (Apr. 15, 2021), <https://www.analyticsvidhya.com/blog/2021/04/what-is-cloud-computing/> [<https://perma.cc/J7VZ-FHUP>].

that data, and they in turn created pressure for further data acquisition to improve classifications and predictive models.³⁰⁴

China is at the forefront of this Cambrian explosion of data collection and analysis. With a population of 1.4 billion, over 800 million internet users, extremely high adoption levels of private and public digital services, and over 600 million mobile payments users in 2019,³⁰⁵ China represents by far the world's largest generator of individual-level digital transactional data. Every Chinese citizen has a unique government-issued identity number, which makes it easier to associate disparate activities with the same individual.³⁰⁶ That is paired with world-leading deployment rates of government digital monitoring, such as tracking of internet and social media activity as well as deployment of surveillance cameras and throughout the country.³⁰⁷ China is particularly dense in both the development and adoption of new AI-driven advances on those surveillance systems, most notably facial recognition technologies.³⁰⁸

All of this is to say that massive-scale personal data collection is not a harbinger of the Social Credit System; it is already happening. SCS implementation will accelerate data collection in some contexts.³⁰⁹ But the widespread creation of increasingly detailed “digital dossiers” about everyone, by both government and commercial entities, is not a distinguishing attribute of social credit mechanisms, either in China or elsewhere.³¹⁰

The characteristic aspect of social credit is the treatment of personal data collection and aggregation as infrastructure. Legal scholar Brett Frischmann defines infrastructure as “*shared means to many ends*” which typically incorporate significant government involvement, open access, and spillover benefits.³¹¹ Based on these attributes, infrastructural systems are platforms that provide significant societal benefits. Infrastructure may involve private activity, but that private activity is structured to generate value beyond the initial set of private actors and the use-cases they envision. Roads and telephone networks benefit everyone, not just those who build and operate them.

304. Alexander Y. Sun & Bridget R. Scanlon, *How Can Big Data and Machine Learning Benefit Environment and Water Management: A Survey of Methods, Applications, and Future Directions*, 14 ENV'T RSCH. LETTERS 1, 22–23 (2019).

305. See Xinhua, *China's Mobile-Payment Users Reach 621m in June*, STATE COUNCIL (Sept. 1, 2019, 3:26 PM), http://english.www.gov.cn/archive/statistics/201909/01/content_WS5d6b72a9c6d0c6695ff7f9ee.html [https://perma.cc/ZA9L-9VQS].

306. Creemers, *supra* note 43, at 20.

307. See Mozur, Zhong & Krolik, *supra* note 81; Denyer, *supra* note 193.

308. See Eamon Barrett, *In China, Facial Recognition Tech Is Watching You*, FORTUNE (Oct. 28, 2018, 9:00 AM), <https://fortune.com/2018/10/28/in-china-facial-recognition-tech-is-watching-you/> [https://perma.cc/JVZ9-YCK5]; Simon Denyer, *China's Watchful Eye*, WASH. POST (Jan. 7, 2018), <https://www.washingtonpost.com/news/world/wp/2018/01/07/feature/in-china-facial-recognition-is-sharp-end-of-a-drive-for-total-surveillance/> [https://perma.cc/ASN3-ECML].

309. See de Filippi, *supra* note 207 (suggesting that SCS might make Chinese citizens more eager to share personal information with the government).

310. DANIEL J. SOLOVE, *THE DIGITAL PERSON: TECHNOLOGY AND PRIVACY IN THE INFORMATION AGE* 13 (2004).

311. BRETT M. FRISCHMANN, *INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES* 4–5 (2012).

This is exactly the way China's SCS is architected. As Rogier Creemers, an expert on SCS at the University of Leiden, puts it, "the 2014 Plan focused on the creation of the underlying information infrastructure that would be required for the system's successful rollout. It systematically provided for standardized means to record credit-related information" ³¹²

The first step of the infrastructural approach to data collection is to regularize it. SCS requires that individuals and corporations provide certain data as a matter of course. ³¹³ Given how much data collection is already ongoing, however, the most significant change concerns what happens with that data, particularly once in the hands of government agencies. The legal foundations for SCS are a series of memorandums of understanding ("MOUs") between Chinese regulatory authorities. More than fifty such MOUs have already been signed. ³¹⁴ These bilateral arrangements allow, for example, taxing authorities to see which individuals have outstanding court fines, and vice versa. ³¹⁵ According to Trivium China analyst Kendra Schaefer, "The social credit system, at its core, is perhaps better described as a data sharing service; the more technical among you could reasonably think of it as a massive national [Application Programming Interface]." ³¹⁶ The NDRC rules announced in July 2020 reflect a continued effort to encompass data collection and sharing within a transparent and consistent legal framework. ³¹⁷

The second step in turning data into infrastructure is to make it openly available. Individual social credit records are available on a public website called Credit China. ³¹⁸ The National Enterprise Credit Information Publicity System ("NECIPS") provides analogous information for corporations. ³¹⁹ Moreover, as part of the SCS initiative, Chinese regulators are creating technical interfaces that allow third parties to access information based on their data collection. ³²⁰ This may include blacklists of those who fail to meet certain obligations, redlists of those with exemplary performance, other aggregate ratings, or raw data where consistent with privacy rules. Other government agencies can leverage this information, as can private entities. ³²¹

Thanks to this approach, a large ecosystem of SCS applications has already developed. ³²² Most of these are local and regional in nature. There are already

312. Creemers, *supra* note 43, at 13.

313. *Id.* at 11.

