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The Chinese social credit system: A model for other countries?

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Department of Law

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COUNTRIES?**

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Abstract

Many countries know financial consumer credit ratings, and recent years have also seen a proliferation of rating systems in relation to online platforms and in the 'sharing economy', such as eBay, Uber and Airbnb. In the view of many Western observers, however, the emerging Chinese Social Credit System indicates a paradigm shift compared to these former rating systems as it aims for a comprehensive and uniform social rating based on penalty and award mechanisms. By contrast, this paper suggests that the Social Credit System should be seen a specific instance of a wider phenomenon. Thus, it develops a framework that compares different rating systems by reference to their drafters, aims, scoring systems, application, use of algorithms, and enforcement; it identifies shortcomings of both low and high interventionist rating systems; and it discusses a range of regulatory approaches and emerging issues that law makers should consider.

Keywords

Social Credit System, Chinese law, reputation rankings, online platforms, law and technology

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1. Introduction*

It would be easy to assume none of this could happen here in the West.

But the 21st century is not going to work like that'.¹

'China's dystopian tech could be contagious'²

In 2014 the Chinese government issued a planning outline for the construction of a so-called 'Social Credit System' by 2020. The implementation of this plan is progressing quickly and it can be suggested that the Social Credit System will fundamentally change the life of all Chinese citizens. In a nutshell,³ its main innovation, once fully implemented, could be that each Chinese citizen will be given a score measuring their sincerity, honesty, and integrity, and that this score will then be a major determinant for their lives, for instance, whether to be able to get a credit, rent a flat, or buy a plane ticket, or being given preferred access to hospitals, universities and government services.

In this Chinese government programme, the notion of 'social credit' serves as an extension of mere financial scoring systems from elsewhere in the world,⁴ given that the Chinese 'social credit' score will consider a wide range of personal factors.⁵ It also resembles, but goes further than, a range of systems that are intended to increase the prominence of reputation in relation to transactions, online platforms and in the 'sharing economy'. In addition, the Chinese initiative will cover both companies and individuals; the latter is more novel (and more controversial), given the prevalence of ratings for the former in the financial sector and in fields such as corporate social responsibility.⁶ Thus, we focus here on rating systems concerning individual persons.

This paper is motivated by the fact that it cannot be assumed that 'what happens in China, stays in China'. The Social Credit system already applies to foreign workers and companies in China, and possibly also to all 'overseas Chinese and ethnic Chinese' regardless of their place of residence.⁷ In addition, it can be observed that China's economic, political and ideological influence leads to a general diffusion of Chinese law; writings about China's Belt and Road Initiative, the 'Beijing consensus' of development assistance, and the impact of Chinese investments in Africa, show that

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¹ John Harris, 'The tyranny of algorithms is part of our lives: soon they could rate everything we do' *The Guardian* (5 March 2018) <https://www.theguardian.com/commentisfree/2018/mar/05/algorithms-rate-credit-scores-finances-data>.

² Adam Greenfield, 'China's Dystopian Tech Could Be Contagious' *The Atlantic* (14 February 2018) <https://www.theatlantic.com/technology/archive/2018/02/chinas-dangerous-dream-of-urban-control/553097/>.

³ For details see 3., below.

⁴ See 2., below.

⁵ The term 'social credit' has also two further meanings that are outside the scope of this paper, namely, as an economic reform programme developed in the 1920s (see C.H. Douglas, *Social Credit*, Institute of Economic Democracy, 1924) and as a type of 'micro-credit aiming at fighting poverty' (see Fernando A. F. Ferreira et al. 'A Socio-Technical Approach to the Evaluation of Social Credit Applications' (forthcoming) *Journal of the Operational Research Society* DOI: 10.1080/01605682.2017.1415650).

⁶ Despite many differences, see e.g. Larry Catá Backer, 'Next Generation Law: Data Driven Governance and Accountability Based Regulatory Systems in the West, and Social Credit Regimes in China', Working Paper (7 July 2018), available at <https://ssrn.com/abstract=3209997>.

⁷ See Samantha Hoffman, 'Social credit: technology-enhanced authoritarian control with global consequences', Policy Brief Report No.6/2018, available at <http://apo.org.au/node/180186>.

China's influence abroad is not merely of an economic nature but that it increasingly shapes law and policy elsewhere.⁸

It may of course be argued that the Social Credit System is something that should be seen as not a model but as a counter-model for other countries.⁹ We seek to provide a critical but also nuanced and measured assessment, against a backdrop of typical 'Western' responses which simply dismiss the Social Credit System as 'Orwellian', and a general lack of any critical debate on the topic in China.¹⁰ In particular, this paper will also address the predominantly Western debates on the importance of reputation and grading/ranking and on the power of algorithms, showing that this new Chinese system can be seen a specific instance of a wider phenomenon. Even more so, as reputation-based quantitative tools have become established in the West, the Social Credit System may tell us something about their evolution in Western countries (or even the future of global normative orders¹¹).

Accordingly, this paper is interested in a number of overlapping research questions: to start with, how can we understand both the Chinese and Western systems by reference to their drafters, aims, scoring systems, application, use of algorithms, and enforcement? Is it then the case that the Social Credit System is based on a unique strongly interventionist logic, or could there be mixtures between the Chinese and Western models? And if reputation and rating systems consolidate in Western markets in a similar fashion, what opportunities, features, controversies, and pitfalls will arise? And how could law makers intervene if this happens?

The corresponding structure of this paper is as follows. Part 2 maps the general debate about reputation, ranking and rating in the West (setting out salient features of its history in credit scoring and related systems, and identifying the significance of reputation data for online business and the 'sharing' or peer-to-peer economy); we conclude this part by considering certain controversies regarding such data, and setting out an initial framework for analysis. Then, Part 3 explains the operation of China's Social Credit System today as well as likely future developments. On this basis, Part 4 compares and evaluates both of these systems, identifying shortcomings of low and high interventionist rating systems, and assessing a range of regulatory approaches. Part 5 concludes.

2. Reputation, ranking, and rating

2.1 A short history

Although the identification and dissemination of reputational information has formed an important aspect of 21st-century e-commerce and sharing economy business models, the concept is certainly a more established one. The best known is probably found in the financial sector, where the 'rating' of the creditworthiness of companies, institutions, individuals, and financial instruments (e.g. bonds) has a longer history,¹² and has progressed beyond narrower, single-purpose origins to becoming a 'key component of global financial governance'.¹³

⁸ See e.g. Samuli Seppänen, 'Chinese Legal Development Assistance: Which Rule of Law? Whose Pragmatism?' (2018) 51 *Vanderbilt Journal of Transnational Law* 101; Wenxian Zhang, Ilan Alon, and Christoph Lattemann (eds.), *China's Belt and Road Initiative: Changing the Rules of Globalization* (Palgrave 2018).

⁹ Or if it were to influence other countries, it may be argued that it should be seen as a 'malicious legal transplant', cf. Mathias Siems, 'Malicious Legal Transplants' (2018) 38 *Legal Studies* 103.

¹⁰ See further 3.5 and 3.6, below.

¹¹ Cf. Larry Catá Backer, 'And an Algorithm to Bind them All? Social Credit, Data Driven Governance, and the Emergence of an Operating System for Global Normative Orders', Working Paper (21 May 2018), available at <https://ssrn.com/abstract=3182889>.

¹² Donncha Marron, *Consumer Credit in the United States* (Palgrave Macmillan 2009) 100.

¹³ Bruce Carruthers, 'From uncertainty toward risk: the case of credit ratings' (2013) 11 *Socio-Economic Review* 525, 530.

In Lauer's history of the development of consumer credit reporting and scoring in the United States since the 19th century, he emphasises the development of an information infrastructure in finance, including shifts towards a quantitative basis throughout the 20th century, and computerisation and the application of statistical methods to risk and creditworthiness from the 1960s onwards.¹⁴ Other significant developments include the emphasis upon individual 'scores' in the late 20th century,¹⁵ and continuous monitoring and surveillance rather than simple blacklisting¹⁶ (or, as Pasquale puts it regarding the 21st century, the move to a 'scored society' in place of mere credit scores¹⁷). These developments sit within the a longer trajectory towards increased access to information which has, since the 18th century, driven 'fact- and theory-based approaches to issues of finance and credit' (in respect of individuals and companies) and attempted to neutralise 'irrationality' and misunderstanding¹⁸ and replace uncertainty with an assessment of risk.¹⁹ The increased involvement of mainstream banks in credit scoring, from the 1960s onwards, has also supported an algorithmic-led approach to risk and the likelihood of repayment.²⁰

Credit scoring has also developed in the UK and across Europe²¹ – although different legal and cultural approaches to data protection have meant that the pace of change has been different. Corporate transactions, such as the acquisition of Experian (formerly TRW, a major player from the computer age in the US²²) by Great Universal Stores (a UK-based mail order retailer which had developed a successful credit scoring function of its own)²³, have promoted further convergence.

These financial matters form part of a broader trend. Classification systems and the urge to classify have deep roots in human societies, but were a major feature of scientific and capitalist development in the 20th century; they are ubiquitous and built into every aspect of social and commercial life, and combine 'social organization, moral order, and layers of technical integration'.²⁴ The late 20th century also saw the rise in popularity of key performance indicators, 'league tables', and the like, as part of the New Public Management revolution²⁵ and a shift towards the 'production of performance

¹⁴ Josh Lauer, *Creditworthy: A History of Consumer Surveillance and Financial Identity in America* (Columbia University Press 2017) 40 and 183.

¹⁵ Ibid 249.

¹⁶ Marron, above n 12, at 105-7; Lauer, above n 14, at 60.

¹⁷ Frank Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information* (Harvard University Press 2015) 22-25. See also Rachel Botsman and Roo Rogers, *What's Mine is Yours: How Collaborative Consumption is Changing the Way we Live* (Collins 2010) 217 (on how the 20th-century importance of credit ratings relates to 'consumers operating in a hyper-individualistic world' rather than the position of individuals within a community).

¹⁸ Jeremy Black, *The Power of Knowledge: How Information and Technology Made the Modern World* (Yale University Press 2014) 193.

¹⁹ Carruthers, above n 13, at 529.

²⁰ Lauer, above n 14, at 191.

²¹ Thomas Wainwright, 'Elite Knowledges: Framing Risk and the Geographies of Credit' (2011) 43 *Environment & Planning A* 650, 653 (highlighting the later adoption of methods in the UK, influenced by US practices); Akos Rona-Tas and Alya Guseva, 'Consumer Credit in Comparative Perspective' (2018) 44 *Annual Review of Sociology* 55, 62-64 (for a general survey).

²² Marron, above n 12, at 104.

²³ Nigel Cope, 'GUS shares soar on £1bn acquisition' *The Independent* (15 November 1996). Ten years later, the (combined) credit scoring business was demerged: Simon English, 'Experian to raise new equity in demerger from GUS' *The Independent* (29 March 2006).

²⁴ Geoffrey Bowker and Susan Star, *Sorting Things Out: Classification and its Consequences* (MIT Press 1999) 33, 37 (ubiquity), 3-5 (historical understandings), 324-5 (integration into information systems).

²⁵ Christopher Pollitt and Geert Bouckaert, *Public Management Reform: A Comparative Analysis* (Oxford University Press 2011) 106-111; Christopher Hood and Ruth Dixon, *A Government that Worked Better and Cost Less?: Evaluating Three Decades of Reform and Change in UK Central Government* (Oxford University Press 2015) ch 3; Wendy Nelson Espeland

information with regulatory or quasi-regulatory purposes²⁶. Well-known examples include assigning core research funding to universities in the United Kingdom (and, increasingly, elsewhere),²⁷ and the evaluation of federal government programmes in the United States.²⁸ The economic impact of prizes for contemporary art²⁹ and the grading of restaurants³⁰ has been observed.

For individuals in labour markets, we see schemes such as quantitative approaches to determining the promotion of civil servants in the European Union.³¹ In the last year alone, new developments in the UK include a requirement (imposed by competition and financial regulators) that financial institutions provide information on how likely customers would be to recommend its services to others,³² and a proposed extension of a scheme attempting to measure the quality of university teaching beyond institutions to individual subjects, described by the responsible Minister as akin to the financial services comparison site MoneySupermarket.³³ These ‘calculative practices [which] render previously incomparable elements visible and comparable’³⁴, while mostly focused upon institutions rather than individuals, normalise the collection and communication of data in this fashion, and allow for more effective methods of presentation and analysis.

As well as highlighting the benefits of an ‘objective’ approach,³⁵ contemporary versions of credit scoring and new public management also have in common a tendency to collect and analyse data at a relatively centralised level; that is, it is the credit scoring agency or the public audit authority that is gathering data (albeit from multiple sources) and providing advice (or at least aggregated and sometimes ranked data) on the performance, solvency, or quality of the data subjects. In other cases, however, the ‘score’ (whether concerning an individual or an institution) will simply reflect the data

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and Michael Sauder, ‘Rankings and Reactivity: How Public Measures Recreate Social Worlds’ (2007) 113 *American Journal of Sociology* 1.

²⁶ Afshin Mehrpouya and Rita Samiolo, ‘Performance Measurement in Global Governance: Ranking and the Politics of Variability’ (2016) 55 *Accounting, Organizations and Society* 12, 13.

²⁷ Rob van Gestel, ‘Ranking, Peer Review, Bibliometrics and Alternative Ways to Improve the Quality of Doctrinal Legal Scholarship’ in Rob van Gestel, Hans-W. Micklitz and Edward Rubin, *Rethinking Legal Scholarship: A Transatlantic Dialogue* (Cambridge University Press 2017); Mary Henkel and Maurice Kogan, ‘United Kingdom’ in David Dill and Frans van Vught (eds), *National Innovation and the Academic Research Enterprise* (Johns Hopkins University Press 2010).

²⁸ John Gilmour, ‘Implementing OMB’s Program Assessment Rating Tool (PART): Meeting the Challenges of Integrating Budget and Performance’ (2007) 7 *OECD Journal on Budgeting* 1.

