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

Daithí Mac Síthigh and Mathias Siems
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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 The authors wish to thank Jiahong Chen, Zhiyu Li, Jieying Liang, Shaowei Lin, Xiangyang Qian, Shen Wei, Chuanman You, Tianshu Zhou as well as Catalina Goanta, Karen Mc Cullagh, John Morison and Ole Pedersen for helpful comments. The usual disclaimer applies.


⁴ For details see 3., 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).


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 orders\(^11\)).

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 21\(^{st}\)-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’.\(^13\)


\(^9\) 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.


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

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. Other significant developments include the emphasis upon individual ‘scores’ in the late 20th century, and continuous monitoring and surveillance rather than simple blacklisting (or, as Pasquale puts it regarding the 21st century, the move to a ‘scored society’ in place of mere credit scores). These developments sit within 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 misunderstanding and replace uncertainty with an assessment of risk. 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.

Credit scoring has also developed in the UK and across Europe – 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 US) by Great Universal Stores (a UK-based mail order retailer which had developed a successful credit scoring function of its own), 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’. 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 revolution and a shift towards the ‘production of performance...

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15 Ibid 249.
16 Marron, above n 12, at 105-7; Lauer, above n 14, at 60.
19 Carruthers, above n 13, at 529.
20 Lauer, above n 14, at 191.
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).
information with regulatory or quasi-regulatory purposes. Well-known examples include assigning core research funding to universities in the United Kingdom (and, increasingly, elsewhere), and the evaluation of federal government programmes in the United States. The economic impact of prizes for contemporary art and the grading of restaurants 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. 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, 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. These ‘calculative practices [which] render previously incomparable elements visible and comparable’, 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, 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 and normalise the collection and communication of data in this fashion, and allow for more effective methods of presentation and analysis.

(Contd.)


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’. 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. 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. Moreover, a user’s ability to trade in the future will be affected by their score and feedback and therefore by their earlier actions; 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; it also allows eBay to exclude from the marketplace users with very low ratings.

Present-day observers note that online trust encompasses ‘digital social capital’ and various means of certifying and validating market participants. 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, 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. 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.

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.

Consequently, all major economy platforms, such as Uber, Airbnb, and TaskRabbit, and indeed

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38 Calliess, above n 36, at 653.
39 Botsman and Rogers, above n 17, at 140.
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.
43 Lauer, above n 14, at 26, 33.
45 Michael Fertik and David Thompson, The Reputation Economy (Random House 2015).
precursors such as CouchSurfing, make use of a combination of scoring and feedback systems.\textsuperscript{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.\textsuperscript{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,\textsuperscript{49} while a passenger is more likely to be picked up if they have a high rating from past drivers\textsuperscript{50} (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).\textsuperscript{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.\textsuperscript{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).\textsuperscript{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,\textsuperscript{54} to incentivise good behaviour and drive active participation and engagement over a longer period.\textsuperscript{55} Such

\textsuperscript{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’).

\textsuperscript{48} Sundararajan, above n 42, at 25; Brad Stone, \textit{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’ \textit{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’).

\textsuperscript{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): \textit{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, \textit{What’s yours is mine: against the sharing economy} (Scribe 2017) loc 1286.


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


\textsuperscript{54} E.g. ‘taking things that aren’t games and trying to make them feel more like games’: Flavio Eshirbano, ‘Gamification As the Post-Modern Phalanstèrè’ in Peter Zackariasson and Timothy Wilson (eds), \textit{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, \textit{Reality is Broken: Why Games Make Us Better and How They Can Change the World} (Vintage 2012) 148.

\textsuperscript{55} Juho Hamari, Mimmi Sjöklint and Antii Ukkonen, ‘The Sharing Economy: Why People Participate in Collaborative Consumption’ (2016) \textit{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.  

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. 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. 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, in particular, car hire companies can choose not to rent cars to drivers who have exceeded a particular limit of penalty points.

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. 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. More generally, the (private) rating of bonds has long played a role in public finances, including statutory requirements.

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.

(Contd.)


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.


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. 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, while minimising exposure to defamation claims has long been a concern for the credit rating industry and for (non-sharing) online review sites alike.

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. 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. A Singapore-based lender, Lenddo, claims to use ‘non-traditional data…to economically empower the emerging middle class’, which includes various social media sources. 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.