314. Jan Kajetan Kayo Woktynski, *China's Corporate Social Credit System Detrimental to Foreign Companies?*, ASIAN FOREIGN POL'Y INST. (June 22, 2021), <https://afpinstitute.org/chinas-corporate-social-credit-system-detrimental-to-foreign-companies/> [<https://perma.cc/N5GB-H8CG>] ("[F]or the time being, reward mechanisms are less developed than sanctions.").

315. *Id.*

316. See Schaefer, *Apps of Social Credit*, *supra* note 38.

317. See CHINA L. TRANSLATE, *supra* note 77.

318. Xinyong Zhongguo (信用中国) [CREDIT CHINA], <http://www.creditchina.gov.cn/> (last visited June 1, 2022) (<https://perma.cc/S32Y-4K7J>).

319. Guojia Qi Ye Xinyong Xinx Gongshi Xitong (国家企业信用信息公示系统) [NAT'L ENTER. CREDIT INFO. PUBLICITY SYS.], <http://www.gsxt.gov.cn/> (last visited May 29, 2022) [<https://perma.cc/5FLB-B34R>].

320. See Schaefer, *Apps of Social Credit*, *supra* note 38.

321. See *id.*

322. See *id.*

over 300 third-party applications and platforms based on SCS data.³²³ For example, the city of Xiamen launched an “Egret Points” mobile app, which gives each citizen a score of 0-1000 based on their social credit records.³²⁴ Although the city claimed 2.25 million enrollments (about half the city population), the app only had 210,000 registered users as of 2019.³²⁵ The most popular benefit for high scores is the ability to borrow library books for free.³²⁶

Turning data into infrastructure requires aggregation, but it does not necessarily involve collection of all information into a single database. Data must be transformed to adhere to common standards so that information from one source can accurately be correlated with information from elsewhere. That can be done, however, through a federated architecture, where data remains in its original storage location, but applications can pull information as needed from multiple databases to answer queries or built compound information resources.³²⁷

A common misunderstanding of SCS is that China is creating one central repository for every piece of information about its citizens.³²⁸ There is indeed a great deal of data aggregation taking place through the NCISP database. But many of the key government systems feeding into SCS are not directly connected today.³²⁹ And they may never be.³³⁰ The legal and technical arrangements for common access can make it seem to the end user as though they are, but someone must take the affirmative step to pull the necessary data. SCS is a unified legal and operational framework, but its data architecture is more federated than centralized.³³¹ As a result, “[t]here is great variety and innovation across and

323. *See id.*

324. *See id.*

325. *See id.*

326. *See Lewis, supra* note 121. Normally in China, borrowers must pay a deposit when checking out library books.

327. *See generally* Jarrett Retz, *Federated Architecture*, RAPIDAPI (June 14, 2021), <https://rapidapi.com/blog/federated-architecture/> [<https://perma.cc/M95J-G9SQ>].

328. *See* MEISSNER, *supra* note 186, at 5 (“[T]he government plans suggest a rather diversified and decentralized market for social credit ratings.”).

329. *See* Paul Mozur, *Inside China’s Dystopian Dreams: A.I., Shame and Lots of Cameras*, N.Y. TIMES (July 8, 2018), <https://www.nytimes.com/2018/07/08/business/china-surveillance-technology.html> [<https://perma.cc/NDW9-G3P9>] (“The system remains more of a digital patchwork than an all-seeing technological network. Many files still aren’t digitized, and others are on mismatched spreadsheets that can’t be easily reconciled.”); Liu, *supra* note 69, at 27; Schaefer, *supra* note 68 (“[S]everal state agencies host their own credit data platforms with equally poor interconnectivity”); Borak, *supra* note 100 (arguing that descriptions of SCS as one centralized system “fail[] to recognize just how fragmented digital credit score-keeping is in China”).

330. China actually has a well-developed regime of privacy laws, which formally restrain direct information aggregation among government agencies, especially outside national security and law enforcement applications. *See* Samm Sacks & Lorand Laskai, *China’s Privacy Conundrum*, SLATE (Feb. 7, 2019, 8:00 AM), <https://slate.com/technology/2019/02/china-consumer-data-protection-privacy-surveillance.html> [<https://perma.cc/P8CF-C5FW>]. Under a rule by law paradigm, these legal controls can be overcome when the CCP deems it necessary. As a default, however, they operate to limit China’s ability to put all data from all sources into one database.