²⁹ Pierre Pénet and Kangsan Lee, ‘Prize & Price: The Turner Prize as a Valuation Device in the Contemporary Art Market’ (2014) 43 *Poetics* 149.

³⁰ Lucien Karpik, *Valuing the Unique: The Economics of Singularities* (Princeton University Press 2010, tr. Nora Scott) 77-80.

³¹ E.g. Staff Regulations of Officials of the European Union, Regulation 259/68, [1968] OJ L 56/1 (as amended); see further Carolyn Ban, ‘Performance Appraisal and Promotion in the European Commission: the Challenge of Linking Organizational and Individual Accountability’ (conference paper, Accountability and Governance in International Organizations, Konstanz, June 2008) <http://www.pitt.edu/~cban/Research/Ban%20EC%20accountability%20paper.doc>

³² Competition and Markets Authority, ‘Banks scored on quality of service’ (15 August 2018) <https://www.gov.uk/government/news/banks-scored-on-quality-of-service>; Financial Conduct Authority, ‘Making it easier to use and compare current accounts’ (15 August 2018) <https://www.fca.org.uk/news/news-stories/making-it-easier-use-and-compare-current-accounts>.

³³ Department for Education, ‘Universities to be rated by subject quality’ (12 March 2018) <https://www.gov.uk/government/news/universities-to-be-rated-by-subject-quality>; see Eleanor Busby, ‘University degree courses to be ranked in ‘MoneySuperMarket’ style system, minister says’ *The Independent* (12 March 2018) <https://www.independent.co.uk/news/education/education-news/degree-courses-university-students-rankings-teaching-excellence-framework-sam-gyimah-a8251866.html>.

³⁴ Martin Kornberger and Chris Carter, ‘Manufacturing Competition: How Accounting Practices Shape Strategy Making in Cities’ (2010) 23 *Accounting, Auditing & Accountability Journal* 325, 332.

³⁵ As emphasised by Marron, above n 12, at 104.

submitted by users of a given service – whether that be regarding the service provider or, as in the case of certain online businesses, other service users.

2.2 From eBay to Uber and beyond

The success of eBay and related sites has long been attributed, in part, to the way in which a platform has become ‘trusted’ by users and how well-understood information asymmetries are handled and countered. Trust in a sales platform is said to be a combination of payment security, reliable and affordable schemes for dispute resolution, and – of present interest – ‘trust building measures like the mutual rating system which allows for online reputation’.³⁶ eBay’s reputation system, where buyers and sellers rate each other (with comments published for all to see), was added very shortly after it began business, in order to address allegations of cheating; it became an established feature of the site and is still in operation.³⁷ Indeed, the different aspects of trust are interlinked as, for instance, a failure to engage with the dispute resolution process affects the reputation of a user.³⁸ Moreover, a user’s ability to trade in the future will be affected by their score and feedback and therefore by their earlier actions;³⁹ eBay’s system has seen high levels of participation, with traders with positive reputations found to be more likely to succeed in selling items on the platform;⁴⁰ it also allows eBay to exclude from the marketplace users with very low ratings.⁴¹

Present-day observers note that online trust encompasses ‘digital social capital’ and various means of certifying and validating market participants.⁴² This however draws upon a longer history of identifying the reliability of individuals: Lauer highlights how credit systems which valorised character and hard work rather than social standing were an important facilitator of the emergence of US consumer capitalism,⁴³ while Packin and Lev-Aretz point to the more recent use of big data and the analysis of ‘online social footprints’ as a proxy for character, which in the history of credit scoring is seen as a reliable predictor of the ability and likelihood of repayment.⁴⁴ Unsurprisingly, the overlapping developments in reputation, big data, analytics, and Internet-driven business models, lead some to conclude that we now live in a ‘reputation economy’ where reputation is an asset.⁴⁵

As the ‘sharing economy’ or ‘collaborative economy’ emerged as the latest Internet phenomenon (and business catchphrase) in recent years, the role of reputational systems has also been obvious. The sharing economy purports to be based around interpersonal relations and seeking an alternative to ‘functional, cold and impersonal relations engendered by capitalism’ with authenticity and trust.⁴⁶ Consequently, all major economy platforms, such as Uber, Airbnb, and TaskRabbit, and indeed

³⁶ Graf-Peter Calliess, ‘Online Dispute Resolution: Consumer Redress in a Global Market Place’ (2006) 7 *German Law Journal* 647, 652.

³⁷ Clay Shirky, *Cognitive Surplus: Creativity and Generosity in a Connected Age* (Allen Lane 2010) 177-8.

³⁸ Calliess, above n 36, at 653.

³⁹ Botsman and Rogers, above n 17, at 140.

⁴⁰ Paul Resnik and Richard Zeckhauser, ‘Trust Among Strangers in Internet Transactions: Empirical Analysis of eBay’s Reputation System’ in Michael Baye (ed.) *The Economics of the Internet and E-commerce* (Emerald 2002).

⁴¹ Cliff Lampe, ‘The Role of Reputation Systems in Managing Online Communities’ in Hassan Masum and Mark Tovey (eds), *The Reputation Society: How Online Opinions Are Shaping The Offline World* (MIT Press 2012) 82.

⁴² Arun Sundararajan, *The Sharing Economy: The End of Employment and the Rise of Crowd-based Capitalism* (MIT Press 2016) 61.

⁴³ Lauer, above n 14, at 26, 33.

⁴⁴ Nizan Geslevich Packin & Yafit Lev-Aretz, ‘On Social Credit and the Right To Be Un-networked’ [2016] *Columbia Business Law Review* 339, 343.

⁴⁵ Michael Fertik and David Thompson, *The Reputation Economy* (Random House 2015).

⁴⁶ Nicholas John, *The Age of Sharing* (Polity Press 2017) 148.

precursors such as CouchSurfing, make use of a combination of scoring and feedback systems.⁴⁷ The availability of a community of users familiar with eBay-like feedback schemes and social media services, and the technological innovation that facilitated reputation-based services on earlier sites, is a factor in the rapid adoption of sharing economy services.⁴⁸ Indeed, the wider economic shift towards peer-to-peer provision, and indeed the reshaping of labour markets in the ‘gig’ economy, continues to see reputational information emphasised as a key component of the model.

How is reputational data used in these contexts? An obvious example is ridesharing services, where drivers and passengers rate each other. A driver with a comparatively low score (the aggregate of passenger scores) can ultimately be removed from the platform or restricted to providing a more limited range of services,⁴⁹ while a passenger is more likely to be picked up if they have a high rating from past drivers⁵⁰ (passenger ratings were formerly not visible to passengers or required effort to view, but a 2017 change meant that a passenger sees their own rating each time they use the app).⁵¹ Airbnb feedback often includes detailed accounts of visitor experiences, with hosts having the opportunity to add their own comments in reply; a good reputation score for a host means that their accommodation may be returned at the top of search results.⁵² A good reputation appears to be correlated with an ability to demand higher prices, though there is variation between how the strength of reputation is measured (e.g. mean score vs number of positive reviews).⁵³ Another example of the use of reputational mechanisms is ‘gamification’, where platforms build in tools inspired by the mechanisms developed and perfected within the computer game sector for other purposes,⁵⁴ to incentivise good behaviour and drive active participation and engagement over a longer period.⁵⁵ Such

⁴⁷ Botsman and Rogers, above n 17, at 178-9 (reputation on couchsurfing.com), 217 (‘with the Web we leave a reputation trail’, i.e. ‘a cumulative record of how well we collaborate and if we can be trusted’).

⁴⁸ Sundararajan, above n 42, at 25; Brad Stone, *The Upstarts: How Uber, Airbnb and the Killer Companies of the New Silicon Valley are Changing the World* (Transworld 2017) 10-11 (‘Airbnb and Uber substituted [for older regulatory regimes] the self-policing tools pioneered by internet marketplaces like eBay – riders graded their drivers and guests evaluated their hosts, and vice versa’); Joel Klein, ‘Baby, you can drive my car’ *Time* (9 February 2015) 34 (‘the key to this shift was the discovery that while we totally distrust strangers, we totally trust people...many sharing-company founders have one thing in common: they worked at eBay and, in bits and pieces, recreated that company’s trust and safety division...its innovation was getting both the provider and the user to rate each other’).

⁴⁹ In the early (2012) service Sidecar, drivers were only eligible to use the platform if their score remained above a required minimum: Stone, above n 48, at 197-8. Uber allows drivers with higher ratings to provide higher-priced services (Uber Exec and Uber Lux): *Uber BV v Aslam* (UK Employment Appeals Tribunal, 10 November 2017) [9] and deactivates (after notices and opportunities to improve) the accounts of drivers with low ratings - below 4.4 out of 5 (ibid, [29], [56]) – or, allegedly, below 4.7 in some situations: Tom Slee, *What’s yours is mine: against the sharing economy* (Scribe 2017) loc 1286.

⁵⁰ Rebecca Rose, ‘The shame of my very low Uber rating’ *Financial Times* (4 July 2018). On identifying reliable customers for new business models through reputation systems, see Lisa Gansky, *The Mesh: Why the Future of Business is Sharing* (Penguin 2010) 105.

⁵¹ Mike Truong and Ronak Trivedi, ‘Updates to the rating system’ (Uber, 26 April 2017) http://www.uber.com/en_GB/newsroom/ratingsupdate-2/.

⁵² Georgios Zervas, Davide Prosperio and John Byers, ‘A First Look at Online Reputation on Airbnb, Where Every Stay is Above Average’, Working Paper (25 January 2015), available at <https://papers.ssrn.com/abstract=2554500>.

⁵³ Will Qiu, Palo Parigi and Bruno Abrahao, ‘More Stars or More Reviews? Differential Effects of Reputation on Trust in the Sharing Economy’ [2018] *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* 153.

⁵⁴ E.g. ‘taking things that aren’t games and trying to make them feel more like games’: Flavio Escribano, ‘Gamification As the Post-Modern Phalanstère’ in Peter Zackariasson and Timothy Wilson (eds), *The Video Game Industry: Formation, Present State, and Future* (Routledge 2014) 201; ‘providing us with voluntary obstacles related to our real-world activity and by giving us better feedback really can help us make a better effort’: Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (Vintage 2012) 148.

⁵⁵ Juho Hamari, Mimmi Sjöklint and Antii Ukkonen, ‘The Sharing Economy: Why People Participate in Collaborative Consumption’ (2016) 67 *Journal of the Association for Information Science and Technology* 2047 (in general); Slee, above n 49, at loc 1274 (Uber drivers); Sarah Mason, ‘High score, low pay: why the gig economy loves gamification’ *The*

tools (which are also being used in other sectors, such as education) include progress between levels, the collection of points, and the availability of rewards.⁵⁶

2.3 Regulating rating and reputation systems

What is the role of the state, and of various means of legal control or oversight, in the systems discussed in the above paragraphs? In a limited number of cases, state authorities have initiated schemes that purport to ‘rate’ individuals (albeit on a simpler basis of passing a threshold rather than a comprehensive ranking). For instance, some countries use a point-based immigration system.⁵⁷ Another example across many European states is the introduction of ‘penalty points’ as a method of enforcing road traffic law, alongside or in substitution for the more conventional means of the court system.⁵⁸ These penalty point systems have seen limited development; they are, for instance, normally confined to single states. However, the value of such data as an indication of the ‘reputation’ of the data subject, for various purposes, has become clear;⁵⁹ in particular, car hire companies can choose not to rent cars to drivers who have exceeded a particular limit of penalty points.⁶⁰

In other cases (and more characteristic of the development of these systems in the countries discussed in this part), the nexus between the state and rating and reputation systems is through acquiescence and encouragement, rather than the system being managed by a public authority. While consumer credit scoring has predominantly been a private sector activity, it has certainly benefitted from ostensibly unrelated aspects of public administration, such as the creation of a unique identifier for individuals in the US for social security purposes.⁶¹ Public bodies engaged with the financial system can also play a role in standardising the use of private data through the exercise of their functions.⁶² More generally, the (private) rating of bonds has long played a role in public finances, including statutory requirements.⁶³

States also play a key role through forbearance (especially beyond higher profile systems such as credit); the nature of many sharing economy business models, where licensing or registration is absent, means that heavy emphasis is placed by users on the quality of reputational information provided

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Guardian (20 November 2018) <https://www.theguardian.com/business/2018/nov/20/high-score-low-pay-gamification-lyft-uber-drivers-ride-hailing-gig-economy> (Lyft drivers).

⁵⁶ E.g. Amy DuVernet, Alberto Asquer and Inna Krackkovskaya, ‘The Gamification Of Education and Business: A Critical Analysis and Future Research Prospects’ in F. Xavier Olleros and Majlinda Zhegu (eds), *Research Handbook on Digital Transformations* (Edward Elgar 2016); on gamification, e-learning, and student performance, see David Willetts, *A University Education* (Oxford University Press 2017) 333.

⁵⁷ For the discussion see e.g., Demetrios G. Papademetriou and Madeleine Sumption, ‘Rethinking Points Systems and Employer-Selected Immigration’, Report of the Migration Policy Institute, 2011, available at <https://www.migrationpolicy.org/research/rethinking-points-systems-and-employer-selected-immigration>. For the Chinese point system for internal migration see n 139, below.

⁵⁸ In Great Britain, see Road Traffic Offenders Act 1988, s 28 and <https://www.gov.uk/penalty-points-endorsements>. In Germany, see Straßenverkehrsgesetz, s 28 and https://www.kba.de/EN/ZentraleRegister_en/FAER_en/faer_node_en.html. The associations between the development of driver licensing and credit scoring has long been understood; in his landmark analysis of privacy and technology, Rule dedicates a chapter to each: James Rule, *Private Lives and Public Surveillance* (Penguin 1973) ch 3 and 5.

