The latest book by the eminent French scholar Alain Supiot is a highly readable if intellectually challenging effort to pin down the effects on law of the move to 'governance through numbers'. It also seeks to describe and warn of the inadequacies of the 'legal model of allegiance' that he argues accompanies or follows this move. Ably translated by Saskia Brown from the French La gouvernance par les nombres, it builds on Supiot's previous work, especially Homo Juridicus, and draws on and contributes to a wide variety of literatures. With much of its argument focused on what has happened to employment relations, the book has been praised as an important contribution to labour law, (something to be expected given his eminence in this field). It has also been hailed as a 'tour de force' by constitutional lawyers (and appears in a series dedicated to comparative public law). As its title suggests, however, those interested in legal and social theory will also want to consider its relevance for understanding the changing role of law at a time of increasing resort to forms of coordination and regulation that rely on quantification and artificial intelligence.

The book offers the following helpful guide to its argument on its cover page: 'The West's cherished dream of social harmony by numbers is today disrupting all our familiar legal frameworks - the state, democracy and law itself. Its scientific vision shaped both Taylorism and Soviet Planning, and today, with 'globalisation', it is flourishing in the form of governance by numbers. Shunning the goal of governing by just laws, and empowered by the information and communication

1Dickson Poon Law School, King's College London
2 Supiot is a fellow of the Collège de France elected to a chair called «État social et mondialisation : analyse juridique des solidarités» he is also a corresponding member of the British Academy.
4 See the review by P. Goodrich, 'Law's labour's lost' 72 Modern Law Review (2009), pp. 296-312.
technologies, governance champions a new normative ideal of attaining measurable objectives. Programmes supplant legislation, and governance displaces government. However, management by objectives revives forms of law typical of economic vassalage. When a person is no longer protected by a law applying equally to all, the only solution is to pledge allegiance to someone stronger than oneself. Rule by law had already secured the principle of impersonal power, but in taking this principle to extremes, governance by numbers has paradoxically spawned a world ruled by ties of allegiance.  

But this summary does not fully capture the book's variety of rich and complex discussions. The early chapters, for example, report on a wide ranging investigation of how our modern idea of law emerged in the West and the forms it has taken in different cultures. He goes on to claim that the introduction of Taylorism as a scientific way of organizing work in the factory reflects instead an attempt to produce social order though 'harmony through numbers'. The book's key chapters then discuss how law has been 'dethroned' by what he calls the 'normative uses of quantification', and the way this has infiltrated the tasks of accounting managing, judging and legislating. Supiot illustrates the false objectivity provided by numbers in the way accounting practices in reality privilege the investors' viewpoint, discusses the implications of the invention of the category of the 'normal man' and management by objectives, and points to the fallacy of trying to reduce judging to calculations of probability. He tells us that the industrial 'social imaginary' has been replaced by the cybernetic one, in which rule is no longer conceived as a heteronomous obligation but is instead homeostatic and auto-referential, so that 'people are no longer expected to act freely within the limits laid down by law, but to react in real time to the multiple signals they receive in order to meet those targets they are assigned'. For Supiot, government by numbers undermine the rule of law, which provides the bridge we need between the world of sense and the world of the senses; it is the last bastion of defence against the dehumanizing inroads of science and technology.

In the last section of his book Supiot puts forward the most controversial part of his thesis, interpreting recent decisions of the French, EU and international courts so as to show that we are moving to a new legal model of allegiance. For him, world society is undergoing a form of refeudalisation characterised by 'networks of allegiance...' where 'each person depends on the protection of those stronger than he and on the dedication of those weaker.' Thus employers are

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7 Cover blurb of Alain Supiot Governance by Numbers.
8 id. p.103 ff.
9 id. p.10.
10 id. p.285.
made responsible for the bad health effects of their workplace routines on workers, multinationals are expected to police the harms caused by sub-contractors in their supply chains, the EU imposes ever stronger requirements on its member nation-states whilst smaller states are pressed into coalitions of the willing by imperial nation-states such as the USA.  

