

Thanks to a generous donation, the CBR has established the Gavin C Reid Prize for the Best Paper by a CBR Early Career Researcher. The prize is named in honour of Professor Gavin C Reid, a long-time supporter of the Centre and currently one of its Senior Research Associates. The £400 cash prize, to be awarded annually, is open to early career research staff and research associates of the Centre for Business Research.

The 2025 prize is jointly awarded to Linda Shuku, for her paper (co-authored with Simon Deakin), 'Exploring computational approaches to law: the evolution of judicial language in the Anglo-Welsh poor law, 1691-1834' *Journal of Law and Society*, volume 52, pp.3-33 (2025), and Zhenbin Zuo, for his paper, 'Automated law enforcement: an assessment of China's Social Credit Systems (SCS) using interview evidence from Shanghai', *Cross Disciplinary Research in Computational Law (CRCL)*, volume 2, issue 1 (2024).

Gavin C Reid, Honorary Professor in Economics & Finance, University of St Andrews; Senior Research Associate and Chair, Advisory Board, Centre for Business Research, University of Cambridge

Gavin writes:

Linda Shuku's paper, which is one of 2 winners of the Gavin C Reid prize in 2025, uses modern computational techniques to gauge how specific forms of legal language have, over time, affected subsequent economic development. For the jurisdiction of England and Wales, over the period of 1690-1830, this prize paper examines the relationship of the evolution of judicial language used in their Poor Laws to that of the economy itself (eg in terms of the business cycle and industrial innovation).



In her paper Linda reasons that the poor laws of the late 17th to early 19th centuries could be characterised as reflecting the evolution of a proto-welfare state. This was an initiative in which England and Wales stood alone, as the first in Europe, bringing about considerable economic advantages, and ameliorating to an extent the conditions of poor families faced by the remorseless march to an industrial state.

In terms of quantitative and computational techniques, the tools used in Linda's paper are at the leading edge of what is now possible. Specifically, Linda uses natural language processing (NLP) and machine learning (ML) to analyse the structure of legal texts of the Poor Laws, to create a metric of its passage. This leads to a huge step in the analysis of our Poor Laws understanding, which is both a personal and professional prize for her.

In research of this kind, the task of developing the database is often an arduous task, and this is true of Linda's work. The drudgery of cleaning, deleting, amending, correcting, annotating, and labelling etc is a heavy burden, but part and parcel of solid quantitative work. It was noted that the

dataset consisted of *reported* cases, but not all cases were reported, so there is, in principle, a wider population of *decided* cases, which might be a task for further work.

Linda poses a research question: is there evidence that changing judicial language was systematically reflected in the economy? In historical terms it asks if increases in poor relief expenditures led to the courts adopting a more restrictive approach to the meaning of labour hiring. Critical to the quantitative work was the use of NLP tools to enable the 'sentiment' of legal text to be gauged by a metric suitable for econometric work.

Two econometric models are presented, OLS and probit analysis. In the OLS, the dependent variable is 'lingual evolution,' for which an increase denotes more liberal language, and a decrease denotes more restrictive language. Here the grain price is positive and highly significant. In the probit, the dependent variable is unity when restrictive cases exceed liberal cases, otherwise zero. The cost-of-living variable is positive and significant, and again the grain price variable is positive and now highly statistically significant.

The quantitative conclusions were as follows. First, changed judicial language is reflected in changed economic circumstances. Second, increases in spend on poor relief did lead to the courts being more restrictive in the definition of yearly hiring.

As a general conclusion this research work indicates that language evolution (and especially judicial language) is mirrored by wider processes of economic and social change, which, in tandem, are part of the process of industrialisation. It is hoped that future work by Linda and co-authors will expand the research horizon of the current work, to investigate coevolutionary dynamics between the law and the economy.

The second paper to be awarded the Gavin C Reid Prize in 2025, by Zhenbin Zuo, is interesting and thought-provoking. It was produced under the research supervision of Professor Simon Deakin, Director of the Centre for Business Research (CBR), Cambridge University. It explores the functioning and efficacy of Social Credit Systems (SCS) in the People's Republic of China (here referred to as simply 'China'). This institutional interest in business research on China has been a persistent feature within the CBR, for decades. It has been more recently fostered further by Simon Deakin himself. This engagement included a large fieldwork project on China in 2016: on law, trust and institutional change, led by him and 3 co-researchers.

Zhenbin's current work is on China's Social Credit System, SCS. This system has its roots in the 1960s, when the Chinese government decided to establish a nationwide credit management system, influenced by prior research and applications in the USA, including early work by CH Douglas in the 1920s. In practice, the current system in China (viz the SCS) uses blacklists and joint sanctions for enforcement. Within the SCS framework, blacklists are applied to discredited firms and individuals, and similar sanctions are extended to judgment defaulters.