331. Decentralization is also reflected in the variety of local experiments that implement or build on SCS in different ways throughout China. *See supra* note 171 and accompanying text.

between the actors [in SCS], even as they all feed information into a data backbone.”³³²

332. Bach, *supra* note 45, at 493.

2. *Analytics as Feedback*

The second limiting dimension of SCS is its focus on feedback. Once information is available as infrastructure, it can be used to influence behavior.³³³ Most traditional algorithmic systems based on personal data are opaque.³³⁴ Google does not tell users or advertisers exactly how it ranks search results. Facebook does not describe how it targets advertisements or organizes a user's newsfeed. Some of this obscurity is based on business interests. Keeping algorithms secret maintains competitive advantage and makes it harder for interested parties to game the system.³³⁵ Some of the opacity, however, is technical. AI systems, especially those based on the powerful approaches known as deep learning, work through finding statistical correlations that may have no clear explanation, as humans would understand it.³³⁶

Social credit systems involve transforming raw data into simpler decisional information that can be made public, either directly or as inputs to other systems. They use data science to put together datapoints, find patterns, and assemble rankings, tiers, or scores. The virtue of such mechanisms is twofold. They can easily be made into criteria for other algorithms, which can be simple and easily understood. For example, the province of Hebei uses corporate social credit for to evaluate bids for construction tenders.³³⁷ Bidders receive points based on information in their social credit records and elsewhere, with the highest scoring firm favored to win the job.

All the inputs to these evaluative systems are the product of data analytics on information in government databases.³³⁸ The scoring frameworks, in turn, incorporate those scores into rubrics, which are themselves a form of analytics. The result is data-driven decision-making. In the Hebei procurement context, deciding which firms to select for construction contracts rests on facts about past performance, rather than fallible or potentially corrupt human judgements. That, at least, is the idea. There is nothing new about making decisions about many things, from government contracts to private bank loans, based on simplified and regularized scoring frameworks of this sort.³³⁹ The differences in the SCS context are the breadth of decisions potentially subject to this mechanism, the automation of data collection and refining (as opposed to asking applicants to provide the data manually), and the scope of data points that feed into the system.

Like the treatment of data as infrastructure, the emphasis on feedback promotes transparency. Here it is transparency in the sense of internal legibility:

333. Backer, *China's Social Credit System*, *supra* note 49, at 212.

334. See Sylvia Lu, *Data Privacy, Human Rights, and Algorithmic Opacity*, 110 CAL. L. REV. 101, 118 (2022).

335. See *id.* at 115–16.

336. See Andrew D. Selbst & Solon Barocas, *The Intuitive Appeal of Explainable Machines*, 87 FORDHAM L. REV. 1085, 1113 (2018).

337. See Xin Wen, *Beijing-Tianjin-Hebei Advances Social Credit System*, CHINA DAILY (July 30, 2019, 9:06 AM), <http://www.chinadaily.com.cn/a/201907/30/WS5d3f9802a310d83056401ac7.html> [<https://perma.cc/82E7-2QKJ>].

338. See Sacks & Laskai, *supra* note 330.

339. See D'Ambrosio, *supra* note 10.

those subject to decisions have a clear matrix defining the bases for those decisions.³⁴⁰ The feedback approach emphasizes making the results of analytics visible to the subjects. This contrasts with the vast hidden economy of data brokers and advertising-driven behavior engineering.³⁴¹ It can be too manipulative, especially when done at the behest of the state. Properly limited, however, a feedback orientation emphasizes that the user is the subject, rather than the product being sold to third parties.

By providing more data, more reliable data, and more connections between data collected in different contexts, SCS creates a foundation for improved enforcement of government mandates. What makes SCS so potentially powerful, and so frightening to certain observers, however, is that it does not stop there. The idea is to create an environment in which citizens comply voluntarily, and even go beyond compliance. Enforcement is no longer necessary because there are no violations to punish. In this way, SCS is a grand “nudging” engine to influence nominally voluntary behaviors.³⁴² Transparency is essentially this motivational process. The SCS blacklists and redlists are readily accessible not only to the subjects, but to others as well. They function to shame violators.³⁴³

Third parties may use this information to decide whether or not do business with someone, similar to the sex offender registries widely deployed in the United States.³⁴⁴

Western descriptions of SCS sometimes tie it to China’s AI strategy, and suggest that SCS scores as based on sophisticated machine learning techniques to find and even anticipate violations.³⁴⁵ Yet today, as previously noted, China’s SCS today generally involves simple point systems rather than “black box” algorithms to generate its signals.³⁴⁶ Its feedback mechanisms are largely rubrics or blacklists rather than predictive models. If anything, the focus on feedback—which is inherently retrospective—might push SCS away from a predictive “precrime” approach. As future iterations incorporate more machine learning elements, the emphasis on explicit arrangements subject to defined procedures could provide openings for algorithmic accountability mechanisms. Even if this does not occur in China, the SCS framework could point the way for more effective oversight of AI-based predictive models in other jurisdictions.

340. Tobias D. Krafft, Katharina A. Zweig & Pascal D. König, *How to Regulate Algorithmic Decision-Making: A Framework of Regulatory Requirements for Different Applications*, 16 *REGUL. & GOVERNANCE* 119, 121 (2022).