⁵⁹ Martin Dodge and Rob Kitchin, ‘The Automatic Management of Drivers and Driving Spaces’ (2007) 38 *Geoforum* 264, 268.

⁶⁰ See e.g. <https://www.rentalcars.com/en/guides/licence-paperwork/points-on-licence/>.

⁶¹ Lauer, above n 14, at 198-9.

⁶² Lauer, above n 14, at 249 (on the use of private credit scores in the Government-based home lending system in the 1990s, and how it contributed to the success and adoption of changes in scoring); Wainwright, above n 21, at 655 (on the significance of financial regulator pressure on lenders to be assured of ability to repay, and of the relative cost of different approaches, on the working methods of lenders).

⁶³ Carruthers, above n 13, at 538.

through the platform.⁶⁴ A related point is the type of liability attached to the very act of ranking, reviewing, or rating. US law generally takes the approach that a view on creditworthiness or an review (or even scoring) of a service is an opinion protected by the First Amendment as an aspect of freedom of speech,⁶⁵ while minimising exposure to defamation claims has long been a concern for the credit rating industry and for (non-sharing) online review sites alike.⁶⁶

Finally, where there is concern about the implications of rating, there will be the possibility of the introduction of a regulatory regime or the application of more general provisions. For instance, credit scoring is also the subject of specific regulation in the US and the body of data protection law in other jurisdictions.⁶⁷ Calls for greater regulation in other areas, on the basis of criticisms of the status quo in rating and reputation-based systems, are discussed in part 4, below.

2.4 Recent trends: algorithms, validation, aggregation

Even the more conventional forms of reputation-based decision making have undergone further change in light of Internet use and the availability of novel sources of data. A subject's use of social media or indeed of sharing economy sites can, for instance, be used as a proxy for creditworthiness. An Australian scheme for alternative (and significantly cheaper) deposits on rented properties, Trustbond, makes use of both types of data.⁶⁸ A Singapore-based lender, Lenddo, claims to use 'non-traditional data...to economically empower the emerging middle class', which includes various social media sources.⁶⁹ A US firm, Tala, operates in developing nations in Africa and Asia, claiming to utilise up to 10,000 'data points' such as social media and smartphone use, in order to create a new type of credit score to the advantage of lower-income customers.⁷⁰

⁶⁴ Sofia Ranchordás, 'Online Reputation and the Regulation of Information Asymmetries in the Platform Economy' (2018) 5 *Critical Analysis of Law* 127, 143.

⁶⁵ *Jefferson County School District v Moody's Investor's Services* (1997) 988 F Supp 1341 ('The bond market depends in large measure upon the free, open exchange of information concerning bond issues and the First Amendment is ultimately the best guarantor of the integrity of the bond rating system'); *Browne v Avvo* (2007) 525 F Supp 2d 1249, 1252 (lawyer rating website); *Castle Rock Remodeling v Bettter Business Bureau* (2011) 354 SW 3d 234, 242-3 (rating of service providers by bureau on six-point scale).

⁶⁶ For the former: Lauer, above n 14, at 42 (defamation in general) and 68 (historic (though now discontinued) practice of communicating sensitive information verbally and in restrictive circumstances). For the latter: *Seaton v TripAdvisor* (2013) 728 F 3d 592; *Clark v TripAdvisor* [2014] CSIH 110; *Burki v 70/30 Ltd* [2018] EWHC 2151 (QB); the broader question of host liability for content posted by users ('intermediary liability') is also relevant here (and differs as between the general immunity in the US and the conditional exclusions more commonly found elsewhere, including the UK).

⁶⁷ Pasquale, above n 17, at 140; Joseph Turow, *The Aisles Have Eyes: How Retailers Track Your Shopping, Strip your Privacy, and Define your Power* (Yale University Press 2017) 262; Rule, above n 58, at 214 (noting the 'genius of American liberalism...in mitigate[ing] the sting of the abuse and at the same time [consolidating] the position of the perpetrators'); Greta Krippner, 'Democracy Of Credit: Ownership and the Politics of Credit Access in Late Twentieth-Century' (2017) 123 *American Journal of Sociology* 1; Fair Credit Reporting Act 1970, 15 USC §1681; Equal Credit Opportunity Act 1974, 15 USC §1691. For data protection in the EU see 4.3, below.

⁶⁸ <http://www.trustbond.com>; see Clancy Yeates, 'How your social media account could help you get a loan' *Sydney Morning Herald* (30 December 2017) <https://www.smh.com.au/business/banking-and-finance/how-your-social-media-account-could-help-you-get-a-loan-20171219-p4yxw0.html>.

⁶⁹ <http://www.lenddo.com>; see discussion in Tianhui Tan and Tuan Phan, 'Social Media-Driven Credit Scoring: the Predictive Value of Social Structures' [2016] 37th *International Conference on Information Systems* 552 <https://pdfs.semanticscholar.org/2f1c/e382e2be6ff6c70e2a43e0197d89426992c9.pdf>; Case Hynes, 'How Social Media Could Help The Unbanked Land A Loan' *Forbes.com* (25 April 2017) <https://www.forbes.com/sites/chynes/2017/04/25/how-data-will-help-drive-universal-financial-access/>.

⁷⁰ Catherine Cheney, 'How Alternative Credit Scoring Is Transforming Lending In The Developing World' *Devex* (8 September 2016) <https://www.devex.com/news/how-alternative-credit-scoring-is-transforming-lending-in-the-developing-world-88487>.

There has been a good deal of experimentation in the digital finance sector in terms of identifying creditworthiness, especially in conjunction with expansion into less developed economies.⁷¹ However, as with more conventional forms of credit scoring, the emphasis is often upon correlation rather than causation and can therefore introduce unintended discrimination such as regarding race.⁷² Observation of patent applications and corporate announcements discloses that service providers in the social media sector, such as Facebook, may be preparing for their own role in relation to future financial service products and the use of social media data in this context.⁷³

In her work on algorithms and decision-making, O’Neal distinguishes between the ‘relatively transparent’ and ‘regulated’ systems of credit scoring developed from the 1960s in the United States⁷⁴ and the ‘arbitrary, unaccountable, unregulated, and often unfair’ assessments made by lenders and others who use browsing data and other insights alongside more conventional scores in making decisions.⁷⁵ On the other hand, Wei et al argue that using information from social media has the potential to ‘reduce lenders’ misgivings about engaging applicants with limited personal financial history’ and so improve, for some, access to finance.⁷⁶

Two further and related phenomena of interest in the present study can be observed within the world of online reputation: validation and aggregation. Validation is seen where third parties offer assistance or analysis of reputational information originally gathered for a single or more limited purpose. A leading player in this area, Traity (which was also a partner in the above-mentioned Trustbond scheme in Australia) explains its role as assisting users to ‘gather ... reputation from different data sources so that [they] can control it, own it, and leverage [it]’.⁷⁷ A related point may be the recent confirmation by Facebook that it maintains an internal system through which all users are rated for how ‘trustworthy’ they are,⁷⁸ though its current function appears to be for Facebook’s own use in enforcing its own rules against its users.

Aggregation is perhaps the most significant promised development, though again it can be seen as an obvious stage in the development of an information infrastructure, as occurred in relation to financial information in earlier decades. The exploration of the predictive value of credit scores (alone or in combination with consumer data) for non-credit questions, such as health, has also been noted,⁷⁹ as has

⁷¹ Arjuna Costa, Anamitra Deb, and Michael Kubzansky, *Big Data, Small Credit: the digital revolution and its impact on emerging market consumers* (Omidyar Network, 2016) https://www.omidyar.com/sites/default/files/file_archive/insights/Big%20Data,%20Small%20Credit%20Report%202015/BDSC_Digital%20Final_RV.pdf.

⁷² Steve Lohr, ‘Creditworthy? Let’s Consider Capitalization’ *New York Times* (19 January 2015) A1; see further 4.3, below.

⁷³ Packin and Lev-Aretz, above n 44, at 344-5; as one analysis puts it, ‘Facebook could be the next FICO’ (referring to Fair Isaac & Co. scores used in the United States): Viktor Mayer-Schönberger and Kenneth Cukier, *Big Data: A Revolution That Will Transform How We Live, Work and Think* (John Murray 2013) 92; more sceptically, Ashesh Mukherjee, *The Internet Trap: Five Costs of Living Online* (University of Toronto Press 2018) 67 (‘imagine if Facebook were to combine their records with commercially available data from credit card companies, credit rating agencies, and census databases: they would have more information about us than our closest friends and family’).

⁷⁴ See above, n 13ff and accompanying text.

⁷⁵ Cathy O’Neal, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (Random House 2016) 142-145.

⁷⁶ Yanhao Wei, Pinar Yildirim, Christophe Van den Bulte, and Chrysanthos Dellarocas, ‘Credit Scoring with Social Network Data’ (2016) 35 *Marketing Science* 234, 249.

⁷⁷ <http://www.traity.com>; see Sundararajan, above n 42, at 98;

⁷⁸ Elizabeth Dwoskin, ‘Facebook is rating the trustworthiness of its users on a scale from zero to 1’ *Washington Post* (22 August 2018).

⁷⁹ Mayer-Schönberger and Cukier, above n 73, at 56-7.

the use of credit scores in dating services⁸⁰ and in a wide range of other contexts, including ‘auto insurance assessments, cell phone contracts, residential rentals and even hiring decisions’.⁸¹ In an optimistic account of the potential for the sharing economy published in 2010, Botsman and Rogers purposed that there would soon be ‘some form of network that aggregates your reputation capital across multiple forms of collaborative consumption’.⁸² In the alternative, other projects have sought to provide cross-platform indications of influence; examples include Sociota (a paid service which seeks to measure ‘reach’ and ‘engagement’ of a presence on social media)⁸³ and Klout (which attempted to measure ‘social media influence’ across multiple platforms, and closed in 2018).⁸⁴

Aggregated reputational information has the potential to address some of the known issues with the reliance of platforms upon their own reputation systems (such as disadvantaging new users without a reputational history on that platform⁸⁵) and facilitating ‘switching’ between services.⁸⁶ Meanwhile, innovations in e-commerce and social media have included the use of social media logins for third party sites (which, subject to the appropriate terms and conditions and applicable laws, may provide direct access to further data or indirect access as a consequence of identification), the involvement of platforms in other fields (such as Snapchat’s interest in wearable technology and image recognition⁸⁷) and the cross-referencing of merchant or ecommerce data with records obtained from data brokers (including those who have historically assigned credit scores).⁸⁸

2.5 Developing a conceptual framework

The previous sections have shown that there is a considerable degree of diversity – but also some common themes – that are relevant for the understanding of rating systems. For the purposes of this paper (see Table 1), we identify six aspects where the degree to which the activity is regulated (or indeed directly managed by a public authority) can be identified (which we term the degree of interventionism). The first and most obvious question is whether the scheme itself is initiated and drafted by a private or public authority. Secondly, we ask whether the scheme has a single, specific aim, or a broader set of objectives across a number of functions or context. The third and fourth questions relate to the specific operation of the scheme: does it use multiple scores or a single score, and is a result indicative or definitive (e.g. a precise number)? Finally, we ask how transparent the scheme is, and the responsibility (private e.g. market forces or public e.g. through an oversight function) for monitoring it.

⁸⁰ E.g. <http://creditscoredating.com>; see O’Neal, above n 75, at 321.

⁸¹ Akos Rona-Tas, ‘The Off-Label Use of Consumer Credit Ratings’ (2017) 42 *Historical Social Research* 52, 53.

⁸² Botsman and Rogers, above n 17, at 219.

⁸³ <https://sociota.net>.

⁸⁴ Adithya Rao, Nemanja Spasojevic, Zhisheng Li and Trevor D’Souza, ‘Klout Score: Measuring Influence Across Multiple Social Networks’ [2015] *IEEE International Conference on Big Data* 2282.

⁸⁵ On the need for a critical mass of active users, see Pierre Hausemer, ‘Exploratory study of consumer issues in online peer-to-peer platform markets’ (2017), available at http://ec.europa.eu/newsroom/document.cfm?doc_id=45245, at 86-7.

⁸⁶ Vassilis Hatzopoulos, *The Collaborative Economy and EU Law* (Edward Elgar 2018) 197.

⁸⁷ See, e.g. Billy Gallagher, *How To Turn Down A Billion Dollars: The Snapchat Story* (St. Martin’s Press 2018) 230, 247-251; Shannon Liao, ‘Snapchat is working on a feature that can find products you snap on Amazon’ *The Verge* (9 July 2018) <https://www.theverge.com/2018/7/9/17549372/snapchat-feature-find-amazon-products-google-lens>; Arielle Pardes, ‘Why Snap needs its spectacles’ *Wired* (May 2018) <https://www.wired.com/story/why-snap-needs-its-spectacles/>.

⁸⁸ Turow, above n 67, at 155-7.

Table 1: Degree of interventionism in rating systems

	Low	Medium	High
1) Drafter	Private	Co-drafting	State
2) Aim	Specific	Socio-economic	General
3) Scoring	Multiple	Main and sub-indicators	Single
4) Application	Flexible	Comply or explain	Uniform
5) Algorithm	Transparency	Controlled transparency	Protected
6) Enforcement	Market	Stages of enforcement	State

Table 1 conceptualises how these six questions can be answered in a way that is ‘low’, ‘medium’ or ‘high’ in terms of the interventionism of a rating system. For example, it can be seen that a system drafted by a private entity on a specific issue that is flexible in its application is at the lower end of interventionism, while a system drafted and enforced by a public authority, which aims to be comprehensive in its coverage, can be seen as highly interventionist. The table also indicates that intermediate models are possible, for example, as far as rating systems are co-drafted or applied with a ‘comply or explain’ mechanism. It should be noted that some observations are tentative, in the absence of full disclosure by private parties as to how their systems operate⁸⁹ – a point which we will return to below.