The conceptual part of Zhenbin's research has been inspired, and perhaps energised, by the challenge posed by Hal Varian (2014), of Google and Berkely CA fame, to economists, on devising self-executing contracts. Such contracts allow transactions and agreements to be carried out without the intervention of conventional legal inputs, like consulting lawyers and seeking judgments in court. Varian's position was strongly challenged by Zuboff (2018) in his *Surveillance Capitalism*. In a following supportive paper, Zuo (2020), on governance by algorithm, Zhenbin argued further for an institutional theory of computational law. This would see governance progressing by what is called 'scaling and layering' which are technical terms referring to (a) uses of the language by performance and resource, and (b) aids to generating human-like text. Zhenbin suggests that automated enforcement can only achieve necessary scale effects if human judgment is combined with automation.

The empirical parts of Zhenbin's current research, represented in this prize paper, rely on 2 very different sources: public legal archives; and evidence from semi-structured interviews conducted in Shanghai. The former consists of prolix forms of evidence, which are often hard to interpret, and the latter requires subtle fieldwork 'knowhow', which rewards one with 'thick evidence' on how systems work in practice, if skilfully deployed. The reporting of both forms of evidence is handled with skill in Zhenbin's paper.

Given the above, I conclude this prize paper maps out well the potential for automated law enforcement, and the positive impact it could have. However, this form of automated law is a mixed bag of merits and demerits, so it is important to be wary of what kind of genie might leave the magic lantern of modern computer technology. In the context of using automated enforcement in a large-scale fashion, Zhenbin's reassuring mantra is that its use should always be moderated by human agency.

Linda Shuku, Research Associate, Centre for Business Research, University of Cambridge

Linda writes:

I am very grateful to have received the Gavin C Reid prize this year. I am especially thankful to the selection committee for their favourable judgment of this line of research I am engaged in. This paper is a joint effort with Simon Deakin, with whom I have been fortunate to collaborate on this project and other ongoing work in the broader field of law and economics. Simon's background in law and my background in economics have enabled us to pursue interdisciplinary empirical research using novel datasets and emerging quantitative methods to uncover insights on topics in a more holistic way. This paper is a testament to our ongoing efforts in this regard, highlighting interesting and useful findings on the interaction between the judiciary and economic change within the historical context of the early stages of the social welfare system in Britain.



The paper's focus is on the poor law system in 18th-century England and Wales, which functioned as a proto-welfare state requiring parishes to raise a local tax (the poor rate) to fund poor relief for the unemployed, the long-term ill, and the elderly. Furthermore, the focus extends to the eligibility of servants for relief under the condition of 'yearly hiring', which allowed a settlement in the specific parish. During this period, the Court of King's Bench decided hundreds of cases of disputes between parishes arguing over the liability for poor relief. In the broader economic context, this is a period of significant economic change in Britain, as the country transitions from a mainly agricultural economy to a rapidly industrialised state. Prior research indicates that recessive economic cycles put the poor relief system under pressure, which may have exacerbated efforts to scale it back, leading to parishes vigorously fighting against liability for relief. In this context, by examining how courts decided on workers' rights to relief, we contributed to the debate about the relationship between legal change and industrialisation.

As this paper is primarily an empirical study, we relied heavily on various methodological approaches to textual data. We analysed the court cases' text rigorously in multiple ways, both manually and using natural language processing models, to uncover patterns in language evolution over time. Initially, through manual binary classification, we identified periods during which courts decided more liberally or more restrictively on the right of workers to poor relief, based on case components such as case facts and judgments. We then employed an automated approach, using large language models, to gain insights into the smoother trends in legal language evolution. Finally, through econometric analysis, we formally examined the relationship between the evolution of legal language and other standard economic indicators, such as economic growth, wages, the cost of living, and grain prices. Our findings suggest that language evolution is systematic and structural, linked to broader processes of economic and social change associated with industrialisation.

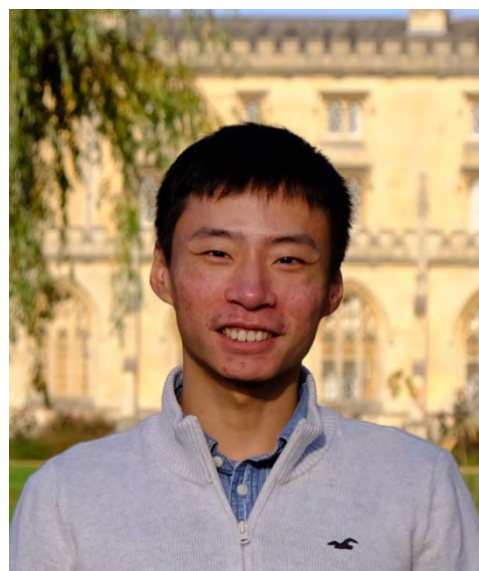
As I continue my research in a subsequent project within a similar field of interest, this award has inspired me to work even more enthusiastically to uncover findings that will complete the overall analysis of the historical relationship between law and economics concerning workers' right to relief and later compensation. Ultimately, this research adds to the collective effort to understand how workers were treated in 17th and early 18th century England and Wales, and later, how their voices influenced the fight for fair compensation in 20th century Britain. This helps us better to understand the foundations of the UK welfare state following World War II. I have also been fortunate to receive support for interdisciplinary research that advances methodological boundaries and reveals fascinating insights in a systematic manner. It is a pleasure to hear from peers and colleagues who say our work has inspired them to explore their research from different perspectives and with new methods.