341. See ZUBOFF, *supra* note 20, at 176–78; FRISCHMANN & SELINGER, *supra* note 144, at 116.

342. See THALER & SUNSTEIN, *supra* note 18, at 74.

343. See Backer, *supra* note 129, at 11.

344. See generally *Smith v. Doe*, 538 U.S. 84 (2003) (upholding the constitutionality of sex offender registries).

345. See Anderson, *supra* note 10. The Ant Financial Sesame Credit app used some (unspecified) data analytics techniques to compute its social credit scores.

346. See *supra* note 43 and accompanying text.

3. *Integral Oversight*

Perhaps the most direct way that SCS is a regime not only to exploit data but to control its exploitation is that oversight is a core attribute of the system. SCS is not just a framework for rewards and punishments; it is a framework for constructing that framework. And within that meta-framework are variety of structures to address the dangers of data analytics. As Thompson and Xin note, “there exists multiple effective non-judicial and judicial redress mechanisms to provide remedies and reparation for the citizens and legal persons.”³⁴⁷ Chinese citizens have the legal right to object to SCS decisions, and to correct information in the system. While as noted earlier, legal requirements in China are often honored in the breach, there have been over 2,700 legal claims filed by individuals over social credit records.³⁴⁸

SCS is a mechanism not only for regulating private actors, but for regulating the state itself.³⁴⁹ The 2014 State Council Notice describes sincerity in government affairs as the “crux of the social credit system’s construction[.]”³⁵⁰ By instantiating the implementation of government policy in rule-based, data-driven, computerized systems, human discretion is limited. Bending the rules for the powerful or in response to bribes is more difficult when enforcement is based on public scoring rubrics. A 2017 report noted that more than 480 city, regional, and national government entities in China appeared on SCS “distrusted entities” lists.³⁵¹

This exposed their leaders to joint punishment sanctions such as limitations on air and train travel, and curtailed the governments’ borrowing and investment activities.³⁵²

In this way, the SCS vision extends to watching the watchers.³⁵³ The State Council Notice calls for civil servants to be subject to the same “sincerity dossiers” of those subject to their rulings, with those dossiers used in performance evaluations and employment decisions.³⁵⁴ Even Chinese Communist Party membership is, according to these documents, subject to SCS disciplinary measures.³⁵⁵ Marcelo Thompson and Zhang Xin describe this comprehensive oversight function of SCS as a quasi-constitutional form of

347. Thompson & Xin, *supra* note 42, at 18.

348. *See id.* at 19–20.

349. *See id.* at 21.

350. *Id.* (quoting 2014 State Council Notice).

351. Liu, *supra* note 69, at 25.

352. *Id.*

353. Thompson & Xin, *supra* note 42, at 21. The question of “who guards the guards” is a pervasive criticism of Bentham’s idea for the panopticon. *See* JAMES E. CRIMMINS, THE BLOOMSBURY ENCYCLOPEDIA OF UTILITARIANISM 396 (2017). Bentham himself envisioned the panopticon applying to the guards and their political superiors as well as to the prisoners. *See* Janet Semple, *Foucault and Bentham: A Defense of Panopticism*, 4 UTILITAS 105 (1992).

354. *See* Thompson & Xin, *supra* note 42, at 21.

355. *See id.*

normative ordering.³⁵⁶ It replaces the privatized social ordering of commercial digital platforms with evaluation by criteria designed by public authorities.³⁵⁷

At the November 2019 SCS progress report press conference, NDRC policy office deputy director Meng Wei stressed that SCS must have a clear legal basis. Following a common format in speech of Chinese leadership, he then identified three “prevents”:

- Preventing credit record data collection from expanding beyond reasonable and appropriate boundaries;
- Preventing the unauthorized creation of blacklists and related punishments;
- Preventing the unauthorized or illegal applications of the credit system.³⁵⁸

Since the 2014 State Council Notice formally initiating the SCS effort, a large number of laws and regulations have been updated to facilitate the necessary data sharing, joint punishments, and other elements. The National People’s Congress, the Chinese national legislature, announced in November 2019 that it would develop a major new social credit law.³⁵⁹ Along the lines of comprehensive privacy regimes such as the European General Data Protection Regulation, this legislation will regulate the collection and use of social credit data.³⁶⁰ But it will also be designed to promote the development of SCS.

In the interim, the NDRC issued a set of proposed SCS rules for public comment in July 2020.³⁶¹ The framework is designed to harmonize SCS with the legal system in China. The proposed rules mandate, for example, that blacklists can only be used when there is an underlying violation of law, as well as some other harm, such as violation of a judicial enforcement order or a threat to health or safety.³⁶² Punishments must have an explicit legal basis, and cannot require actions by third parties such as banks.³⁶³ Blacklists must be subject to thirty days of public comment prior to implementation, and those blacklisted must be given both notice and the opportunity to contest the listing.³⁶⁴

356. *See id.* at 21–22.

357. *Id.* at 26.

358. *See* Schaefer, *supra* note 68.

359. *See id.*; *China to Speed Up Release of National Legal Framework for Social Credit*, TRIVIUM SOCIAL CREDIT (Sept. 2, 2019), <https://web.archive.org/web/20200919142918/http://socialcredit.triviumchina.com/2019/09/china-to-speed-up-release-of-national-legal-framework-for-social-credit/> [<https://perma.cc/GU6F-J7EX>].