66 For the former: Lauer, above n 14, at 42 (defamation in general) and 68 (historic (though now discontinued) practice of communicating information verbally and in restrictive circumstances). For the latter: Seaton v TripAdvisor (2013) 728 F 3d 592; Clark v TripAdvisor [2014] CSHI 110; Barki 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).


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. 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. 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.

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 States 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. 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.

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]’.

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, 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, as has

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.
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 services\textsuperscript{80} and in a wide range of other contexts, including ‘auto insurance assessments, cell phone contracts, residential rentals and even hiring decisions’.\textsuperscript{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’.\textsuperscript{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)\textsuperscript{83} and Klout (which attempted to measure ‘social media influence’ across multiple platforms, and closed in 2018).\textsuperscript{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 platform\textsuperscript{85}) and facilitating ‘switching’ between services.\textsuperscript{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 recognition\textsuperscript{87}) and the cross-referencing of merchant or ecommerce data with records obtained from data brokers (including those who have historically assigned credit scores).\textsuperscript{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.

\textsuperscript{80} E.g. http://creditscoredating.com; see O’Neal, above n 75, at 321.
\textsuperscript{81} Akos Rona-Tas, ‘The Off-Label Use of Consumer Credit Ratings’ (2017) 42 Historical Social Research 52, 53.
\textsuperscript{82} Botsman and Rogers, above n 17, at 219.
\textsuperscript{83} https://sociota.net.
\textsuperscript{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.
\textsuperscript{86} Vassilis Hatzopoulos, \textit{The Collaborative Economy and EU Law} (Edward Elgar 2018) 197.
\textsuperscript{88} Turow, above n 67, at 155-7.
The Chinese social credit system: A model for other countries?

Table 1: Degree of interventionism in rating systems

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

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 operate – 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

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

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

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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.v22i112.7908.
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 Centre\(^92\) 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

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\(^92\) See http://www.pbcrc.org.cn/crc/ (available in English) and https://ipcrs.pbcrc.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. A 2011 decision then also referred to ‘matters of social and political morality’ as points of concern. 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)’, 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.

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, 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. Subsequently, a degree of centralisation has taken place. A central website makes the names of the blacklisted persons publicly available. There is also now a system in place that requires cooperation of authorities in their sanctions (the Joint Punishment System). 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.

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

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95 See Martin Chorzempa, Paul Triolo, and Sammi 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.


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


103 For the latter point see 3.4, below.
correction of or relief from the blacklist under certain conditions.\textsuperscript{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.\textsuperscript{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.\textsuperscript{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.\textsuperscript{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).\textsuperscript{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.\textsuperscript{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.\textsuperscript{110}

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

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\textsuperscript{104} See e.g. www.chinatax.gov.cn/eng/n2367751/c3633676/content.html

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

\textsuperscript{106} For this legislation see also 4.3, below.


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

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

\textsuperscript{110} See Mareike Ohlberg, Shazeda Ahmed, and Bertram Lang, ‘Central Planning, Local Experiments: The complex implementation of China’s Social Credit System’ \textit{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.\(^\text{111}\) 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.\(^\text{112}\) 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).\(^\text{113}\)

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,\(^\text{114}\) 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.\(^\text{115}\)

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.\(^\text{116}\) It also seems that the PBOC now

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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?

118 See 3.1, above.
119 See 2.5, above.
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.\textsuperscript{121} The Chinese media mentions the way the Social Credit System can create a ‘culture of integrity’, solve economic problems and improve governance.\textsuperscript{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.\textsuperscript{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,\textsuperscript{124} and that the ‘gamification’ of the Sesame Credit score as a reward system may be one of its practical advantages.\textsuperscript{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.\textsuperscript{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,\textsuperscript{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.\textsuperscript{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.\textsuperscript{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.\textsuperscript{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’,\textsuperscript{131} an invention of ‘the digital totalitarian