Zhenbin Zuo, Lecturer in Law, Essex Law School, University of Essex; Research Associate, Centre for Business Research, University of Cambridge

Zhenbin writes:

I am deeply honoured to have been awarded the Gavin C. Reid Prize for 2025 for my paper '[Automated Law Enforcement: an Assessment of China's Social Credit System \(SCS\) Using Interview Evidence from Shanghai](#)', published in the *Journal of Cross-disciplinary Research in Computational Law* (CRCL). I am profoundly grateful for Professor Gavin C Reid's generosity and kindness, and for Professor Simon Deakin's guidance and support. I am also indebted to many colleagues at the Centre for Business Research (CBR), Essex Law School, and Peking Law School, who provided insightful feedback and advice, and unwavering support for my fieldwork.

In recent years, the CBR has extensively explored the theme of 'law and AI'. This has inspired my paper, both theoretically (eg institutionally) and methodologically (eg empirically). My paper originates in discussions with CBR colleagues, and reflects my curiosity about how the large-scale, and well-organised, use of AI and/or automation can fundamentally transform modern justice systems. China has been an early adopter of automation, in courts and government, starting from the 2010s, of which the



Social Credit System (SCS) is a prominent example. However, the existing literature - both in English and Chinese - often characterises the SCS by oversimplifications, or even by grand theories which lack in-depth empirical research.

My paper incorporates interview evidence from the field and argues for a more complex narrative of the SCS, which emerges from using this city-level case study. I conducted face-to-face interviews with judges, frontline officials, and corporate staff in Shanghai in 2021. I used this evidence to unpack how the 'blacklists' in China's Social Credit System work in practice. This evidence supports a new model, which I propose in this paper, to explain the benefits and risks of AI and automation in modern legal systems. This new model, which has what I call 'scaling and layering' attributes, draws on the rich literature of institutional law and economics. This literature includes a series of CBR publications on governance and the hybridisation of formal and informal institutions (notably those by Professor Simon Deakin, Professor Katharina Pistor, and Dr Meng Gaofeng).

First, I use doctrinal and archival evidence to show how a 2013 Judicial Interpretation by China's highest court, instigated a nationwide digital infrastructure that automatically restricts debtors from, for example, booking flights and high-speed trains. I created a flow chart to map every stage of this techno-legal infrastructure, from the local court's verdict to the central court's blacklist labels, to the automatic data transfer/sharing (which I term 'push-notifications'), and finally to the on-the-ground sanctions via facial recognition cameras (eg at boarding gates). I used this flow chart to illustrate how computer code, including AI algorithms, embeds and materialises legal concepts and enforces rules in the physical world, step-by-step. It also shows how code and AI automate and/or influence the decisions of human judges and enforcers, at every stage.

Then, drawing on my Shanghai interviews, I observed that automation had achieved various degrees of efficiency and 'scaling' effects, reducing court backlogs in nationwide enforcement, and promoting standardisation. However, 3 main adverse consequences were also revealed, which I describe as the negative 'layering' of code upon law. First, Shanghai judges and officials have expressed concerns that the rigidity of code and AI could restrain local flexibility. Thus, some local courts have devised new methods to 'underwrite' selected debtors, allowing them to continue trading while repaying their debts. Second, as automation tools have become more accessible, concerns have arisen regarding the potential disempowerment of judges, possibly leading to an influx of debtors being labelled on the blacklist. Third, and finally, with an increasing number of blacklisted debtors, senior officials have worried that this process could 'normalise' indebtedness, thus reducing the incentives for active debt repayment. In turn, these issues may lead to 'institutional overload', wherein the legitimacy of both code and law decays, as public perception of these institutions shifts.

Ultimately, my paper argues that social norms, written law, and code/AI functions may be regarded as 'layers' of governance in society. Thus, not to be neglected are the layer risks of path-dependence, and the entrenchment (or 'freezing') of outdated rules which may no longer align with reality. My view emphasises that the individuals who maintain and audit the blacklists, and the processes by which label entries are cleared, are an essential part of the automated enforcement systems. Yet they still require human agency. My paper holds that all the above may contribute to the construction of a more accurate and useful model for analysing the complementarity between law and code/AI. My paper suggests that rapidly instigated appeal mechanisms, and local

flexibility, are necessary to preventing the application of rigid algorithms which may inadvertently penalise businesses, or even thwart the intentions of the courts themselves. Thus, the paper's empirical and theoretical contributions can be useful not only to China, but also to other jurisdictions which are contemplating the introduction of AI processes into the justice system.