Table 2 shows that this model can be further explained by applying it to a number of the schemes discussed above. For instance, sharing economy and other peer-to-peer platforms often use their own reputation system, with a specific aim of supporting transactions on that platform, and enforced by the market that the platform has instigated. Applying the system is relatively inflexible, though; as discussed above, an Uber driver’s entitlement to use the platform will be affected by her rating.

Table 2: Interventionism in selected rating systems

	Credit ratings in many countries	Point systems for traffic violations	UK research excellence framework	Sharing economy platforms
1) Drafter	Low	High	High	Low
2) Aim	Low/ Medium	Low	Low	Low
3) Scoring	Medium	Medium	Medium	Medium/ High
4) Application	Medium/ High	High	High	High
5) Algorithm	Medium	Low	Medium	Low/Medium
6) Enforcement	Low	Medium	Medium	Low

Overall, it can be seen that these rating systems combine different elements of low, medium and high interventionism. It is also noteworthy that none of these ratings have a high degree of interventionism in the fields ‘aim’ and ‘algorithm’: this is potentially different in the emerging Chinese system as it is

⁸⁹ For example, while it can be assumed that a displayed rating is the mean of submitted scores (with or without explanatory comments or sub-scores), a service provider can choose to apply a weighting system which, for instance, controls for timeliness or the reliability of the person providing the rating: see further Lene Pettersen, ‘Rating Mechanisms Among Participants in Sharing Economy Platforms’ (2017) 22(12) *First Monday* <http://dx.doi.org/10.5210/fm.v22i12.7908>.

said to shift from ‘reputation society’ to the ‘reputation state’⁹⁰ and thus to a more formalised model where reputation matters not only through societal forces (or as a self-contained aid to the use of a particular service) but as a tool of decision-making. Yet, the Chinese model also contains a number of nuances, to which we turn now.

3. China: Social Credit System and reputation ratings

3.1 Preliminary considerations

The websites mentioned in the previous part are rarely used in China: Airbnb is available; yet, eBay and Uber have been unsuccessful in entering the Chinese market and many social media sites are blocked (e.g., Twitter and Facebook).⁹¹ Thus, Chinese citizens rely on the specific Chinese providers, which also implies that the Chinese government may in principle be able to get access to the corresponding user data.

The previous part also discussed the use of financial credit rating systems in Europe and North America. The People’s Bank of China (i.e. the Chinese central bank) has established the Credit Reference Centre⁹² which provides both commercial and consumer credit reporting, based on credit information made available by banks and state institutions (e.g., regarding social welfare payments). The resulting reports are important for anyone who applies for a bank loan. Yet, these reports do not provide an actual rating of the creditworthiness of businesses and consumers, though this may change in the future due to the developments discussed in this part.

The Chinese Social Credit System has received extensive coverage in the Western press, where it is often described as a big-data-driven comprehensive rating of all Chinese citizens.⁹³ However, this is a misleading characterisation of the current situation. At present, three different models operate: China-wide blacklists, compliance scores by pilot cities, and social credit scores by financial institutions. The main sections of this part will explain these forms of social control (3.2 to 3.4, below). Subsequently, this part will reflect on future developments and relate those to Western comments made about the Chinese model (3.5 and 3.6., below).

3.2 The Social Credit System and the use of China-wide blacklists

The introduction of the Social Credit System by the central government has a potentially far-reaching effect; yet, the China-wide measures that implement it are, so far, rather specific – namely, using blacklists – as this section explains.

The Social Credit System aims to address not only the financial creditworthiness of individuals and companies but also their sincerity, honesty, and integrity.⁹⁴ The initial discussions of the early 2000s

⁹⁰ Xin Dai, ‘Toward a Reputation State: The Social Credit System Project of China’ Working Paper (10 June 2018), available at <https://ssrn.com/abstract=3193577>.

⁹¹ Li Yuan, ‘A Generation Grows Up in China Without Google, Facebook Or Twitter’ *New York Times* (7 August 2018) <https://www.nytimes.com/2018/08/06/technology/china-generation-blocked-internet.html>. Some other countries seem to follow, see ‘Beijing Wants to Rewrite the Rules of the Internet’ *The Atlantic* (18 June 2018) <https://www.theatlantic.com/international/archive/2018/06/zte-huawei-china-trump-trade-cyber/563033/>.

⁹² See <http://www.pbccrc.org.cn/crc/> (available in English) and <https://ipcrc.pbccrc.org.cn> with access to the information (available in Chinese only).

⁹³ See 3.6, below.

⁹⁴ See Rogier Creemers, ‘China’s Social Credit System: An Evolving Practice of Control’ Working Paper (9 May 2018), available at <https://ssrn.com/abstract=3175792>, noting in footnote 13 that the Mandarin term for ‘credit’ (*xinyong*) cognates with terms for ‘sincerity, honesty, and integrity’; similar Dai, above note 90, at 16 (also on the use of the word ‘social’).

put this in context of the objective to support the transition to a market economy after China's accession to the WTO, for example, the need to combat commercial fraud and IP infringements.⁹⁵ A 2011 decision then also referred to 'matters of social and political morality' as points of concern.⁹⁶ In 2014 this was followed by the State Council's 'Notice concerning Issuance of the Planning Outline for the Construction of a Social Credit System (2014-2020)',⁹⁷ which forms the basis of the development of the Social Credit System today. This document mentions the aim to promote 'integrity in government affairs', 'commercial sincerity', 'social integrity' and 'judicial public trust' which shows that these measures are targeted at individuals (the focus of this paper), as well as companies, judicial organs, and other governmental authorities. It also explains that the ultimate goal is a uniform social credit system based on penalty and award mechanisms, presenting this idea in a general sense, with no references to quantitative measures and the collection of online data.⁹⁸

The specific penalty mechanisms that are already operational aim to enforce the blacklists of persons who have violated the law. They are implemented and enforced by different government authorities. The process started with a decision of the Supreme People's Court on public blacklists of persons who defied legally binding judgments,⁹⁹ but there are now also many further blacklists compiled by other authorities, for example, the Ministry of Culture and Tourism lists those who have violated transport rules, such as smoking or carrying prohibited items.¹⁰⁰ Subsequently, a degree of centralisation has taken place. A central website makes the names of the blacklisted persons publicly available.¹⁰¹ There is also now a system in place that requires cooperation of authorities in their sanctions (the Joint Punishment System).¹⁰² This means that a violation of the law can lead to a variety of sanctions; it may start with a fine, but the perpetrator may subsequently be banned from flying or using high speed trains. It is also possible that these blacklists have implications on private-law relationships: while Chinese businesspersons may merely care about their own profits (and therefore be willing to do business with everyone), the recognition of blacklists by financial institutions can mean that blacklisted persons may not be able to use the funds on their current accounts in order to purchase a car or other luxury items.¹⁰³

Given the severe consequences of these blacklists, it is provided that individuals need to be notified in advance. There are also some internal review proceedings: for example, the State Administration of Taxation, which has its own system of blacklists, has a 'credit repair mechanism' that provides

⁹⁵ See Martin Chorzempa, Paul Triolo, and Samm Sacks, 'China's Social Credit System: A Mark of Progress or a Threat to Privacy?', Peterson Institute for International Economics, Policy Brief 18-14 (June 2018), at 3; Creemers, above n 94, at 3.

⁹⁶ Central Committee. 18 October 2011 as translated at <https://chinacopyrightandmedia.wordpress.com/2011/10/18/central-committee-of-the-chinesecommunist-party-decision-concerning-deepening-cultural-structural-reform/>.

⁹⁷ English translation available at <https://chinacopyrightandmedia.wordpress.com/2014/06/14/planning-outline-for-the-construction-of-a-social-credit-system-2014-2020/>.

⁹⁸ As also noted by Creemers, above n 94, at 13.

⁹⁹ Interpretation No. 17 [2013] of the Supreme People's Court, English translation available at www.lawinfochina.com/Display.aspx?lib=law&Cgid=207020&EncodingName=gb2312. Search functions are available at <http://zxgk.court.gov.cn/>.

¹⁰⁰ See e.g. <https://www.whatsonweibo.com/20-chinese-tourists-travel-blacklist/> and <https://jingtravel.com/china-bans-169-people-from-travel-with-new-blacklist/>.

¹⁰¹ See Credit China, www.creditchina.gov.cn/ and, for companies, the National Enterprise Credit Information Publicity System, www.gsxt.gov.cn/.

¹⁰² 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, English translation available at <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/>.

¹⁰³ For the latter point see 3.4, below.

correction of or relief from the blacklist under certain conditions.¹⁰⁴ Moreover, in principle, there is also a right to appeal to court; yet, observers have been sceptical how far these legal safeguards are effective.¹⁰⁵

3.3 Pilot cities issuing compliance scores

In addition to the China-wide implementation of the Social Credit System, the Chinese government authorised over forty pilot cities to experiment with forms of social credit and those experiments have also been underpinned by provincial and municipal legislation.¹⁰⁶ The following will provide some representative examples. These local schemes also have to be seen in the wider context of the ways that Chinese regions and cities have developed elaborated tools of state surveillance and supervision. For example, in the provinces of Xinjiang and Tibet, there is said to be particularly extensive monitoring of internet use as well as elaborate registration and ID card requirements.¹⁰⁷ More generally, CCTV cameras see widespread use in China, including forms of public shaming (e.g., publicly listing jaywalkers caught by facial recognition cameras in Shenzhen).¹⁰⁸

Two of the most extensive examples of regional pilots are from Suining in Jiangsu and Rongcheng in Shandong province. In both of these pilots, each citizen started with 1000 points. They could then lose points for a variety of infringements, such as traffic light violations, drunk driving, or having a child without the necessary administrative permission, but they could also re-gain points by ‘good’ actions, such as caring for elderly family members. The resulting points were then translated into a rating from A to D which could influence the individual in a positive or negative way in their dealing with the local government. For example, someone with a high rating would get preferential access to government subsidies, while someone with a low rating would be restricted in applications for housing, social welfare, business licenses, and public procurement.¹⁰⁹

Comparing these two pilots, the experience in Rongcheng is regarded as being more successful with the public than the one in Suining as the former relied more on positive effects of high ratings rather than negative ones for low ratings. This focus on incentives is also a feature of the Honest Shanghai scheme which only provides rewards for good ratings (i.e. no punishments for a poor one). Honest Shanghai is a voluntary smartphone app that asks users to enter their state ID number and then returns a rating as ‘very good’, ‘good’ or ‘bad’. This rating is apparently based on data the Shanghai government has collected about each citizen; details of the algorithm are however not transparent.¹¹⁰

This use of incentives and algorithms can also be seen in the next category, namely the social credit scores developed by financial institutions.

¹⁰⁴ See e.g. www.chinatax.gov.cn/eng/n2367751/c3633676/content.html

¹⁰⁵ Creemers, above n 94, at 19. For judicial review in China see also 4.3, below.

¹⁰⁶ For this legislation see also 4.3, below.

¹⁰⁷ See e.g. ‘Twelve Days in Xinjiang: How China’s Surveillance State Overwhelms Daily Life’ *Wall Street Journal* (19 December 2017) <https://www.wsj.com/articles/twelve-days-in-xinjiang-how-chinas-surveillance-state-overwhelms-daily-life-1513700355>.

¹⁰⁸ See e.g. ‘Inside China’s surveillance state’ *FT Magazine* (20 July 2018); Creemers, above n 94, at 18 (for the jaywalking example).

¹⁰⁹ See e.g. ‘Life Inside China’s Social Credit Laboratory’ *Foreign Policy* (3 April 2018) <http://foreign-policy.com/2018/04/03/life-inside-chinas-social-credit-laboratory/>; Creemers, above n 94, at 10.

¹¹⁰ See Mareike Ohlberg, Shazeda Ahmed, and Bertram Lang, ‘Central Planning, Local Experiments: The complex implementation of China’s Social Credit System’ *Merics China Monitor* (12 December 2017) at p 12.

3.4 Financial institutions providing social credit scores

Financial institutions have also been allowed to create schemes implementing the Social Credit System. Many of these pilots consider a wide range of information, including social network data. Thus, it is justified here to talk about schemes measuring ‘social credit’ (and not simply questions of ‘financial credit’).

The most influential of these schemes has been Sesame Credit (also spelled Zhima Credit in English), developed by Alibaba’s subsidiary Ant Financial Group.¹¹¹ It evaluates the creditworthiness of firms and individuals with a model of ‘smart business’ which captures information automatically and then evaluates it with algorithmic tools in real time.¹¹² In detail, Sesame Credit scores each user on a scale of 350 to 950 points, based on five sets of information: (i) financial credit records, (ii) behavioural trends in commercial transactions, (iii) available assets and personal information, (iv) behaviour and preferences and (v) social relationships. As Sesame Credit is a smartphone app, linked to Alibaba’s mobile payment system Alipay, it is clear that it accesses the phones of its users for information gathering. Apart from that, it is not transparent which tools and algorithms are used. In particular, this applies to the broad categories (iv) and (v) where rumours are that factors are considered such as: excessively playing video games, cheating in online video games, and a frequent change of address (negative) and donations to charity, having friends with high Sesame Credit ratings, and polite behaviour on social media (positive).¹¹³

The consequences of a high Sesame Credit rating are far-reaching. To start with, as this rating is provided by a financial institution, users with higher scores have better access to easy forms of credit. In addition, many other companies also consider the Sesame Credit rating through an agreement with Alibaba: for example, a high rating may mean that such users do not need to pay a deposit for renting a flat, a car or a bicycle,¹¹⁴ get faster check-in at hotels and airlines, and are displayed more prominently on dating websites (and users may also disclose a high score as a status symbol elsewhere, which apparently many do). The Chinese state is also not completely unconnected to the Sesame Credit rating and Alipay. On the one hand, for example, a high rating can make it easier to secure priority access in hospitals or a visa for overseas travel. On the other hand, Alibaba forwards non-compliance of payment obligations to the government, while also contributing to the implementation of China-wide blacklists through blocking certain transactions using Alipay.¹¹⁵

In early 2018, however, the People’s Bank of China (PBOC) decided to withhold a renewal of the licences for these private social credit scores. There is some speculation about the reasons for this decision, for example, that Alibaba and others may have got too powerful, that they have stated collecting too much personal and social information about their users, and that they may face conflicts of interest as they also benefit commercially from their customers.¹¹⁶ It also seems that the PBOC now

¹¹¹ See <https://www.xin.xin/> (in Chinese).