360. *See* CHINA L. TRANSLATE, *supra* note 77.

361. *See id.*

362. *See id.* While this is an important restraint, it bears noting that in China, much conduct involving speech and political activity that would be legally-protected in liberal democracies could constitute a violation of law.

363. *See id.* These rules apply to governmental SCS implementations; privately operated systems along the lines of Ant Financial’s Sesame Credit can presumably impose penalties in their own services.

364. *See id.* These transparency and due process requirements, if consistently implemented, would exceed even those mandated by the European General Data Protection Regulation’s “automated processing” provisions. *See* Lilian Edwards & Michael Veale, *Slave to the Algorithm? Why a “Right to an Explanation” Is Probably Not the Remedy You are Looking For*, 16 DUKE L. & TECH. REV. 21 (2017) (articulating limitations of GDPR’s due process rights for “solely automated decisions”).

The draft NDRC rules mandate that blacklists include express mechanisms for removal or correction of inaccurate listings.³⁶⁵ Having consistent and effective mechanisms to correct inaccurate information would address a persistent fear about SCS. The Chinese tax authority has already outlined a set of procedures for repairing tax records.³⁶⁶ The local SCS ordinance in Shanghai includes a “right to be forgotten,” a mechanism for credit restoration, and a requirement that administrative agencies request social credit information only when reasonable.³⁶⁷ Of course, all these mechanisms depend on the relevant bureaucrats following through when receiving a valid request for correction.

Because of its public and explicit structure, SCS also provides opportunities for public pressure to alter outcomes. Chinese authorities do not always ignore popular outrage, especially when directed at local bureaucrats.³⁶⁸ Stability is maximized when people feel the rules are being consistently and fairly enforced.

Abuses of SCS are already receiving media coverage in China.³⁶⁹ For example, a schoolteacher in Shandong Province was added to a local blacklist in 2019 for beating late-arriving students with a textbook.³⁷⁰ This punishment was imposed by the local education committee on top of a suspension and other discipline imposed by the school.³⁷¹ The magnitude of the penalty, and the lack of connection between the punishment and the original conduct, provoked significant outcry.³⁷² The blacklisting was removed, and the story became national news. A similar case in Henan Province in 2020 involved a nine-year old child who was placed on spending restrictions for failure to pay a debt owed by her deceased father; this too was reversed after public outrage.³⁷³ Another example involved Ant Financial, which was forced to apologize to Sesame Credit users because a “clickwrap” agreement authorizing data collection was too small for most to notice.³⁷⁴

These incidents, and the fact they received coverage in China, show that countervailing pressures against unrestrained expansion of SCS exist domestically. A recent article originally published in the state-run *Xinhua Daily*

365. See CHINA L. TRANSLATE, *supra* note 77.

366. See *State Taxation Administration Clarifies Matters Related to Tax Credit Repair*, STATE TAX’N ADMIN. OF CHINA (Nov. 21, 2019), <http://www.chinatax.gov.cn/eng/c101269/c5140009/content.html> [https://perma.cc/9KJ5-BQCL].

367. See Dai, *supra* note 51, at 21.

368. See Sacks & Laskai, *supra* note 330.

369. See Xinmei Shen, *China’s Social Credit System Shows First Signs of Abuse, Report Says*, ABACUS CHINATECHCITY (Dec. 10, 2019, 9:01 AM), <https://www.abacusnews.com/china-tech-city/chinas-social-credit-system-shows-first-signs-abuse-report-says/article/3041425> [https://perma.cc/LW2M-56YT].

370. See *China to Improve, Prevent Abuse of Social Credit System: NDRC*, GLOB. TIMES (Aug. 18, 2019, 1:33 PM), <http://www.globaltimes.cn/content/1161784.shtml> [https://perma.cc/P5UL-9GHE].

371. See *id.*

372. See Qin Chen, *Nine-Year-Old Found Liable by Court for Dead Father’s Debts, and Punished Under China’s Social Credit System When She Couldn’t Pay Up*, S. CHINA MORNING POST (Dec. 24, 2020, 2:45 PM), <https://www.scmp.com/lifestyle/family-relationships/article/3115133/nine-year-old-found-liable-court-dead-fathers-debts> [https://perma.cc/35Q2-UTXF].

373. See *id.* Court-ordered spending restrictions in China were established separately from the SCS, but are part of the same general initiative.

374. See *Sesame Credit Apologizes for Alleged Alipay Privacy Violation*, GLOB. TIMES (Apr. 1, 2018, 2:08 PM), <http://www.globaltimes.cn/content/1083285.shtml> [https://perma.cc/XSH4-HWFK].

Telegraph noted that, “the tentacles of social credit management have extended to all aspects of residents’ lives. While refining social governance, it also raises concerns about the generalization of credit punishment.”³⁷⁵ It reported that in online polls 70% of Chinese respondents expressed concern about excessive scope and abuses of SCS.³⁷⁶ As SCS becomes more of a reality, oversight will become more specific and more coordinated.