It is tricky, however, to work out the relationship between 'government by numbers' and the new model of allegiance. On one reading, government by numbers itself entails the rise of this model of allegiance, which have accompanied the implanting of governance by numbers. Adams parses this as 'the creation of a different type of social bond which generates legal orders more similar to a medieval type. Constitutional fragments are generated and dispersed across a society that looks more and more like a series of “fiefdoms” organized in a series of distinctive networks of relations of allegiance...The concept of ‘refeudalisation’ is a particularly apt characterisation of neoliberalism’s attempt to decentralise and privatisate the exercise of power. The employment contract 'no longer effects an exchange, but merely ‘organises the exercise of power’. Herein lies the comparison with feudal vassalage: the worker today offers for ‘exchange’ not just his labour power, but all the faculties of his person. These relationships subject individuals to ‘objective’ evaluation criteria, with a view to promoting their obedience without the need for direct control.’  

On the other hand, on another possible reading, the growth of a new form of allegiance is a consequence of the unsustainability of the regime of governance by numbers. It is significant that he entitles part two of his book 'From governance by numbers to ties of allegiance'. On this view Supiot would be charting two moves, that from the juridical to government by numbers, and from that to a new version of patron-vassal relationships. This last comes about as an unintended - even paradoxical reaction- either because the numbers approach breaks down or is resisted. The new legal model of allegiance thus proves that the attempt to find an impersonal model of governing people that does not base itself on the heteronomous demands of law only leads (back) to greater dependence.

On either reading a number of issues remain open. How exactly is governance by numbers related to personal allegiance? Is the point that management by objectives relies on third parties but not the

11 Supiot, op.cit. p.222.ff 
12 Adams op.cit. p.167. 
13 Supiot p.286. 
14 A term Supiot uses.
right ones? Is the relationship between numbers and allegiance the same everywhere? For better or worse, quantification has been introduced in the Italian University system as part of an attempt to measure productivity and thus weaken clientelist allegiance. How do developments vary by different legal contexts? Consider for example the effects of the growing uses of quantification in the field of criminal justice. Adams tells us that even some developments in labour relations do not correspond that well to Supiot's ideas about interdependence. As she notes, 'the job security enjoyed by the vassal seems a far cry from the ‘flexibility’ and insecurity inherent in the ‘zero hours contract’, for example, where it seems the worker has no choice but to subjugate himself to the needs of the employer not in return for security and autonomy, but in return for complete dependence, insecurity.' How much have Supiot's points to do with the wider effects of globalization. Certainly neo-liberalism has magnified the role of the market at the expense of the nation-state; and many of his examples have mainly to do with the limits of state law once it has to grapple with transnational challenges.

Even if we put aside his claims about a new legal model of allegiance, however, there is still much to learn from what Supiot has to say about the difference between government and governance. He offers for instance a useful table comparing the 'political vocabulary' of these two forms of rule. We have moved, he says, from people to civil society; sovereignty to subsidiarity; territory to space; law to programme; freedom to flexibility; morals to ethics; justice to efficiency; judgment to evaluation; rule versus objective; rulings to regulation; representation to transparency; worker to human capital; qualification to employability; trade unions to social partners; and collective bargaining to social dialogue. As he sums it immediately after setting out his table, 'Where

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15 As Supiot writes (op.cit. p.285), 'when the state no longer assumes its role as guardian of peoples identity, and of their physical and economic security, then people will inevitably pledge allegiance to any group claiming to provide such guarantees- be it clans, religious factions, ethnic identities or mafia networks'.


18 Adams op.cit. p.168.

19 Supiot op.cit. p. 29-30.
government relies on subordinating individuals, governance, in line with its cybernetic vision, relies on programming them.' 20