¹¹² Thus, this differs from conventional credit assessments, for details see Ming Zeng, *Smart Business: What Alibaba’s Success Reveals About the Future of Strategy* (Harvard Business Review Press, 2018).

¹¹³ See e.g. Creemers, above n 94, at 22-23; Rachel Botsman, ‘Big data meets Big Brother as China moves to rate its citizens’ *Wired* (21 October 2017) <http://www.wired.co.uk/article/chinese-government-social-credit-score-privacyinvasion>; ‘The odd reality of life under China’s all-seeing credit score system’ *Wired* (5 June 2018), <http://www.wired.co.uk/article/china-social-credit>.

¹¹⁴ As also trialled in Australia; see 2.4, above.

¹¹⁵ See 3.2, above.

¹¹⁶ Dai, above n 90, at 17-8; Ohlberg et al., above n 110, at 12; ‘Here’s why China is concerned about Tencent and Alibaba’s credit scoring efforts’ *Business Insider* (6 February 2018) <http://uk.businessinsider.com/china-tencent-and-alibabas-new-credit-scoring-solution-2018-2>. But see also ‘Alibaba and Tencent have become China’s most formidable investors’ *Economist* (2 August 2018) <https://www.economist.com/business/2018/08/02/alibaba-and-tencent-have-become-chinas-most-formidable-investors> (‘being able to manage a handful of established private players with long-standing links to the Communist Party, with their tentacles in many young firms, makes the whole tech industry easier to control’).

believes that it is a good time to design a new consolidated credit rating – called Baihang Credit score – to be developed by a public-private partnership between the PBOC and eight private financial institutions.¹¹⁷

At present, it is not yet clear how this new system will operate. For example, it seems that the Sesame rating is to continue for non-credit purposes, such as the bike rentals, visa approvals and dating websites mentioned above. It is also too early to say whether the new Baihang Credit score will be more focussed on financial credit, as the PBOC’s involvement in the Credit Reference Centre¹¹⁸ may indicate, or whether it will incorporate the wide ‘social credit’ approach of Sesame Credit and other commercial ratings.

3.5 Future perspectives and reception in China

The previous sections have shown that it would be premature to talk about ‘the’ Social Credit System in China. Rather there are three different systems at the moment (with further sub-groupings possible) which follow somehow different logics. Table 3 maps those systems based on the distinction between high/medium/low ‘interventionist’ models, explained earlier in this paper.¹¹⁹

Table 3: Degree of interventionism in the Social Credit System (so far)

	China-wide blacklists (3.2 above)	Pilot cities (3.3 above)	Financial institutions (3.4 above)
1) Drafter	High	High	Low
2) Aim	Low	Low	High
3) Scoring	Low	High	High
4) Application	High	Medium	Medium
5) Algorithm	Low	High	High
6) Enforcement	High	Medium	Low

It can be seen that all three existing systems have only some elements of a highly interventionist model: the China-wide blacklists due to the state influence in drafting and enforcement as well as their uniform application; the scores developed by pilot cities due to their belonging to the state, as well as single scoring mechanisms and protected algorithms; and the ratings by financial institutions due to their relatively general scope (going well beyond financial credit information) as well as their single scoring mechanisms and protected algorithms.

This complex status quo raises the question whether the different elements will soon be consolidated into a ‘state-run meta social-credit system’?¹²⁰ So, in the framework of the three models, will the future be a full interventionist system in all six categories?

¹¹⁷ See ‘Baihang and the Eight Personal Credit Programmes: A Credit Leap Forward’ *What’s on Weibo* (10 June 2018), <https://www.whatsonweibo.com/baihang-and-the-eight-personal-credit-programmes-a-credit-leap-forward/>. On the significance of public-private collaboration for the design of the Social Credit System more generally, see Fan Liang, Vishnupriya Das, Nadiya Kostyuk, and Muzammil M. Hussain, ‘Constructing a Data-Driven Society: China’s Social Credit System as a State Surveillance Infrastructure’ (forthcoming) *Policy & Internet*, DOI: 10.1002/poi3.183 17.

¹¹⁸ See 3.1, above.

¹¹⁹ See 2.5, above.

¹²⁰ Larry Catá Backer, ‘Measurement, Assessment and Reward: The Challenges of Building Institutionalized Social Credit and Rating Systems in China and in the West’, Proceedings of the Chinese Social Credit System, Shanghai Jiaotong University, 23 September 2017, available at <https://ssrn.com/abstract=3040624>, at p 7.

Such further evolution would assume that the current experience with the Social Credit System is a largely positive one. It may be argued that there is some evidence that this is indeed the case, although there are methodological and practical difficulties with exploring this in detail.¹²¹ The Chinese media mentions the way the Social Credit System can create a ‘culture of integrity’, solve economic problems and improve governance.¹²² More specifically, reports in Chinese newspapers most frequently emphasise its benefit for commerce and rural welfare. In particular, the argument is here that this system enables honest but poor persons (including small businesses) getting financial credit which otherwise would not be available.¹²³ With respect to the Sesame Credit score, it is also said that it may give citizens more control over the impact of their actions than previously,¹²⁴ and that the ‘gamification’ of the Sesame Credit score as a reward system may be one of its practical advantages.¹²⁵ And even the blacklisting system can be seen as beneficial for individuals as far as it induces their debtors (e.g., contractual counterparties) to comply with court judgments.¹²⁶

There has also been some public criticism of the emerging ratings in China – reflecting the well-established interest in privacy (or the related concept of reputation) across societies,¹²⁷ despite differences in legal and human rights protection. As regards the pilot cities, the Suining experiment was criticised by the official state media comparing it with the system of Good Citizen Cards used by the Japanese during the occupation of China during the Second World War.¹²⁸ Similarly, an academic from the Shanghai Academy of Social Sciences argues that social credit should not cover any violation of moral behaviour, but that it needs to be defined in a narrow way as failure of compliance with legal and contractual obligations.¹²⁹ There have also been discussions in Chinese media about problems of information security, data privacy and flaws in the technical design, in particular with respect to the ratings by financial institutions.¹³⁰ Yet, of course, applying a comparative ‘Western’ perspective, the assessment may even be more critical, as will be seen in the next section.

3.6 The Social Credit System and ‘Western values’

Most Western commentators resolutely reject the Chinese Social Credit System. The words frequently used are that it is a ‘tool for totalitarian surveillance’,¹³¹ an invention of ‘the digital totalitarian

¹²¹ See e.g. Martin Mautvedt, *The Chinese Social Credit System. Surveillance and Social Manipulation: A Solution to “Moral Decay”?* (Master thesis, University of Oslo, 2017) <http://hdl.handle.net/10852/60829> (interview subjects broadly in favour of the system, though with limited understanding of aspects thereof and the degree to which it has been criticised elsewhere).

¹²² Ohlberg et al., above n 110, at 5-7.

¹²³ Saif Shahin and Pei Zheng, ‘Big Data and the Illusion of Choice: Comparing the Evolution of India’s *Aadhaar* and China’s *Social Credit System* as Technosocial Discourses’ (2018, forthcoming) *Social Science Computer Review* DOI: 10.1177/0894439318789343 at pp 12-14.

¹²⁴ Botsman, above n 113, citing a blogger based in Shanghai.

¹²⁵ Zahy Ramadan, ‘The Gamification of Trust: The Case of China’s “Social Credit”’ (2018) 36 *Marketing Intelligence & Planning* 93.

¹²⁶ Cf. Creemers, above n 94, at 1 (Social Credit System as a substitute for weak law enforcement).

¹²⁷ See e.g. Joseph Cannataci, ‘Privacy, Technology Law and Religions across Cultures’ [2009] *Journal of Information, Law, and Technology* http://go.warwick.ac.uk/jilt/2009_1/cannataci. For China, see Mautvedt, above n 121, at 40.

¹²⁸ Creemers, above n 94, at 10.

¹²⁹ Lin Yu, ‘Use Social Credit Cautiously and in Accordance with the Law’ Working Paper (2 October 2017), available at <https://china-social-credit.com/changes-social-credit-19th-ccp-congress-1>.

¹³⁰ ‘Sesame Credit apologizes for alleged Alipay privacy violation’ *Global Times* (1 April 2018) <http://www.globaltimes.cn/content/1083285.shtml>; Ohlberg et al., above n 110, at 7; Mautvedt, above n 121, at 36-7. See also 3.4 above (for the intervention of the PBOC).

¹³¹ Ohlberg et al., above n 110, at 12.

state’,¹³² that it is ‘worse than an Orwellian nightmare’,¹³³ a meeting of ‘big data’ with ‘Big Brother’,¹³⁴ or indeed a meeting of Orwell’s 1984 with Pavlov’s dogs: ‘act like a good citizen, be rewarded and be made to think you’re having fun’.¹³⁵ However, understanding the Social Credit System as ‘merely’ a tool of state surveillance¹³⁶ misunderstands the diversity of the current system, in terms of management but more importantly in terms of functions, as outlined in the previous sections. Still, as a more moderate form of criticism, we may also identify problems such as the confusion between conflicting objectives (and corresponding problems of construct validity), problems of data reliability (in particular as regards the measurement of soft factors) and the risks of a monopolist system lacking competition (with corresponding risks of corruption).¹³⁷

Another frequent reaction is that the Chinese Social Credit System is incompatible with Western political and cultural values. For example, it has been suggested that it may be suitable for an authoritarian political system, but not a liberal democracy: only the former system can be openly paternalistic, as inherent in the Social Credit System,¹³⁸ and it may also be linked to other forms of control of personal behaviour used by the Chinese government, and associated with a Leninist idea of ‘social management processes’, such as the records about the performance and attitudes of citizens (*dang’an*) and the household registration system (*hukou*).¹³⁹ Another factor may be that there is widespread scepticism how far China has embraced the rule of law;¹⁴⁰ thus, as far as this is doubted, it can be said that the Social Credit System would be problematic in the rule-of-law societies of the West as it lacks transparency, as it disrespects the divide between law and politics,¹⁴¹ and as it is not needed due to more effective law enforcement anyway.¹⁴²

Cultural differences may also be relevant. As some of the mechanism of the Social Credit System use forms of ‘shaming’, it may matter that in China shame is said to be an effective means of social control due to the desire to maintain harmony in relationships, as opposed to the rights focus of Western countries.¹⁴³ As Western societies have lower thresholds as regards the feeling of

¹³² ‘China invents the digital totalitarian state’ *The Economist* (17 December 2016) <https://www.economist.com/news/briefing/21711902-worrying-implications-its-social-creditproject-china-invents-digital-totalitarian>.

¹³³ Dom Galeon, ‘China’s “Social Credit System” Will Rate How Valuable You Are as a Human’ *Futurism* (2 December 2017) <https://futurism.com/china-social-credit-system-rate-human-value>. See also ‘Orwell’s Nightmare: China’s Social Credit System’ *Asian Institute for Policy Studies* (28 February 2017) <http://en.asaninst.org/contents/orwells-nightmare-chinas-social-credit-system/>; Jamie Horsley, ‘China’s Orwellian Social Credit Score Isn’t Real’ *Foreign Policy* (16 November 2018) <https://foreignpolicy.com/2018/11/16/chinas-orwellian-social-credit-score-isnt-real/>.

¹³⁴ Botsman, above n 113.

¹³⁵ *Ibid.*

¹³⁶ Liang et al, above n 117.

¹³⁷ See e.g. Dermot Williamson, ‘China’s Online Consumerism: Managing Business, Moral Panic and Regulation’ Working Paper (29 July 2017), available at <https://ssrn.com/abstract=3181287>, at pp 15-17.

¹³⁸ Creemers, above n 94, at 26

¹³⁹ Samantha Hoffman, ‘Managing the state: social credit, surveillance and the CCP’s plan for China’, *China Brief*, Jamestown Foundation, 17 August 2017, 17(11), 21; Botsman, above n 113. The latter also uses a point system, see Li Zhang, ‘Economic Migration and Urban Citizenship in China: The Role of Points Systems’ (2012) 38 *Population and Development Review* 503; for point-based systems of international migration see 2.3, above.

¹⁴⁰ Or how far China has its unique version: see e.g. John Garrick and Yan Chang Bennett (eds), *China’s Socialist Rule of Law Reforms Under Xi Jinping* (London: Routledge 2016); Yuhua Wang, *Tying the Autocrat’s Hands: The Rise of the Rule of Law in China* (Cambridge: Cambridge University Press, 2014).

¹⁴¹ Creemers, above n 94, at 5.

¹⁴² See also 3.1 and 3.5, above.

¹⁴³ Olwen Bedford and Kwang-Kuo Hwang, ‘Guilt and Shame in Chinese Culture: A Cross-cultural Framework from the Perspective of Morality and Identity’ (2003) 33 *Journal for the Theory of Social Behaviour* 127, 133. See also Sana Sheikh, ‘Cultural Variations in Shame’s Responses: A Dynamic Perspective’ (2014) 18 *Personality and Social Psychology Review* 384.

‘intrusion’,¹⁴⁴ and as in China there is lower trust towards strangers (with corresponding higher trust in close networks of *guanxi*), a trust-building instrument such as the Social Credit System also seems to fit better with Chinese culture.¹⁴⁵ This may also be seen in existing legal rules: the concern regarding data collection by states (or the use by states of data collected by others) highlighted in 20th century abuses, has long informed the development of robust data protection legislation in the West, especially in the European Union,¹⁴⁶ whereas data protection and privacy legislation in China is fragmentary at best.¹⁴⁷

However, this critical perspective should not be our final word on the comparative assessment of the Social Credit System. The following will therefore discuss how far, despite this criticism and despite these differences, something can be gained from comparing the model of Social Credit System with its Western counterparts.