C. *Perfecting Algorithmic Governance*

SCS is far from flawless, both in conception and execution. China under Xi Jinping is committed to a course of repression that seems to be strengthening over time.³⁷⁷ SCS will contribute to that repression; it would be naïve to suggest otherwise. It would be equally naïve to pretend that certain worrisome aspects of SCS, such as the use of data-driven feedback incentives to shape behavior, are unique to China. Algorithmic governance is growing even in liberal democracies with constitutional protections against unjust impositions of state power.³⁷⁸ The architecture of SCS can address some of the most critical problems with data-based regulatory mechanisms. SCS is, however, still a work in progress. There are ways it could be improved to better attack the flaws of regulation by algorithm.

1. *Beyond Dataism*

There are significant challenges to the algorithmic approach to governance and regulation. On the one hand, relying on data may overcome human biases and inefficiencies. On the other hand, it can produce an excessive focus on those things more easily measured or quantified, even if less important. Data may be inaccurate (either due to mistakes or deliberate falsification); algorithms may produce unfair outcomes; or situations may represent grey areas where straightforward application of the rules produces undesirable results.³⁷⁹ The opacity of algorithmic systems makes them problematic as tools of governance. As Jonathan Bach puts it, “[f]or the individual operating within this computationally imbricated society, rewards and punishments are generated and enforced by systems that operate on algorithmic principles beyond their knowledge.”³⁸⁰

Awareness of these kinds of problems is producing a large movement involving both policy and technical developments to promote algorithmic

375. Wang Jueping (王珏玢) & Pan Ye (潘晔), *Xinyong Chengjie Fan Hua Luan Xiang Diaocha: Bianjie Zai Nali? Ruhe Bei Lanyong?* (信用惩戒泛化乱象调查: 边界在哪里? 如何被滥用?) [Investigation of Generalized Chaos in Credit Punishment: Where Is the Boundary? How to Be Abused?] *Zhongguo Xinwen Wang* (中国新闻网) [CHINA NEWS] (July 13, 2020, 7:52 AM), <http://www.chinanews.com/gn/2020/07-13/9236503.shtml> [https://perma.cc/UNX3-FQK7].

376. *See id.*

377. *See supra* Section III.B.

378. *See supra* Section III.A.

379. *See supra* Section III.B.

380. Bach, *supra* note 45, at 496.

fairness, accountability, and transparency.³⁸¹ Literally dozens of AI ethics frameworks have been promulgated by governments, think tanks, and industry bodies around the world.³⁸² China is not missing out on the party.³⁸³ The challenge everywhere is to move beyond technical concepts and normative ideals to effective solutions. Principles alone are insufficient to address problems in the real world. What exactly do fairness, transparency, accountability, and similar concepts mean in practice? How can they be made enforceable, and what will push governments and corporations to implement them?

With SCS, China is tackling these challenges differently than America, Europe, and most other major countries. Until recently, there was no comprehensive Chinese regime governing data.³⁸⁴ A draft data protection law was first unveiled in October 2020.³⁸⁵ And as one might expect, Chinese data protection rules predominantly restrict private actors rather than government entities.³⁸⁶

There is no Chinese equivalent to the Fourth Amendment or U.S. legislation such as the Privacy Act limiting state collection, use, and dissemination of personal information.³⁸⁷

SCS is therefore the *de facto* Chinese data protection regime, especially as regards governmental activity. The national SCS rules proposed by NDRC in July 2020 specify that an inter-agency committee, with input from private-sector stakeholders and academic experts, will develop a catalog of “public credit information” that may be incorporated into SCS mechanisms.³⁸⁸ They also require purpose specification and meaningfully-granted consent for any associated data collection beyond pre-existing legal requirements.³⁸⁹ On paper, these obligations resemble the basic GDPR requirements for collection of personal information.

Even without over-arching national SCS laws, the various legal and technical underpinnings of the system serve to shape activities involving data

381. See *ACM Conference on Fairness, Accountability, and Transparency*, ACM FACCT (Jan. 9, 2022), <https://facctconference.org/> [<https://perma.cc/F9GZ-E3J8>] (linking to dozens of academic papers presented at a major annual conference on the topic).

382. One meta-analysis compared 36 major frameworks. See Jessica Field, Nele Achten, Hannah Hilligoss, Adam Christopher Nagy & Madhulika Srikumar, *Principled Artificial Intelligence: Mapping Consensus in Ethical and Rights-Based Approaches to Principles for AI* (Berkman Klein Ctr., Rsch. Publ’n No. 2020-1, E2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3518482 [<https://perma.cc/L3YD-GN6V>].

383. See Will Knight, *Why Does Beijing Suddenly Care About AI Ethics?*, MIT TECH. REV. (May 31, 2019), <https://www.technologyreview.com/2019/05/31/135129/why-does-china-suddenly-care-about-ai-ethics-and-privacy/> [<https://perma.cc/GZ9T-B68P>]; *China Issues Principles of Next Generation AI Governance*, ST. COUNCIL: XINHUA (June 18, 2019, 1:29 PM), http://english.www.gov.cn/state_council/ministries/2019/06/18/content_281476721086770.htm [<https://perma.cc/MZF4-2GVK>].