These concerns about the transformation of law are shared by many other Continental European thinkers (who have reservations about aspects of the common law and especially USA based 'law and economics'). Garapon and Lassègue, for example, offer an account that shows us some of the further analytical possibilities of Supiot's insights (though they also emphasise, even more than Supiot, the importance of the move from text and words to numbers and computation, as part of what they refer to as the 'graphic revolution')21. Their table entitled 'territorial legal order versus global post legal systems', which is intended to summarise their argument, offers a series of contrasts in summarising their argument. They counterpose territorialisation to deterritorialisation; political organisations and a mediated world based on territorial exclusivity, as opposed to legal pluralism; coordination versus market actor regulation; legally stabilized social relationships versus innovation, hierarchy versus the horizontal relationships relying on many sources of law as with predictive justice; obeying the law versus negotiation between individuals; ritual versus technique; operations in chronological order versus no such order; the physical world versus internet; procedure versus design; public level versus third parties, setting up an ideal versus effectiveness; exercising a right versus defending an interest; access to justice versus incentives to come to an agreement; public service versus platform for paying private enterprises; public authority imposed on all - versus recognition of specificity of competence case by case; predictable law versus situational and flexible rule; decisions versus solutions; long and complex procedures that tend to be used rarely versus easy accessible affordable and immediate mediation; opacity of ritual versus complexity of user techniques; disinterested third party versus interested third party; power as capacity to reunite forces in a territory versus capacity to mobilize the multitude; intelligibility for an overall view versus intelligibility for the actor; representation in symbols versus non figurative systems; primacy of public versus private law; cultural concepts versus apocryphal concepts reinterpreted by economic or technical approaches; government versus governance; visible power couched in juridical terms versus power hidden without juridical form; independence in an territory versus independence in (almost) all territories; the real versus the virtual; local power versus non

20 id. p. 30.
localizable power; rooted versus rootless law; and concrete geographical order versus abstract systems. '22

Supiot’s book can be taken as another contribution to the growing literature concerned with the problems posed by the normative uses of quantification. But he does not offer a systematic account of what these problems are. Should we be more worried by reliance on quantitative as opposed to qualitative information in policy interventions, the over-reliance on measurement, metrics and targets in motivating rule compliance, the way comparisons impose categories as they commensurate standards between dissimilar settings, the use of numbers rather than words and language in communicating ideals, or the rise of Big Data and the ubiquitous employment of algorithms to (help) make decisions- or all of the above? What is also missing in this book (as in much of the literature) is an empirical analysis of the way different social actors employ such techniques in different processes (with potentially contradictory effects)23. Supiot spends little time on telling us who rules through quantification, nor does he say much about the possible differences between its use by governments in the global North and South, multinational and national businesses and companies, Inter-governmental organisations, non-governmental organisations and foundations, experts and epistemic communities; even some newspapers who have made their fortune by creating ranking schemes.24

Is the threat represented by these modalities of governance intrinsic to their operations or more about the way they displace the domain of law? One important way forward would be to focus on similarities and differences between what can be described as more and less counter-factual uses of numbers in setting targets and manipulating people.25 As examples of the first counter factual use

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22 id. at p.201-203. (The free translation is mine). In all these contrasts it is implied that the first pole of the paired terms is the better one.

23 Insofar as Supiot argues that the rise of a new model of interpersonal allegiance is a 'legal' one it would also be important to see how it relies on these other ways of producing conformity.

24 But he does seem to approve the work of the International Labour Organisation, for whom he has acted as a consultant, even if they also sometimes use quantification for normative purposes.

25 See D. Nelken 'The Legitimacy of Global Social Indicators: Reconfiguring Authority, Accountability and Accuracy', 59 Les Cahiers de Droit (2018) 35-84. Global indicators and algorithms can be placed on a continuum of forms of normative regulation that runs from ethics at one extreme to designing out rule-breaking at the other (see Figure 1 p.44).
we could take (global) social indicators\textsuperscript{26} - an aspect of audit culture\textsuperscript{27}, and, to illustrate the second, regulation by algorithms\textsuperscript{28} - a feature of what has been called algocracy\textsuperscript{29}. There are, admittedly, many similarities, in the problems that have been attributed to indicators and algorithms. In their efforts to predicting risks and justify decisions both can be partial and misleading, can mistake the map for the territory- and too easily assume that only what can be measured is of value. Both can be self- fulfilling, creating what they claim to be measuring. And both can hide rather than eliminate discretion and bias.