4. Comparison, evaluation and regulation

4.1 Should we compare?

Some argue that, for scholars from Western countries, Chinese law remains a ‘mystery’ that they cannot apprehend – and that any sense of understanding may be a mere illusion that tells us more about the Western legal culture than about the Chinese one.¹⁴⁸ Thus, at least, authors from the West ought to be cautious in the way they can assess Chinese law. However, China has also transplanted a large number of legal concepts from Western countries in recent years.¹⁴⁹ Thus, it can also be noted that contemporary Chinese law may, in many respects, not be fundamentally different from its Western counterpart, and that in both China and the West we have to understand how legal rules coevolve with political, social, economic and cultural factors in order to understand how ‘law works’.¹⁵⁰

For rating systems, a similar dialectic line of reasoning can be applied. On the one hand, as we have seen, the rating systems developed in the West have clear limits in their ‘interventionism’,¹⁵¹ while it is possible that in China a fully ‘interventionist’ system will be implemented in the near future:¹⁵² thus, it seems that, in comparison, this ‘unification of the various elements, and their seamless operation would be a great innovation’,¹⁵³ or in any case ‘unique’ as compared to anything that is happening in the West.¹⁵⁴

¹⁴⁴ Backer, above n 120, at 14.

¹⁴⁵ See generally Williamson, above n 137.

¹⁴⁶ E.g. David Cole and Federico Fabbrini, ‘Bridging the Transatlantic Divide? The United States, the European Union, and the Protection of Privacy Across Borders’ (2016) 14 *International Journal of Constitutional Law* 220, 225-6; Mayer-Schönberger and Cukier, above n 73, ch 8.

¹⁴⁷ See Yongxi Chen and Anne SY Cheung, ‘The Transparent Self under Big Data Profiling: Privacy and Chinese Legislation on the Social Credit System’ (2018) 12 *Journal of Comparative Law* 356, and for the local legislation also Dai, above n 90, at 23.

¹⁴⁸ See the discussion in Tianshu Zhou and Mathias Siems, ‘Contentious Modes of Understanding Chinese Commercial Law’ (2015) 6 *George Mason Journal of International Commercial Law* 177.

¹⁴⁹ *Ibid.* (with examples from contract law and company law).

¹⁵⁰ Ding Chen, Simon Deakin, Mathias Siems and Boya Wang, ‘Law, Trust and Institutional Change in China: Evidence from Qualitative Fieldwork’ (2017) 17 *Journal of Corporate Law Studies* 257.

¹⁵¹ See 2.5, above.

¹⁵² See 3.5, above.

¹⁵³ Backer, above n 120, at 15.

¹⁵⁴ Dai, above n 90, at 1.

On the other hand, this should not lead to the conclusion that the Social Credit System and its Western counterparts are incommensurable. Some of the aspects of the Chinese system are not part of the Western rating systems; yet, they are not completely alien to the West. For example, it was explained that, as part of the Social Credit System, China uses blacklists of persons who have violated the law in order to exclude them with the help of data sharing from many aspects of social life.¹⁵⁵ Chorzempa et al relate this to the use of background checks and ‘no-fly lists’ in the US;¹⁵⁶ other instances include the system of control of football spectators in the UK (‘football banning orders’), which includes the temporary holding of passports during relevant periods (international fixtures) to prevent travel.¹⁵⁷ It can also be noted that criminal records and details of insolvent debtors are collected and may be shared more or less widely in a number of European states.¹⁵⁸ The imposition of a criminal sentence can also incorporate a variety of sanctions in some Western countries: for example, temporary driving bans may be an ancillary penalty for criminal convictions (even they do not relate to traffic offences)¹⁵⁹ and disenfranchisement may follow automatically from imprisonment.¹⁶⁰

It can also be seen that the design and regulation of today’s rating systems are already clear examples of policy diffusion.¹⁶¹ The Chinese system partly derives from its Western counterparts: the financial credit scoring systems of Western countries have been an initial source of influence, and more recent tools such as the Sesame Credit scores may be seen as an example of the ‘gamification’ of rating systems in recent time.¹⁶² In return, the growing global influence of China¹⁶³ can mean that the Social Credit System may well be a regulatory tool which could inspire the West: the Social Credit System may show that China now ‘appears to have ascended to the position of principal global driving force in political theory and action’,¹⁶⁴ with ‘the potential to change law and government as we know them in China and beyond’.¹⁶⁵ And while Pasquale highlights the shift towards a ‘scored society’ beyond the narrower functions of the 19th and 20th century, recent developments in China suggest, as noted above, a shift from ‘reputation society’ to ‘reputation state’.¹⁶⁶

Thus, the question arises how such a future development should be assessed: in other words, if reputation and rating systems consolidate in Western markets in a similar fashion, what opportunities and controversies will arise – and how should law makers intervene? How is, to take Rule’s conclusion from his 1973 analysis of the emerging challenge of privacy and technology, the ‘seductive appeal of mass surveillance’ (including convenience or quality of life) to be addressed alongside a

¹⁵⁵ See 3.2, above.

¹⁵⁶ Chorzempa et al., above n 95, at 4 and 7.

¹⁵⁷ Football Spectators Act 1989; see further <https://www.cps.gov.uk/legal-guidance/football-related-offences-and-football-banning-orders>.

¹⁵⁸ For criminal records see e.g. for the UK: Police Act 1997, part 5; for Germany: Bundeszentralregistergesetz 1971 (as amended). For debtors see e.g. for the UK: <https://www.gov.uk/search-bankruptcy-insolvency-register>; for Ireland: <https://www.stubsgazette.ie>; for Germany: Zivilprozessordnung, s 882b (delegating this task to local courts).

¹⁵⁹ E.g. in Germany: Criminal Code, Section 44(1)(s.) as amended by Gesetzes zur effektiveren und praxistauglicheren Ausgestaltung des Strafverfahrens vom 17.08.2017 (BGBl. I S. 3202).

¹⁶⁰ E.g., in the UK: Representation of the People Act 1983, s 3. This has been challenged under the ECHR, though UK law has not yet been amended on foot of the ECtHR’s adverse finding: *Hirst v United Kingdom* (2006) 42 EHRR 41. See also Colin Murray, ‘A Perfect Storm: Parliament and Prisoner Disenfranchisement’ (2013) 66 *Parliamentary Affairs* 511.

¹⁶¹ For the general literature on this topic see e.g. Erin R. Graham, Charles R. Shipan and Craig Volden, ‘Review Article: The Diffusion of Policy Diffusion Research in Political Science’ (2012) 43 *British Journal of Political Science* 673.

¹⁶² See 3.1, 3.5 as well as 2.4, above.

¹⁶³ See 1, above.

¹⁶⁴ Backer, above n 120, at 2.

¹⁶⁵ Dai, above n 90, at 1.

¹⁶⁶ See 2.5, above.

greater understanding of dangers?¹⁶⁷ Will rating systems have different impacts on different groups of people, especially if there is a shift away from opt-in systems (where there may be incentives for participation) to systems that are (perhaps de facto if not yet de jure) universal?

4.2 A simplified normative framework

Evaluating rating systems is complex as much will depend on their precise substance and context. Thus, it could be suggested that mutual learning between such systems is likely to work best if they are based on a broadly similar design. Similarly, it will be helpful to move away from generalised criticisms or concerns towards a more precise identification of shortcomings of particular implementations. Indeed, it is also worth considering how far the reasons for and against systems with very different designs may stimulate mutual learning. Here, at the level of some generality, it is possible to identify possible shortcomings of systems that are either based on a low or a high level of intervention (or to put it in another way, the advantages of either of those systems), following the categories developed earlier in this paper.¹⁶⁸

Table 4: Typical shortcomings of low and high interventionist rating systems

	Low	High
1) Drafter	Private drafters may disregard public interest, with limited opportunities for oversight	State's monopoly may be abused, with limited checks and balances including through competition
2) Aim	Specific systems may be biased towards narrow interests	General systems may lead to disproportionate control of behaviour
3) Scoring	Multiple scores may lead to conflicting incentives	Single score may disregard complexities of social reality
4) Application	Flexible use may open door to corruption and biases	Uniform application may neglect fairness of individual case
5) Algorithm	Transparency may harm operation through game-playing	Protected algorithm may disregard need for accountability
6) Enforcement	Markets may lack effective means of enforcement	State may respond with overly harsh and rigid sanctions

As the overview in Table 4 illustrates, a priori, it does not seem justified to regard either a low or a high interventionist system as superior. Indeed, it can be seen that in many circumstances the advantages of one of the systems are the disadvantages of the other one, and vice versa. For example, when a high interventionist system is inflexible, it may also be said that it is effective; and when a low interventionist system is biased towards narrow interests, a high interventionist system may be overly diffuse.

Thus, a possible response could be that a medium level of interventionism (as included in Tables 1 to 3, above) may be a good compromise. Notably, it may follow that a 'softening' of the highly interventionist approach of the Chinese Social Credit System with tools developed elsewhere may achieve the 'best of both worlds'. It is therefore worth examining how far legal and regulatory tools from the West (but possible also elsewhere) can address some of the shortfalls of rating systems but also retain their benefits. In the next sections, we therefore review some of the current debates

¹⁶⁷ Rule, above n 58, at 358.

¹⁶⁸ See 2.5 and 3.5 above.

regarding regulation (4.3 below), before returning to the Chinese system, now considered as a part of global trends (4.4 below).

4.3 *The complexities of regulating ratings*

The Chinese Social Credit System has been accompanied by a large volume of legislation and other policy documents: for example, a recent article lists 15-pages of documents produced by the central government and other public authorities,¹⁶⁹ and there are also many provincial and municipal pieces of legislation, discussed later in this section. The majority of those rules are about the technical operation of the Social Credit System, which is not the main focus of this paper. Thus, before returning to aspects of the current Chinese law at the end of this section, we start with the way some of the more general policy considerations have been addressed in Europe and elsewhere in the West. We identify here the benefits of data (for consumer protection and law enforcement), some concerns regarding competition, the possibility of discrimination, and the protection of privacy.

The European Commission deems ‘online rating and review systems’ as an important safeguard for sharing or collaborative economy platforms, especially in the absence of the relevant information or, in some circumstances, the inapplicability of consumer protection rules.¹⁷⁰ Law enforcement authorities have long recognised the valuable role played by records gathered in the private sector: consumer credit agencies in the US often provided co-operation,¹⁷¹ and present day intelligence and policing functions make use of data collected for private sector Internet purposes (whether for an Internet connection or an online service)¹⁷² or obtain it through interception,¹⁷³ all of which typically goes beyond what a state can gather through its own resources.¹⁷⁴

An extensive review carried out in anticipation of a 2016 OECD summit identified the effort it takes for users (providers and customers) of sharing economy and similar services to ‘build reputation’ through, for instance, positive ratings, or to understand how reputation is handled within a service.¹⁷⁵ This can be a disincentive to ‘switching’ between services, owing to the need to rebuild reputation or one’s understanding of trust and risk after a switch.¹⁷⁶

Others highlight, within a service, the extent to which the reliance upon rating and reputation may have a disparate impact on some groups and constitute a form of (albeit possibly unintended)

¹⁶⁹ Liang et al., above note 117, at 25-39.

¹⁷⁰ COM(2016) 356, ‘A European agenda for the collaborative economy’, p 10.

¹⁷¹ Lauer, above n 14, at 179, 212-3, 220-1, 244.

¹⁷² For the former see e.g. Directive 2006/24/EC on the retention of data generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks and amending Directive 2002/58/EC [2006] OJ L105/54. For the latter see e.g. Investigatory Powers Act 2016, part 7 (‘bulk personal dataset’ warrants); see also, regarding China, Michael LaForgia and Gabriel JX Dance, ‘Facebook Gave Chinese Giants Access to Data’ *New York Times* (6 June 2018) <https://www.nytimes.com/2018/06/05/technology/facebook-device-partnerships-china.html>.

¹⁷³ Paul Bernal, *Internet Privacy Rights: Rights to Protect Autonomy* (Cambridge University Press 2014) 108.

¹⁷⁴ Lisa Austin, ‘Technological tattletales and constitutional black holes: communications intermediaries and constitutional constraints’ (2016) 17 *Theoretical Inquiries in Law* 451. See further Dai’s argument that various approaches are ‘conceptually quite interventionist as they may appear, have in fact already been used by government actors’ in the US: Dai, above n 90, at 10-12.

¹⁷⁵ OECD, ‘Protecting Customers in Peer-Platform Markets’ (2016) OECD Digital Economy Papers No. 253 <https://doi.org/10.1787/5jlwvz39m1zw-en> 15.

¹⁷⁶ Kati Sipp, ‘Portable Reputation in the On-Demand Economy’ in Trebor Scholz and Nathan Schneider (eds), *Ours To Hack and To Own: the Rise of Platform Cooperativism* (OR Books 2016) 59-61; on the relationship between platform models, users, and data, see e.g. Nick Srnicek, *Platform Capitalism* (Polity 2018) 95, 110.

discrimination,¹⁷⁷ and how ‘neutral’ systems, even where there is no evidence of consumer discrimination, can still produce unequal outcomes on vectors such as gender pay.¹⁷⁸ Although the specific area of credit benefits from explicit prohibitions on the use of certain data, even this area sees the use of alternative data sources that may aid in discrimination in practice.¹⁷⁹ Some argue, however, that reputation-led approaches could still *displace* existing discrimination,¹⁸⁰ or flag an open question as to whether algorithmic approaches could make hidden discrimination visible *and* create further problems of discrimination anew.¹⁸¹ A recent decision of an equality tribunal in Finland highlighted how automated decisions made by credit entities through statistical profiling can violate anti-discrimination provisions of national law.¹⁸² Both data collected from users (possibly including browsing history)¹⁸³ and credit records¹⁸⁴ can be used as an aid to price differentiation, which is also controversial (and has the potential for disparate impact).

