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UNIVERSITY OF AMSTERDAM

THE RULE OF LAW IN THE  
TECHNOLOGICAL AGE  
CHALLENGES AND OPPORTUNITIES FOR THE EU  
COLLECTED PAPERS

Maria Weimer

Kati Cseres

Christina Eckes (eds.)

Amsterdam Law School Legal Studies Research Paper No. 2017-35

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# **The Rule of Law in the Technological Age**

Challenges and opportunities for the EU

**Collected Papers  
ACELG 6<sup>th</sup> Annual Conference  
4 November 2016**

Maria Weimer, Kati Cseres & Christina Eckes (eds.)

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# The Rule of Law in the Technological Age

## Challenges and opportunities for the EU

### Introduction

**Maria Weimer, Kati Cseres and Christina Eckes**

Technological innovations are crucial drivers of economic, social, and environmental progress. Law and regulation are expected to enable innovation while protecting society from unintended consequences, such as risks to public health and the environment, privacy, data protection, and other fundamental rights and interests. However, law is often considered either as an obstacle to innovations or as unable to protect society from their risks. Moreover, the very notion of the Rule of Law as a principle governing legitimate exercise of power in democratic societies is undergoing change, and, in some extreme cases, might even be challenged where technological fixes are replacing traditional legal rules.

This collection of policy papers is based on the sixth annual conference hosted by the *Amsterdam Centre for European Law and Governance* at the University of Amsterdam on 4 November 2016. Against the backdrop of revolutionary technological developments in the digital world as well as the impacts of technological innovations on health, safety and the environment, the conference has explored the relationship between law and technology with a particular focus on challenges and opportunities for EU law and regulation. As demonstrated by this collection of papers, new technologies (e.g. Big Data analytics, digital platforms, bio- and nanotechnologies) have the potential to transform the very nature of law as an institution including the operation of legal rules and of key concepts, such as the rule of law, legal certainty, and rights protection. Moreover, the scientific complexity of technology regulation and the increasing reliance on both non-legal expertise and non-state actors affect the nature of law making and enforcement. A key question running through all the contributions concerns the capacity of law to normatively steer technological development, and to ensure the legitimate use of technological power.

In his contribution, Roger Brownsword provides for a birds-eye perspective on the relationship between the principle of the Rule of Law, rules of law and technological management. He draws our attention to the

dual function of technology in a regulatory setting: technology as a regulatory target and technology as a regulatory tool. The speed and complexity of regulating technological risks as targets present, above all, the challenge of devising adequate (i.e. socially acceptable and effective) regulatory frameworks. However, for Brownsword, the more radical challenge to the Rule of Law lies in the emergence of technological management as a regulatory tool to steer human behaviour. His contribution identifies key questions for legal theorizing in the technological age, and provides first insights as to the continuing relevance of the Rule of Law for securing a legitimate exercise of power in our societies.

In fact, our ideas about whose power should be effectively controlled by whom and with what instruments are also undergoing change in the technological age. This is well illustrated by the respective contributions by Orla Lynskey on the regulation of 'platform power' on the one hand; and by Ariel Ezrachi and Maurice Stucke on anti-competitive practices in the virtual economy on the other hand.

Lynskey shows that digital platforms, such as YouTube, Twitter, Amazon, Facebook etc, not only require regulation, but also are regulating us. This form of private ordering by code has, according to her, 'implications for economic, social, cultural and political dimensions of our lives.' Lynskey's contribution reveals the different types of impact, which platform power has on fundamental rights, such as the freedom of expression, privacy and data protection. The search for adequate regulatory options to ensure digital rights protection vis-à-vis digital platforms is, however, still open. While competition law focuses too narrowly on economic impacts, other forms of public regulatory intervention require a fundamental re-thinking of the function and logic of fundamental rights when endangered by private, rather than state power. Or – and this refers us back to the role of technological management as discussed by Brownsword – we might need to resort to non-legal modes of regulation, such as technological fixes, to protect fundamental rights.

Ezrachi and Stucke's contribution also shows the limitations of current competition law approaches in the enforcement of fair virtual competition. They show that with the changing dynamics of online competition, some practices, such as algorithm-driven tacit collusion and behavioural discrimination in the online market, may remain 'beyond the law's reach'; or even be considered legal despite their adverse effects on producers, consumers and society. They warn that 'current markets are far from perfect competition. The invisible hand that we rely upon can be pushed aside by the "digitized hand". (...) The resulting environment operates with rules different from the ones we assume in the theoretical economic

models, and can yield new forms of anticompetitive behaviour that reduce our welfare.'

Returning to the question of how to design adequate regulation for new technologies, the following contributions explore the challenges to the Rule of Law created by scientific uncertainty and the need to promote socially beneficial technological innovations. In a similar vein as Brownsword, Indra Spieker genannt Döhmann shows in her contribution that technology and law are two different systems with different rationalities and languages, which makes frictions between them inevitable. At the same time, to regulate technology effectively, the main task of the legal system becomes the gathering of complex techno-scientific information – a process that cognitively opens the legal system to the technological system. This creates enormous challenges to both legislation and law enforcement given that the assessment of technological risk is more often than not surrounded by scientific uncertainty.