\begin{itemize}
  \item[121] See e.g. Martin Maurtvedt, \textit{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).
  \item[122] Ohlberg et al., above n 110, at 5-7.
  \item[124] Botsman, above n 113, citing a blogger based in Shanghai.
  \item[126] Cf. Creemers, above n 94, at 1 (Social Credit System as a substitute for weak law enforcement).
  \item[127] See e.g. Joseph Cannataci, ‘Privacy, Technology Law and Religions across Cultures’ [2009] \textit{Journal of Information, Law, and Technology} http://go.warwick.ac.uk/jilt/2009_1/cannataci. For China, see Maurtvedt, above n 121, at 40.
  \item[128] Creemers, above n 94, at 10.
  \item[130] ‘Sesame Credit apologizes for alleged Alipay privacy violation’ \textit{Global Times} (1 April 2018) http://www.globaltimes.cn/content/1083285.shtml; Ohlberg et al., above n 110, at 7; Maurtvedt, above n 121, at 36-7. See also 3.4 above (for the intervention of the PBOC).
  \item[131] Ohlberg et al., above n 110, at 12.
\end{itemize}
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 surveillance 136 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 for 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

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134 Botsman, above n 113.
135 Ibid.
136 Liang et al, above n 117.
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.
“intrusion”, 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. 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, whereas data protection and privacy legislation in China is fragmentary at best.

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. 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. 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’.

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’, while it is possible that in China a fully ‘interventionist’ system will be implemented in the near future: thus, it seems that, in comparison, this ‘unification of the various elements, and their seamless operation would be a great innovation’, or in any case ‘unique’ as compared to anything that is happening in the West.

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144 Backer, above n 120, at 14.
145 See generally Williamson, above n 137.
149 Ibid. (with examples from contract law and company law).
151 See 2.5, above.
152 See 3.5, above.
153 Backer, above n 120, at 14.
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.\textsuperscript{155} Chorzempa et al relate this to the use of background checks and ‘no-fly lists’ in the US;\textsuperscript{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.\textsuperscript{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.\textsuperscript{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)\textsuperscript{159} and disenfranchisement may follow automatically from imprisonment.\textsuperscript{160}

It can also be seen that the design and regulation of today’s rating systems are already clear examples of policy diffusion.\textsuperscript{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.\textsuperscript{162} In return, the growing global influence of China\textsuperscript{163} 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’,\textsuperscript{164} with ‘the potential to change law and government as we know them in China and beyond’.\textsuperscript{165} And while Pasquale highlights the shift towards a ‘scored society’ beyond the narrower functions of the 19\textsuperscript{th} and 20\textsuperscript{th} century, recent developments in China suggest, as noted above, a shift from ‘reputation society’ to ‘reputation state’.\textsuperscript{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

\textsuperscript{155} See 3.2, above.
\textsuperscript{156} Chorzempa et al., above n 95, at 4 and 7.
\textsuperscript{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.stubbsgazette.ie; for Germany: Zivilprozessordnung, s 882b (delegating this task to local courts).
\textsuperscript{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).
\textsuperscript{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: \textit{Hirst v United Kingdom} (2006) 42 EHRR 41. See also Colin Murray, ‘A Perfect Storm: Parliament and Prisoner Disenfranchisement’ (2013) 66 Parliamentary Affairs 511.
\textsuperscript{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 \textit{British Journal of Political Science} 673.
\textsuperscript{162} See 3.1, 3.5 as well as 2.4, above.
\textsuperscript{163} See 1, above.
\textsuperscript{164} Backer, above n 120, at 2.
\textsuperscript{165} Dai, above n 90, at 1.
\textsuperscript{166} See 2.5, above.
greater understanding of dangers?\textsuperscript{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.\textsuperscript{168}

<table>
<thead>
<tr>
<th>Table 4: Typical shortcomings of low and high interventionist rating systems</th>
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<tr>
<td><strong>Low</strong></td>
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<tr>
<td>1) Drafter</td>
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<td>2) Aim</td>
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<td>3) Scoring</td>
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<td>4) Application</td>
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<td>5) Algorithm</td>
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<td>6) Enforcement</td>
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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

\textsuperscript{167} Rule, above n 58, at 358.