384. See Pernot-Leplay, *supra* note 298, at 19–20.

385. See Gil Zhang & Kate Yin, *A Look at China’s Draft of Personal Information Protection Law*, IAPP (Oct. 26, 2020), <https://iapp.org/news/a/a-look-at-chinas-draft-of-personal-data-protection-law/> [<https://perma.cc/HC7H-F4FHJ>].

386. See Pernot-Leplay, *supra* note 302, at 107; Tiffany Li, Jill Bronfman & Zhou Zhou, *Saving Face: Unfolding the Screen of Chinese Privacy Law*, J.L., INFO., & SCI. 4, 14 (2017).

387. Privacy Act of 1974, 5 U.S.C. § 552a.

388. See CHINA L. TRANSLATE, *supra* note 77.

389. See *id.*

toward the objectives of the state. Unlike the West, the great repositories of personal data in China will not be wholly owned by private digital platforms; they will depend on the systems that make up the SCS.³⁹⁰ The CCP's core concern is social stability, as a foundation for economic development and growth of China's stature in the world. Personal privacy and restraint of abusive or corrupt governmental practices flow not from human rights or concerns about market failures, but from a recognition that inappropriate treatment of data will produce unrest and distrust.

It is too early to declare that SCS will address the problems of dataism. It could well accentuate them, by enshrining the false belief that everything that matters can be counted, and everything that can be counted matters. Chinese authorities have not yet wrestled with the deep emerging challenges of algorithmic accountability any more than their Western counterparts. With SCS, however, there are at least points of contact to implement algorithmic oversight in the Chinese context.

2. *Further Refinements*

The forthcoming Chinese national SCS law and NDRC regulations should attack some of the oversight gaps in SCS. Two key enhancements could help to reinforce the desirable aspects. One is procedural and the other is technical.

In the corporate version of social credit, China appears to be pursuing a model of two-tier decision-making. The primary thrust of the corporate SCS in practice is not direct penalties or rewards on companies, but a screen for enforcement.³⁹¹ The algorithms modulate human regulatory and governance systems. They do not necessarily replace them. Corporate SCS scores are used to determine how frequently firms are subject to inspections or audits.³⁹² China's General Administration of Customs reported that for the first half of 2019, the average inspection rate for a "distrusted" enterprise was 98%, but for firms in the highest tier of SCS ratings, it was 0.5%.³⁹³ This is similar to the way that the Internal Revenue Service uses algorithms to screen tax returns for greater scrutiny and potential audits. The ultimate decision is still made by a human process, but the SCS layer improves efficiency and consistency. Such an approach can limit problems in which machine-based or data-driven conclusions fail to match up with the nuances of the real world.

The technical refinement is to employ privacy-protecting and decentralized technologies. In particular, blockchain and related cryptographic methods could limit opportunities for abuse and promote transparency. China is already exploring this possibility.³⁹⁴ Blockchain refers to a family of distributed ledger technologies that make it possible to verify the accuracy of information without

390. EUROPEAN CHAMBER OF COMMERCE IN CHINA, *supra* note 125, at 2.

391. *See id.* at 8.

392. *See id.* at 3.

393. *See id.* at 24.

394. *See Webster et al.*, *supra* note 162.

having to trust a central authority.³⁹⁵ A 2017 State Council planning document discusses employing artificial intelligence and blockchain to establish “a new type of social credit system.”³⁹⁶

China has been among the most aggressive countries in pursuing blockchain technology development.³⁹⁷ In addition to significant R&D efforts and corporate subsidies, the government is promoting the establishment of a national Blockchain Service Network,³⁹⁸ and China’s central bank is launching a digital currency based on distributed ledger concepts.³⁹⁹ A conference in Beijing in January 2020 drew experts from universities research institutes and industry to discuss ways that blockchain could be used in connection with SCS.⁴⁰⁰

A blockchain makes it nearly impossible to tamper with information, because no central entity has the power to change or erase records.⁴⁰¹ It also reduces the need to trust organizations managing the system, whether they be governments or private service providers. Actions on a blockchain can be executed through automated “smart contracts,” which provide sophisticated programmability.⁴⁰² China is promoting blockchain for similar reasons to its interest in SCS: it believes algorithmic solutions will be better means of increasing societal trust. How exactly SCS and blockchain will come together is fairly speculative at this point. China’s interest, though, suggests how it might address criticisms that the regularity, transparency, and oversight of SCS are illusory.

395. See WERBACH, *supra* note 208, at 14.

396. Guowuyuan Guanyu Yinfaxin Yidai Rengong Zhineng Fazhan Guihua de Tongzhi (国务院关于印发新一代人工智能发展规划的通知) [Notice of the State Council on Issuing the Development Plan on the New Generation of Artificial Intelligence] (written by St. Council, Guofa [2017] No. 35, July 8, 2017, released July 20, 2017), http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm [<https://perma.cc/LMM6-G69F>].