The precautionary principle has been originally conceived to address scientific uncertainty. However, its application in EU law and policy is often hampered by controversy. One of the reasons is that the principle often fails to translate scientific uncertainty into legal certainty; law relies on facts and evidence and therefore tends to be resistant to acknowledging scientific uncertainty. Geert van Calster, Kathleen Garnett and Leonie Reins, therefore, suggest overcoming this current blockage in the application of the precautionary principle by introducing a 'public needs analysis' for technological innovations. Such an analysis would require regulators to weed out products and technologies, which offer little or no benefit to society. Van Calster et al. show that embryonic forms of a needs/or public benefit assessment already exist in Europe. At the same time, the authors acknowledge that, at first sight, a needs-based assessment would go against our engrained belief that where adverse effects of a technology on human health or the environment cannot be proven, a product should be allowed on the market. They also identify Rule of Law challenges of introducing a needs assessment, in particular with regard to legal certainty and (especially economic) fundamental rights. Yet, given the uncertainty surrounding technological risk assessment and the irreversibility of some of the potential long term impacts, both legal scholars and policy makers would do well in devising mechanisms to ensure that we take technological risks only for those innovations that benefit society as a whole.

These tensions between markets and society lie at the heart of technology regulation. Tamara Hervey's contribution explores the role of EU internal market law in framing the way we understand and regulate technology in the Union. Given that much of EU law on new technologies falls within the EU competence to regulate the internal market, does market rationality dominate EU regulation in this field at the expense of other values, such as



fundamental rights or ethical concerns? Hervey concludes that EU law cannot be considered as constitutionally fixed in this respect. Rather, it envisages a market that is respectful of fundamental rights and solidarity-based welfare settlements, as well as precautionary. Only by recognising the open nature of EU law, can we hold the EU institutions to account on the basis of the above mentioned constitutional commitments of an embedded market when they make, apply, or interpret EU law, and when they regulate technology.

The contributions collected in this volume offer an array of insights about both the challenges and opportunities of technology for the legal system, the principle of the Rule of Law as well as for the welfare of our societies more generally. Different questions are raised depending on whether we look at technology as regulatory target or regulatory tool; and depending on the particular type of technology as well as its risks and benefits. Overall, the contributions show that the relationship between law and technology is more complex than one-directional accounts are able to tell. By framing technology regulation in a certain way law (including EU law) is able to shape technological innovations thereby encouraging or discouraging different types of innovations. At the same time, it is clear that technology, too, shapes the law potentially transforming its key principles and values. This collection is therefore also a call for reinventing jurisprudence in the technological age; and for legal theorizing that would be able, to use Sheila Jasanoff's words, 'to articulate the principles by which technologies are empowered to rule us.'<sup>1</sup>

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<sup>1</sup> S. Jasanoff (2016): *The Ethics of Invention* (New York: W.W. Norton), 9-10.

# The Rule of Law, Rules of Law, and Technological Management

Roger Brownsword\*

## 1. Introduction

How are we to engage with our conference topic, 'The Rule of Law in the Technological Age'? One approach is to view the technologies of our time as regulatory targets and to think about the challenges involved in ensuring that the development, application, and use of these technologies (by regulatees) is compliant with the Rule of Law. Another approach is to view the same technologies as potential regulatory tools, in which case the challenge is to ensure that the use of these tools by regulators is compliant with the Rule of Law. Of course, if we are to put in place an acceptable regulatory environment for our Technological Age, we need to ensure that the development, use, and application of emerging technologies, whether as targets or as tools, is compatible with the Rule of Law (Brownsword and Yeung, 2008).

In this short essay, I will primarily focus on the questions raised by technologies being employed as regulatory tools. However, before doing so, let me say a few words about the generic challenges that are implicated in the governance of emerging technologies viewed as regulatory targets.

## 2. The generic challenges presented by new technologies as regulatory targets

Elsewhere, I have suggested that regulators face a number of generic challenges in engaging with new technologies (Brownsword, 2008; Brownsword and Goodwin, 2012). From a traditional legal perspective, the most striking challenge is the difficulty of identifying the right time to legislate and then drafting legislation in terms that are reasonably sustainable. The speed at which both biotechnologies and information and communication technologies have developed since the turn of the

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century—in fields as different as embryology and data processing—have already underlined the challenge of maintaining regulatory connection.

Even if a regulatory framework is adequately connected, its terms might not be socially acceptable. In twenty-first century Europe, where citizens expect to enjoy the benefits of innovation but also expect technologies to be safe and to be applied in ways that respect fundamental values, regulators will face the triple demand that they should act in ways that:

- support rather than stifle beneficial innovation;
- manage risks to human health and safety and the environment at an acceptable level; and
- respect community values (such as privacy and confidentiality, freedom of expression, human rights and human dignity, and the like).