It is clear from case law on privacy as a human right that the most extreme forms, such as the compiling and use of a ‘blacklist’ of workers on the grounds of their trade union activity, is suspect.¹⁸⁵ The parallel growth in significance of data protection law, first in individual states and then through a Council of Europe convention¹⁸⁶ and EU Directive,¹⁸⁷ and most recently the coming into force of an extensive General Data Protection Regulation in the European Union (GDPR),¹⁸⁸ provides a partial framework for the regulation of rating and reputational data. Data protection laws provide further detail on the conditions under which the processing of personal data is lawful. One example is whether there is a way that data can be updated and challenged. Automatic deletion of negative information after a set period has been a feature of some credit recording systems,¹⁸⁹ and the famed challenge to Google’s indexing of an old news report on the forced sale of property on foot of an unpaid debt succeeded on the basis of data protection law¹⁹⁰ even before it was strengthened in the GDPR. With the GDPR now in force, further attention is likely to be paid to the right, in some circumstances, not to

¹⁷⁷ Ben Edelman and Michael Luca, ‘Digital Discrimination: The Case of Airbnb.com’, Harvard Business School Working Paper 14-054, 2014, available at <http://ssrn.com/abstract=2377353>.

¹⁷⁸ Cody Cook, Rebecca Diamond, Jonathan Hall, John A. List, and Paul Oyer, ‘The Gender Earnings Gap in the Gig Economy: Evidence from over a Million Rideshare Drivers’ NBER Working Papers 24732, June 2018, available at <https://ideas.repec.org/p/nbr/nberwo/24732.html>.

¹⁷⁹ Marron, above n 12, at 157.

¹⁸⁰ See e.g. Lior Jacob Strahilevitz, ‘Less Regulations, More Reputation’ in Hassan Masum and Mark Tovey (eds), *The Reputation Society: How Online Opinions Are Shaping The Offline World* (MIT Press 2012) 68.

¹⁸¹ Mireille Hildebrandt, ‘Law as Computation in the Era of Artificial Legal Intelligence: Speaking Law to the Power of Statistics’ (2018) 68 *University of Toronto Law Journal* (supp 1) 12, 30.

¹⁸² *Svea Ekonomi AB* (National non-discrimination and equality tribunal, 21 March 2018) http://yvltk.fi/material/attachments/yvltk/tapausselosteet/45LI2c6dD/YVltk-tapausseloste-_21.3.2018-luotto-moniperusteinen_syrjinta-S-en_2.pdf (translation). See also Jennifer Cobbe, ‘Administrative Law and the Machines of Government: Judicial Review of Automated Public-Sector Decision-Making’ Working Paper (6 August 2018), available at <https://ssrn.com/abstract=3226913>, at 37-39.

¹⁸³ Office of Fair Trading, *Personalised Pricing: Increasing Transparency To Improve Trust* (OFT 1489, 2013); Neil Howe, ‘A Special Price Just for You’ *Forbes* (17 November 2017) <https://www.forbes.com/sites/neilhowe/2017/11/17/a-special-price-just-for-you/>.

¹⁸⁴ Marron, above n 12, at 133-4.

¹⁸⁵ *Smith v United Kingdom* App no 54357/15 (ECtHR, 28 March 2017).

¹⁸⁶ Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (CETS 108).

¹⁸⁷ Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data, [1995] OJ L281/31.

¹⁸⁸ Regulation 2016/679/EU on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, [2016] OJ L119/1 (‘General Data Protection Regulation’).

¹⁸⁹ Lauer, above n 14, at 225.

¹⁹⁰ Case C-131/12 *Google Spain v AEPD*.

be subject to a decision with legal or similar effects based solely on automated processing,¹⁹¹ and the possibility, in other circumstances where automated decision-making is lawful, to receive an explanation and an opportunity to challenge.¹⁹² Nonetheless, there will continue to be situations (expressly provided for in GDPR) where consent is not required (as other legal bases are available), which supports the development of powerful, potentially universal systems.

Provisions of this type may begin to provide a framework where problems of validity and reliability, which have been the subject of warnings both in the West and in China,¹⁹³ can be addressed. However, although influenced by earlier Western laws,¹⁹⁴ Chinese law on privacy and data protection remains fragmented and drafted in reaction to specific problems rather than as an overarching framework,¹⁹⁵ while such fragmentation is also a feature of US law (though credit records are, as discussed above, one of the areas subject to specific regulation), but less of a problem in the European Union. Similarly, privacy and data protection concerns are at the core of the criticism of services like Peeples, a proposed service that would have allowed individuals to ‘rate’ others whether they used the service or not. Thus, it was subsequently launched as a more limited service in light of such concerns,¹⁹⁶ though somewhat similar projects are also being developed by others, especially regarding online dating.¹⁹⁷

Specifically concerning the Chinese situation, the relevance of access and correction rights under privacy and data protection law are said to be affected by the limitations on actions against public authorities in Chinese law.¹⁹⁸ Even as far as judicial review of public authorities is feasible, the issue remains how far Chinese courts can be said to be independent enough in deciding cases that involve the state on the one side and private parties on the other.¹⁹⁹ It is beyond the scope of this paper to discuss this general issue about courts in China in detail – and, to the best of our knowledge, there have not yet been any judicial challenges in matters concerning the Social Credit System in China. From a policy perspective, however, we suggest that judicial review should be provided as a way of protecting individual rights but also as a means of checks and balances of the design and operation of the Social Credit System.

¹⁹¹ General Data Protection Regulation, above n 188, art 22(1).

¹⁹² *Ibid*, recital 71 and art 22(3). See further Sandra Wachter, Brent Mittelstadt and Luciano Floridi, ‘Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation’ (2017) 7 *International Data Privacy Law* 76.

¹⁹³ Criticisms ranging from fake reviews (Angela Giuffrida and Antonia Wilson, ‘Man jailed in Italy for selling fake TripAdvisor reviews’ *The Guardian* (12 September 2018) <https://www.theguardian.com/world/2018/sep/12/man-jailed-italy-selling-fake-tripadvisor-reviews-promo-salento>) to an skewing upwards of scores where there is a personal context or reciprocity (Slee, above n 49, loc 1751ff; for China, see 3.6, above).

¹⁹⁴ Cao Jingchun, ‘Protecting the Right to Privacy in China’ (2005) 36 *Victoria University of Wellington Law Review* 645, 660-4.

¹⁹⁵ Chen and Cheung, above n 147, at 357.

¹⁹⁶ Botsman, above n 113 (‘but Uber ratings are nothing compared to Peeples, an app launched in March 2016, which is like a Yelp for humans’; Katie Rogers, ‘“Yelp for People” App Founder Says Peeples Won’t Be “Shamed Into Submission”’ *New York Times* (5 October 2015) <https://www.nytimes.com/2015/10/06/technology/yelp-for-people-app-founder-says-it-wont-be-shamed-into-submission.html>).

¹⁹⁷ <http://www.doidate.com> and see Samuel Fishwick, ‘The new dating app that’s like a “TripAdvisor for people”’ *Evening Standard* (18 January 2018) <https://www.standard.co.uk/dating/do-i-date-dating-app-rate-date-a3743651.html>.

¹⁹⁸ Chen and Cheung, above n 147, at 373.

¹⁹⁹ Wei Cui, Jie Cheng, and Dominika Wiesner, ‘Judicial Review of Government Actions in China’ (Working Paper, 20 August 2018), available at <https://ssrn.com/abstract=3228175>. See also 3.6, above, for references to the discussion about the rule of law in China.

Considering further details of Chinese law, the provincial and municipal pieces of legislation are the ones that address issues of the Social Credit System in the most coherent and concise fashion.²⁰⁰ For example, the 56 articles of the Shanghai Social Credit Regulations 2017 are structured according to the headings (i) General provisions, (ii) Social credit information, (iii) Credit incentives and restrictions, (iv) Protection of information subjects' rights and interests, (v) Regulating and advancing the development of the credit services industry, (vi) The establishment of a social credit environment, (vii) Legal responsibility, and (viii) Supplemental provisions, with a noticeable desire to provide legal certainty to anyone affected by the Social Credit System. However, this is apparently also done in a way that does not limit the possible actions of the state authorities, as wide general sanctions such as 'restrict entry into relevant markets and industries' and 'restrict enjoyment of relevant public policies' show.²⁰¹

4.4 The Social Credit System in a global context

Key to understanding the history of rating in the West and the controversy over the Social Credit System in China is the recognition that all systems are based on a certain combination of inputs and outputs, which may have strong normative or behavioural dimensions. As argued in an early account of the developing Social Credit System, drawing explicit links between developments in the West and in China, 'in both Silicon Valley and in Beijing, there is this notion that we can use technology to shape and reshape incentives in such a way that people will behave better'.²⁰² In this section, therefore, we situate the Social Credit System in a broader context, first identifying character, information systems, and participation as core concerns, before turning to explore the degree to which reputation-based systems can be regulated. In so exploring the prospects for regulation, we draw again upon historical antecedents and developments in cognate areas (e.g. the power of online 'platforms' more generally), highlighting the implications of the complexity discussed in 4.3, above.

The history of credit registries and scores identifies a long-running 'character' dimension, including the desired impact upon consumer behaviour, the framing of a good credit score as a moral virtue, the use of data (via informants or otherwise) on personal character, and attempts to incorporate factors such as 'honesty' and 'clean living' into scoring.²⁰³ Sesame Credit may be novel if it makes use of video game playing as a signal,²⁰⁴ though American credit rating pioneers were well ahead of Alibaba in making careful note of alcohol consumption and gambling habits.²⁰⁵ The ways in which systems in China – or indeed experiments like Lenddo, using carefully chosen proxies²⁰⁶ – address these issues is therefore not a difficult leap from this American history of scoring. Moreover, the linguistic similarities of the Mandarin terms discussed above (e.g. sincerity, honesty)²⁰⁷ emphasise a point also understood in the West (where credit – and indeed credibility – derive from the Latin 'credere', for trust or belief, with the Christian 'Creed' taking its English name from its Latin opening words, 'credo in unum Deum' (I believe in one God).

²⁰⁰ For an overview with links to translations into English see <https://www.chinalawtranslate.com/giving-credit-2-carrots-and-sticks/>.

²⁰¹ Art. 31 of the Shanghai Social Credit Regulations 2017.

²⁰² Rogier Creemers, quoted in Charles Clover, 'When big data meets big brother' *Financial Times* (19 January 2016) <https://www.ft.com/content/b5b13a5e-b847-11e5-b151-8e15c9a029fb>

²⁰³ Rona-Tas and Guseva, above n 21, at 61-2; see also Lauer, above n 14, at 4 (behaviour), 127 (virtue), 163 (informants), 172 (honesty etc).

²⁰⁴ See 3.4, above.

²⁰⁵ Lauer, above n 14, at 106, 161.

²⁰⁶ Hynes, above n 69.

²⁰⁷ See 3.2, above.

Furthermore, both the relatively uniform approach being worked up in China and the less obviously interconnected developments in the West can be understood as part of the continuing reverberations of how information systems now operate – that is, the mainstreaming of digital technologies and the vast amounts of data that are created (not just by institutions but by individuals). Such data can come through deliberate disclosure (e.g. on social media or by agreeing to take part in a loyalty scheme), but also through their data trails (e.g. browsing history, location data collected by an app) and through the actions of other individuals. The initiatives in China are influenced by a systems theory approach to information, paying special attention to flows and loops as an emerging modality of governance.²⁰⁸ Unsurprisingly, some analysts of the Social Credit System ask questions about how the availability and reuse of reputational data, especially at the level of big data, affects the regulatory state itself²⁰⁹ – just as developments in information processing and management, and theoretical consideration of systems theory approaches, informed Western approaches to governance during the post-1945 period²¹⁰ and are at the heart of debate on the degree to which the Internet itself can be governed.²¹¹ The arguments that performance management schemes have become normalised and so now require the analysis of mission, commensuration, and vision,²¹² and that classifications embedded in information infrastructures require political and ethical study,²¹³ are surely capable of application to the various systems we discuss here, including those still in development.

Finally, it can be noted that the centrality of ratings and reputation poses questions about the relationship between technology and representative democracy. In Europe and North America, one iteration of such is speculation regarding whether new deployments of information technologies could support new or revitalised forms of public participation.²¹⁴ As explained in the discussion of novel forms of credit scoring,²¹⁵ the hypothesis that better use of a broader range of data democratises access to resources and markets is clearly present in the arguments of developers. In the case of China, although there is speculation whether China will democratise,²¹⁶ this seems rather unlikely in the near future. So, while the Social Credit System may give Chinese citizens more control over the impact of their actions than previously,²¹⁷ in China technology may rather be seen as an alternative to representative democracy. In other words, it is suggested that the Social Credit System can be one of the means used by ‘the center of figuring out what’s going on at lower levels and across society’ instead of relying on electoral feedback and related forms of civil activism.²¹⁸

With these points in mind, we now turn to broader questions of how the technologies in use might be the subject of regulation. The innovation associated with recent developments in China provides a useful set of sub-questions that will inform the debate on how reputation-based systems ought to be regulated in the West, and indeed. With key differences between conventional Western credit scoring and the Social Credit System including the use of a broader set of data, the enforcement of outcomes,

²⁰⁸ Creemers, above n 94, at 7.

²⁰⁹ Dai, above n 90, at 31; Liang et al, above n 117, at 2-3.

²¹⁰ Black, above n 18, at 360-1.

²¹¹ Andres Guadamuz, *Networks, Complexity and Internet Regulation: Scale-free Law* (Edward Elgar 2011) 96.

²¹² Mehrpouya and Samiola, above n 26, at 28.

²¹³ Bowker and Star, above n 24, at 321.