\textsuperscript{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)

171 Lauer, above n 14, at 179, 212-3, 220-1, 244.
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.
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,\textsuperscript{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.\textsuperscript{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.\textsuperscript{179} Some argue, however, that reputation-led approaches could still displace existing discrimination,\textsuperscript{180} or flag an open question as to whether algorithmic approaches could make hidden discrimination visible and create further problems of discrimination anew.\textsuperscript{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.\textsuperscript{182} Both data collected from users (possibly including browsing history)\textsuperscript{183} and credit records\textsuperscript{184} 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.\textsuperscript{185} The parallel growth in significance of data protection law, first in individual states and then through a Council of Europe convention\textsuperscript{186} and EU Directive,\textsuperscript{187} and most recently the coming into force of an extensive General Data Protection Regulation in the European Union (GDPR),\textsuperscript{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,\textsuperscript{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 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 automatic deletion of negative information.\textsuperscript{190}

\begin{thebibliography}{99}
\bibitem{Marron} Marron, above n 12, at 157.
\bibitem{Strahilevitz} 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.
\bibitem{Marron2} Marron, above n 12, at 133-4.
\bibitem{Smith} Smith v United Kingdom App no 54357/15 (ECtHR, 28 March 2017).
\bibitem{Convention} Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (CETS 108).
\bibitem{Regulation} 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’).
\bibitem{Lauer} Lauer, above n 14, at 225.
\bibitem{Case} Case C-131/12 Google Spain v AEPD.
\end{thebibliography}
be subject to a decision with legal or similar effects based solely on automated processing, and the possibility, in other circumstances where automated decision-making is lawful, to receive an explanation and an opportunity to challenge. 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, can be addressed. However, although influenced by earlier Western laws, Chinese law on privacy and data protection remains fragmented and drafted in reaction to specific problems rather than as an overarching framework, 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 Peeple, 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, though somewhat similar projects are also being developed by others, especially regarding online dating.

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. Even as far as judicial review of public authorities is feasible, the issue remains how far Chinese courts can said to be independent enough in deciding cases that involve the state on the one side and private parties on the other. 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.

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191 General Data Protection Regulation, above n 188, art 22(1).
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.
195 Chen and Cheung, above n 147, at 357.
198 Chen and Cheung, above n 147, at 373.
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. 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.

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’. 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. Sesame Credit may be novel if it makes use of video game playing as a signal, though American credit rating pioneers were well ahead of Alibaba in making careful note of alcohol consumption and gambling habits. The ways in which systems in China – or indeed experiments like Lenddo, using carefully chosen proxies – 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) 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).
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. 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 itself – just as developments in information processing and management, and theoretical consideration of systems theory approaches, informed Western approaches to governance during the post-1945 period and are at the heart of debate on the degree to which the Internet itself can be governed. The arguments that performance management schemes have become normalised and so now require the analysis of mission, commensuration, and vision, and that classifications embedded in information infrastructures require political and ethical study, 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. As explained in the discussion of novel forms of credit scoring, 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, 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, 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.

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,

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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.
215 See 2.4, above.
217 See the discussion in 3.5, above.
and the use of devices and sensors to add real-time data, 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 media 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). On the other hand, both the approach to development in China (which allows for municipal variation) and the fashion for city- or sub-city based experimentation with data collection and analysis in Western ‘smart city’ initiatives pose more difficult questions. Should the spread of reputation-based systems be seen as a type of policy diffusion? 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’?

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. 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,

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219 Ohlberg et al, above n 110, at 4.


221 Backer, above n 120, at 8.


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.\textsuperscript{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.\textsuperscript{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.\textsuperscript{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.\textsuperscript{230} Similarly, there is a lively debate on the regulation of emerging applications of artificial intelligence,\textsuperscript{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,\textsuperscript{232} which without attention may make ‘decisions … inscrutable and thereby incontestable’.\textsuperscript{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.\textsuperscript{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 China\textsuperscript{235} or for all users, especially of social media.\textsuperscript{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

\begin{itemize}
\item \textsuperscript{227} Ranchordás, above n 64, at 129; Dai, above n 90, at 7-8.
\item \textsuperscript{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).
\item \textsuperscript{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).
\item \textsuperscript{232} House of Commons Science and Technology Committee, Algorithms in decision-making (HC 351, 2017-19).
\item \textsuperscript{233} Hildebrandt, above n 181, at 28.
\item \textsuperscript{235} See 3.2 and 3.3, above, as well as 3.6 for cross-cultural differences in shame response.
\item \textsuperscript{236} E.g. Jon Ronson, So You’ve Been Publicly Shamed (Picador 2016).
\end{itemize}
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’. 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’.

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,

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

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.