397. See Kevin Werbach, *Opinion: China is Pushing Toward Global Blockchain Dominance*, WIRED (Nov. 12, 2019, 9:00 AM), <https://www.wired.com/story/opinion-china-is-pushing-toward-global-blockchain-dominance/> [<https://perma.cc/FHY5-YLHG>]; Michael Sung, *China’s National Blockchain Will Change the World*, COINDESK (Sept. 14, 2021, 3:33 AM), <https://www.coindesk.com/chinas-national-blockchain-will-change-the-world> [<https://perma.cc/JQN8-KBE3>].

398. See Wolfie Zhao & David Pan, *Inside China’s Plan to Power Global Blockchain Adoption*, COINDESK (Sept. 14, 2021, 3:28 AM), <https://www.coindesk.com/inside-chinas-plan-to-power-global-blockchain-adoption> [<https://perma.cc/PC9L-K8Y8>].

399. See Jonathan Cheng, *China Rolls Out Pilot Test of Digital Currency*, WALL ST. J. (Apr. 20, 2020, 8:22 AM), <https://www.wsj.com/articles/china-rolls-out-pilot-test-of-digital-currency-11587385339> [<https://perma.cc/84MD-GW4S>].

400. See Adrian Zmudzinski, *Chinese Experts Suggest Using Blockchain Tech in ‘Social Credit’ System*, COINTELEGRAPH (Jan. 22, 2020), <https://cointelegraph.com/news/chinese-experts-suggest-using-blockchain-tech-in-social-credit-system> [<https://perma.cc/CT48-7794>].

401. See WERBACH, *supra* note 208, at 47.

402. See *id.* at 161.

V. CONCLUSION

China's Social Credit System resembles the proverbial elephant approached by a series of blind people. Perhaps not by accident.⁴⁰³ Each observer generalizes from the portion he or she encounters, missing the big picture. SCS is China's version of the Western credit reporting system, built in the internet era rather than the mainframe era. It is also the Chinese government's attempt to replace inefficient and sometimes corrupt human enforcement of the law with consistent machine-based systems, promoting public management and societal trust. At the same time, it could be a dangerous fusion of the worst aspects of surveillance capitalism and Chinese digital authoritarianism. It draws on Western principles of scientific management as well as Confucian ideals of social harmony. These are only a few of the ways SCS might appropriately be viewed.

This Article has attempted to provide a synoptic picture of the SCS panopticon. There remains, inevitably, significant room for interpretation. Asking whether China's Social Credit System is good or bad is like posing the same question about the internet. We have seen over the past twenty years the extraordinary benefits in terms of economic activity, innovation, and human connection that the internet revolution produced. We have also seen the horrible abuses, inequality, psychological harms, and other problems it created. All technologies embody certain affordances, but those natural attributes produce different consequences based on the economic, legal, cultural, and other aspects of the societies in which they flourish. The challenge for the future is to reinforce the beneficial aspects of globally networked digital technology, and limit its harmful proclivities.

In this battle, SCS deserves sustained attention. By deconstructing the Chinese initiative and observing its real-world implementation, we can identify principles and techniques that deserve replication elsewhere. We can also highlight those aspects democracies must resist.⁴⁰⁴

Social credit is, in the end, a manifestation of social capital.⁴⁰⁵ Unlike financial capital, social capital is a form of wealth that cannot be established by fiat. It must emerge from relationships and experience and communities. China's SCS seeks to aggregate and analyze countless weak signals to strengthen patterns of connections. Its immediate objective is compliance, and within the Chinese context, compliance may involve injustice that liberal democracies appropriately protest. The ultimate goal of a social credit regime, however, is to promote a

403. See Bach, *supra* note 45, at 498 (arguing that "strategic ambiguity" is a deliberate property of SCS, making the system palatable to multiple audiences and papering over its inherent contradictions).

404. See Evgeny Morozov, *The Case for Publicly Enforced Online Rights*, FINANCIAL TIMES (Sept. 28, 2018), <https://www.ft.com/content/5e62186c-c1a5-11e8-84cd-9e601db069b8> [<https://perma.cc/L3ME-8ZLJ>] ("Social credit" can surely lead to authoritarian excesses but so can democracies' reliance on private reputation systems that stand to weaken cherished constitutional guarantees.").

405. See ALEXIS DE TOCQUEVILLE ET AL, DEMOCRACY IN AMERICA 3 (1835); PIERRE BOURDIEU, OUTLINE OF A THEORY OF PRACTICE (1977); James Coleman, *Social Capital in the Creation of Human Capital*, 94 AM. J. SOCIOLOGY 94, 98 (1988); ROBERT PUTNAM, BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY (2000); JANE JACOBS, THE DEATH AND LIFE OF GREAT AMERICAN CITIES 138 (1961).

flourishing society.⁴⁰⁶ There is no reason that vision cannot be transposed to contexts in which a flourishing society equates more strongly with flourishing individuals.

Such speculations are necessarily general and preliminary at this point. China's SCS is a new and messy phenomenon. It is evolving rapidly through the process of implementation. Its Western analogues are significantly less developed. Merely describing the system is a great challenge. Yet we can touch enough of the elephant to recognize we are dealing with something quite large and quite important. The normative potential of SCS belies efforts to dismiss it as a horror that should be rejected at all costs.

This much is clear: we are already living in the panopticon. The question is what sort of panopticon we choose.

406. *See supra* Part I.