²¹⁴ See e.g. John Morison, ‘Gov 2.0: Towards a User Generated State?’ (2010) 73 *Modern Law Review* 551; Matthew Hindman, *The Myth of Digital Democracy* (Princeton University Press 2009).

²¹⁵ See 2.4, above.

²¹⁶ See e.g. Andrew J. Nathan, Larry Diamond, Marc F. Plattner (eds.), *Will China Democratize?* (Baltimore: John Hopkins University Press 2013).

²¹⁷ See the discussion in 3.5, above.

²¹⁸ Christina Larson, ‘Who needs democracy when you have data?’ *MIT Technology Review* (20 August 2018) <https://www.technologyreview.com/s/611815/who-needs-democracy-when-you-have-data/>.

and the use of devices and sensors to add real-time data,²¹⁹ and the clear echoes of each of these points in the historical evolution of credit and reputation schemes in the West (e.g. the impact of computerisation, or the link between reputation and continued use of a platform), these go beyond theoretical questions. Indeed, critiques of innovation both in the established credit sector and in social media²²⁰ demonstrate the types of concerns that will inform debate on the regulatory approach to reputation in the very near future. If these systems ‘spread’ to other spheres of interaction and governance, lessons learned from earlier implementations of reputation-led approaches will form an important part of the design process.

A tension between centralised and distributed or fragmented reputation and rating systems is evident both in China and in the West. An overt form of centralisation appears more likely in the former (where private systems may be permitted limited autonomy within the context of an overarching system) than in the latter (where single systems of data are the subject of particular criticism, even where the same effect is achieved by less direct means).²²¹ On the other hand, both the approach to development in China (which allows for municipal variation)²²² and the fashion for city- or sub-city based experimentation with data collection and analysis in Western ‘smart city’ initiatives²²³ pose more difficult questions. Should the spread of reputation-based systems be seen as a type of policy diffusion?²²⁴ If so, could spatially limited initiatives avoid the worst effects of mass surveillance and allow for the impact of variations in design and implementation to be tested? Or are Western cities, as Greenfield argues, setting out the ‘material conditions ... for Chinese-style social credit to spread’?²²⁵

Although we have sought to explain the impact of intervention across a number of sub-categories, it may be the case that a recommendation independent of context is not possible. Instead, the degree of intervention may be determined in light of overriding questions. What are the means by which accountability can be best secured? Is competition (and the pressure that it might create towards accuracy and relevance) appropriate? How can a system remain responsive (for instance, adaptable and flexible in light of technological developments or attempts to exploit a system inappropriately)?

Moreover, the primary locus of intervention is likely to be the provider of the rating system. In some cases, this will be a service provider or the administrator of a platform through which others provide services; in other cases, the platform may manage a rating system but not be involved in the delivery of a specific service – also noting that much of the legal complexity of the developing system in China is found in the interaction between different emanations of the state and between state and non-state entities.²²⁶ In the specific area of reputation systems, it has been recognised that the initial position that the ‘abundant information’ available makes intervention unnecessary has come under challenge,

²¹⁹ Ohlberg et al, above n 110, at 4.

²²⁰ Most famously disclosed by the controversy regarding political microtargeting, see e.g. Jennifer Cobbe, ‘Reining in Big Data’s Robber Barons’ *New York Review of Books* (12 April 2018) <https://www.nybooks.com/daily/2018/04/12/reining-in-big-datas-robber-barons/>, and by developments in advertising, see e.g. Johnny Ryan, ‘Risks in IAB Europe’s proposed consent mechanism’ *PageFair* (20 March 2018) <https://pagefair.com/blog/2018/iab-europe-consent-problems/>.

²²¹ Backer, above n 120, at 8.

²²² Yi Li and Fulong Wu, ‘The Transformation of Regional Governance in China: The Rescaling of Statehood’ (2012) 78 *Progress in Planning* 55. For the Social Credit System see 3.3 (pilot cities), above.

²²³ Rob Kitchin, ‘The Promise and Perils of Smart Cities’ (2015) 26(2) *Computers and Law*; Steven Latre, Philip Leroux, Tanguy Coenen, Bart Braem, Pieter Ballon, and Piet Demeester, ‘City of Things: An Integrated and Multi-Technology Testbed for IoT Smart City Experiments’ [2016] *IEEE International Smart Cities Conference* <https://dx.doi.org/10.1109/ISC2.2016.7580875>; Laura Bliss, ‘How Smart Should a City Be? Toronto Is Finding Out’ *CityLab* (7 September 2018) <https://www.citylab.com/design/2018/09/how-smart-should-a-city-be-toronto-is-finding-out/569116/>.

²²⁴ See 4.1, above.

²²⁵ Greenfield, above n 2.

²²⁶ Chen and Cheung, above n 147, at 367-9.

especially on the grounds of transparency and accountability.²²⁷ The continuing evolution of data-driven approaches to reputation also requires further study of the impact of measurement upon behaviour, including the creation of perverse incentives and non-productive attempts to ‘game’ systems.²²⁸

We have already seen a refocusing of regulatory efforts in the European Union towards platforms of various sorts, which provides some guidance on possible approaches for rating systems. A good example is online dispute resolution, where a Regulation and Directive of 2013 sets standards for approved dispute resolution providers (i.e. expertise, independence and impartiality; transparency; effectiveness; fairness; legality; liberty) and requires others to link to or cooperate with approved providers.²²⁹ More recent scoping work by the European Commission identifies a broad category of ‘platforms’ which have increasing significance and influence, for which existing legal tools in fields such as competition and liability may alone be suboptimal.²³⁰ Similarly, there is a lively debate on the regulation of emerging applications of artificial intelligence,²³¹ going beyond the specific issues of automation dealt with (to some extent) by existing law and overlapping with calls for accountability and transparency regarding the use of algorithms,²³² which without attention may make ‘decisions ... inscrutable and thereby incontestable’.²³³

In concluding this contextual analysis of reputation systems, it is helpful to recall a recent debate in the field of law and development – the rapid *economic* development of China and the possible role of Western-style law in promoting it.²³⁴ Here then the Social Credit System may indicate a paradigm shift in both aspects of this causal relationship: it challenges us to move beyond Western-style law and it poses the question how a system that also promotes *social* development can be designed. Shaming, to give one example, is a powerful feature of Internet communications, whether in a formal sense as under development in China²³⁵ or for all users, especially of social media.²³⁶ The presentation of the Social Credit System as farfetched or as an exemplar of State control of information is not just complacent; it ignores the longer history of reputational information in various Western contexts, and the degree to which similar phenomena have taken on significance, albeit with different levels of intervention, in transnational e-commerce and sharing platforms (and in the most recent attempts to reuse or merge data). For example, the unfinished business of whether new approaches to reputation

²²⁷ Ranchordás, above n 64, at 129; Dai, above n 90, at 7-8.

²²⁸ Exploring this point in the context of institutional rankings: Espeland and Sauder, above n 25, at 29-31; updated in Wendy Nelson Espeland and Michael Sauder, *Engines of Anxiety: Academic Rankings, Reputation, and Accountability* (Russell Sage 2016).

²²⁹ Pablo Cortes, ‘A New Regulatory Framework for Extra-Judicial Consumer Redress: Where We Are and How to Move Forward’ (2015) 35 *Legal Studies* 114, 119-20; Regulation 524/2013/EU of 21 May 2013 on online dispute resolution for consumer disputes, [2013] OJ L165/1, art 14; Directive 2013/11/EU of 21 May 2013 on alternative dispute resolution for consumer disputes, [2013] OJ L165/63, arts 5-11.

²³⁰ COM(2016) 288, ‘Online Platforms and the Digital Single Market: Opportunities and Challenges for Europe’; see also COM(2016) 356, above n 170. For an alternative approach, favouring a public utilities model instead of regulation, yet beyond the surveillance state, see Srnicek, above n 176, at 128.

²³¹ See e.g. House of Lords Select Committee on Artificial Intelligence, *AI in the UK: ready, willing and able?* (HL Paper 100, 2017-19).

²³² House of Commons Science and Technology Committee, *Algorithms in decision-making* (HC 351, 2017-19).

²³³ Hildebrandt, above n 181, at 28.

²³⁴ See e.g. D Kennedy and J Stiglitz (eds), *Law and Economics with Chinese Characteristics: Institutions for Promoting Development in the Twenty-First Century* (Oxford University Press 2014); G Xu, *Does Law Matter for Economic Growth? A Re-examination of the ‘Legal Origin’ Hypothesis* (Intersentia 2014); G Yu, *The Roles of Law and Politics in China’s Development* (Springer 2014); G Yu (ed), *Rethinking Law and Development: The Chinese Experience* (Routledge 2014).

²³⁵ See 3.2 and 3.3, above, as well as 3.6 for cross-cultural differences in shame response.

²³⁶ E.g. Jon Ronson, *So You’ve Been Publicly Shamed* (Picador 2016).

promote access to finance for the 21st century ‘honest but poor’ of China or the 19th century hardworking immigrant to the United States, or constitute a new threat of further discrimination – or both – requires a less complacent approach. Consideration of what is underway in China can therefore, for instance, prompt productive discussion of the adequacy and focus of existing regulatory mechanisms in the West – especially at a time of unprecedented scrutiny of the ethics of Silicon Valley and the implications of the digital revolution.

5. Conclusion

In English-language newspapers a common frame of discussing the Chinese Social Credit System is an episode of the science fiction series ‘Black Mirror’.²³⁷ This episode, *Nosedive*, imagines a future society in which every citizen has a rating from ‘0’ to ‘5’ which derives from the subjective assessments made by everyone else using a mobile phone app. This rating then has a social function (in the episode: who gets invited to a wedding party), but it also determines commercial decisions (in the episode, for example, the type of car you can hire or neighbourhood in which you can live) and access to public services (in the episode: in prioritising medical treatment). At its extreme, the rights of the individual are at stake; the episode closes with the main character’s score dropping to zero, and so removed from the ‘platform’ – through the removal of the lenses that provide, in the style of augmented reality, real-time access to data – and, apparently, imprisoned.

The intuitive parallel to the Chinese system is that, here too, individuals are rated with a single score and that this score can have for a variety of consequences. However, there are some profound differences. The most obvious one is that the Social Credit System is not based on the subjective ratings by other citizens. Indeed, it may be said that this subjectivity is closer to the contemporary Western ratings such as Uber and Airbnb than the more objective (and more algorithmic) emerging Chinese one. Moreover, from a normative perspective, a recent newspaper article notes: ‘No, China isn’t Black Mirror – social credit scores are more complex and sinister than that’ given that in ‘China and elsewhere, the implied threat isn’t the tyranny of the crowd, but state and corporate power’.²³⁸ In support of this mere acceptance of contemporary Western ratings, it could also be said that it is just a normal feature of human societies that we depend on the subjective judgments of others, regardless whether this is quantified or not.

Yet, this negative comparative assessment of the Social Credit System may not be a matter of course. Ratings initiated by the state or companies may be designed in a way that they provide targeted incentives (not simply ‘being nice’ as in the Black Mirror episode – which is silent on how the system came about or who controls it). It may also be an advantage that ‘interventionist’ or centrally planned rating systems can more easily be shaped and controlled by law and regulation. This is relevant for the Chinese context as the Social Credit System is in a transitional stage with its current mix of China-wide blacklists and ratings by pilot cities and financial institutions. It is also relevant for Western countries where, at present, public authorities are more likely to engage with rating and reputation systems through acquiescence or encouragement, and only sometimes through regulation, which may be indirect.

Thus, in this paper, we argue that the Chinese *models* (not *model*) of new approaches to credit should be studied in the West, not as a template or even a counter-model, but as illustrations of the implications of today’s emphasis upon quantification and reputation across a range of domains,

²³⁷ A combined Google News search for ‘social credit system’ and ‘black mirror’ leads to 1,390 hits as of 30 November 2018.

²³⁸ ‘No, China isn’t Black Mirror – social credit scores are more complex and sinister than that’ *New Statesman* (27 April 2018), <https://www.newstatesman.com/world/asia/2018/04/no-china-isn-t-black-mirror-social-credit-scores-are-more-complex-and-sinister>. On how the SCS ought to prompt a wider reassessment of surveillance and power, see e.g. Katika Kühnreich, ‘Soziale Kontrolle 4.0? Chinas Social Credit Systems’ [2018] 7 *Blätter für deutsche und internationale Politik* 63 <https://www.blaetter.de/archiv/jahrgaenge/2018/juli/soziale-kontrolle-4.0-chinas-social-credit-systems>.

personal and official. Such illustrations can also inform law-making efforts in the West. Specifically, this paper addressed some of the core general issues that law makers should consider. We discussed six aspects where the degree to which the activity is regulated (or indeed directly managed by a public authority) can be identified: drafters, aims, scoring systems, application, use of algorithms, and enforcement. We also indicated that law making in this field can be either through the introduction of a new regulatory regime or the application of general requirements to a particular context. It may also be unlikely that there will be a single ‘law on ratings’ given the relevance of many overlapping policy considerations and corresponding fields of law, such as e-commerce law, privacy and data protection law, anti-discrimination law, tort law, competition law, sector specific regulation on financial services, and so forth.

Finally, we suggest that where there is a need for regulation, the first focus should be on the provider of the rating system. This should also incorporate means by which accountability can be best secured, such as forms of online dispute resolution but also the availability of conventional judicial scrutiny. Importantly, any law making in this field also needs to be done with full understanding of the technological and behavioural aspects of the rating systems under consideration: for example, we have noted problems of validity, reliability and responsiveness, including attempts to ‘game’ systems. Thus, this calls for not only a comparative but also an interdisciplinary perspective, as we also aspired to in this paper. Rating systems have been commercially and socially important in different ways in China and elsewhere, and so questions of regulation require not just attention to the systems currently used in one context (or on an apparently voluntary basis), but to the ways in which they are likely to develop, through taking on additional functions or more ambitious types of aggregation.