On the other hand, there are also important contrasts ways in the way each of these seek to shape conduct. The global social indicators\textsuperscript{30}, that rank matters such as levels of corruption or standards of corporate responsibility, have to do this in a way that they can be understood both by those whose behaviour is being ranked and by those relying on such information in making their decisions. Publicity is also essential to the role they often play in naming and shaming. As with law,

\begin{itemize}
\item A global social indicator has been defined as 'a named collection of rank-ordered data that purports to represent the past or projected performance of different units. The data are generated through a process that simplifies raw data about a complex social phenomenon. The data, in this simplified and processed form, are capable of being used to compare particular units of analysis (such as countries or institutions or corporations), synchronically or over time, and to evaluate their performance by reference to one or more standards’ K. Davis, B. Kingsbury and S. Merry
\item ‘Algorithmic regulation 'refers to decision making systems that regulate a domain of activity in order to manage risk or alter behavior through continual computational generation of knowledge by systematically collecting data (in real time on a continuous basis) emitted directly from numerous dynamic components pertaining to the regulated environment in order to identify and, if necessary, automatically refine (or prompt refinement of) the system's operations to attain a pre-specified goal.’ K. Yeung 'Algorithmic Regulation: A Critical Interrogation', 12 Regulation and Governance (2018) pp. 505-523 at p.507.
\item see e.g. https://algocracy.wordpress.com/1-logical-space-of-algocracy, accessed 2/6/2019.
\end{itemize}
the criteria they use can be subjected to contestation and even violation of these standards can produce useful information. With algorithms,\textsuperscript{31} on the other hand, it is counter-productive to allow for violation, and algorithmic regulation typically requires those whose choices are being shaped to be unaware of what is influencing them. Demands for more openness may also be blocked by claims of property rights. Moreover, especially when machine learning takes over, how they work may even not be understood by those using them; they produce the ‘black box society’\textsuperscript{32}. Whilst indicators may often fail in their goals (Supiot is not the first to point to the many perverse effects of governance by numbers), algorithms may be all too successful. Perhaps Supiot does not need to address these differences because his focus is on targets for workers; these indicators of performance may be comparable in effect to algorithms inasmuch as they are so often given little opportunity to shape them. But in other cases these differences will matter.

Only by learning more about the workings of these modes of governance (both their successes and failures) will we be able to decide whether the answer lies in make them more acceptable, or whether, on the contrary, we should try to make them less credible. This can be seen if we consider the current proposals that are being suggested as ways to stop them encroaching on the rule of law. We could require indicators or algorithms to be formulated and applied in ways that conform better to the principles of legality. We could improve procedures, and build in more opportunities for participation and contestation by those being evaluated. We could also try to promote reflection by the communities affected, though some means of closure would also be required to prevent discussion becoming interminable. Injecting legality in this way would have the goal of increasing the legitimacy of these forms of ordering. Alternatively, we could try to use law as a means to regulate the extent to which these forms of social ordering can be used - using data protection and other requirements to stunt their growth. \textsuperscript{33} This approach would underline the lack of legitimacy of these forms of ordering so as to circumscribe their ambit.

\textsuperscript{31} see e.g. M. Hildebrandt, \textit{Smart Technologies and the End(s) of Law} (2015); C. O’ Neil \textit{Weapons of Maths Destruction} (2016); E. Finn ed. \textit{What do algorithms want?} (2017); E. Bayamlioglu, I. Baraliuc, L. Janssens and M. Hildebrandt \textit{Being profiled} (2018); P. de Filippi and A. Wright \textit{Blockchain and the law} (2019).

\textsuperscript{32} F. Pasquale \textit{The Black Box Society} (2015).

\textsuperscript{33} see e.g. M. Hildebrandt op. cit. note 30; R. Brownsword ‘From Erewhon to AlphaGo: for the sake of human dignity, should we destroy the machines? 9 \textit{Law, innovation and technology} (2017). R. Brownsword, ‘Law Disrupted, Law Re-Imagined, Law re-invented’, \textit{Technology and Regulation} pp.10-30.
The problem with many proposed solutions is that these new methods of governance are often adopted precisely because of the advantages they are seen to offer as compared to relying just on law for regulation and prediction. The information generated by indicators can contribute to more evidence-based decision making. Algorithmic regulation can offer a more speedy and effective route to bringing about desired outcomes. The very advantages for which they are employed can be undone by making them more law-like. The growth of these forms of shaping behaviour itself is changing older ways of understanding the meaning of choice and consent. Supiot tells us repeatedly in his book that being governed by targets can drive people mad. But in practice not only may managers be enticed by the 'seductions of quantification', even those being managed can be trapped by their own own desires.

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34 S. Merry *The seductions of quantification* (2016).