The challenges generated by this triple demand reside, first, in the tensions that can exist between each of these demands and, secondly, in the tensions that are hidden within each demand.

With regard to the first of these challenges, regulators will find that, while the innovation lobby will argue for light touch regulation, for strong IPRs, for tax breaks and so on, others will remind regulators (i) that there need to be proper ex ante risk assessments and precautions in place and (ii) that, without adequate regulatory oversight, fundamental values such as respect for human rights and human dignity might be compromised. This demands a ‘proportionate’ response by regulators, weighing the burden on innovators (and, possibly, the delayed enjoyment of benefits) against community concerns for safety and respect for values—which, of course, restates rather than resolves the challenge.

Turning to the second of the challenges, we find that each of the three demands hinges on a deeply contested concept. In particular, what kind of innovation is ‘beneficial’—beneficial to whom, beneficial in meeting whose needs, beneficial relative to which human interests, and so on; and, are the benefits of the innovatory work likely to be realised at once, within the next five years, or at some unspecified time in the future? With regard to safety, what is an ‘acceptable’ risk? Notoriously, professional risk-assessors differ from the lay view in characterising a technology as ‘low risk’ (inviting a leap to ‘safe’) where the likelihood of harm eventuating is low, notwithstanding that on anyone’s view the harm in question is extremely serious. Moreover, how is the risk distributed; who is it that benefits and who is it that bears the risk? Last, but not least, which values are to be

treated as relevant? Which value system do we support—one based on rights, or on duties, or one that is geared towards maximising utility (for this triangle of values, see Brownsword, 2003)? If we base ourselves on rights, then which rights (negative only or negative and positive, libertarian or liberal-welfare, and so on); if duties, then which duties (for example, Kantian or communitarian); if privacy, then which of the many conceptions of privacy (see e.g., Laurie, 2002); and, if human dignity, then which of the many conceptions of human dignity, and so on (see, e.g., Beyleveld and Brownsword, 2001; and Duwell, Braavig, Brownsword, and Mieth (eds), 2014)?

Beyond these dilemmas and trilemmas, regulators are also expected to make effective interventions. While the challenge of regulatory effectiveness is already considerable without the complications introduced by new technologies, there is no doubt that the ready availability of goods and services in a global online marketplace does nothing to ease the difficulties faced by national regulators.

If regulators are not able to ensure that regulatees develop, apply, and use new technologies in ways that are consistent with the regulatory framework, there will be a failure relative to the Rule of Law; but the regulatory framework itself will also be judged to be inadequate—an inadequacy that might also be expressed as a deficit relative to the Rule of Law – if it fails to meet the triple demand addressed to regulators.

Important and complex though these challenges are, I will focus now on the other prong of exploration, the idea of technology operating as a regulatory instrument.

### **3. New technologies as regulatory instruments**

In her latest book, Sheila Jasanoff suggests that, even though ‘technological systems rival legal constitutions in their power to order and govern society...there is no systematic body of thought, comparable to centuries of legal and political theory, to articulate the principles by which technologies are empowered to rule us.’ (Jasanoff, 2016: 9-10) In other words, we need to reinvent jurisprudence so that its context is given by today’s technologies (compare Brownsword, 2016a).

Before we have a new jurisprudence, though, we need to identify the key questions for our theorising. It seems to me that two such questions are as follows.

First, when smart regulatory technologies are pervasive, being incorporated in products, places, and people, what is the relevance of the

Rule of Law? In other words, when regulatory purposes are served by technological systems and technostructures, when 'technological management' rules, what (if any) is the continuing relevance of the Rule of Law?

Secondly, to the extent that our regulatory purposes are served by technological management rather than by rules, what is the future for rules of law? Will the disruption brought about by technological management mean that some legal rules are redundant, or that they need to be redirected, or perhaps simply revised?

Let me offer a few reflections in response to these two questions.

### **(i) Technological Management and the Relevance of the Rule of Law**

While there are many different accounts of the Rule of Law and, to a much lesser extent, the ideal of legality, all accounts assume that law involves an exercise of power (and authority) as rules, standards, or norms are set for compliance. Law is an affair of rules; and the Rule of Law both prescribes and presupposes rule by rules (Fuller, 1969).

Assistive technologies, such as CCTV surveillance or DNA profiling, might be deployed in support of certain rules. Here, the technology supports and encourages compliance with the background rules but it does not guarantee compliance and the situation remains one that is rule-governed. By contrast, the distinctive characteristic of technological management is that it does not function by setting rules; it does not prescribe what one ought or ought not to do; rather, it seeks either to force or to preclude certain acts, or to exclude or restrain certain agents, channelling conduct directly without the intermediation of rules or 'oughts'.

In the paradigmatic case of technological management

- a regulator, R, has a view about whether regulatees should be prohibited, permitted, or required to do x (the underlying normative view)
- R's view could be expressed in the form of a rule that prohibits, permits, or requires the doing of x (the underlying rule)
- but, R uses (or directs others to use) some measures of technological management rather than a rule
- and R's intention in doing so is to translate the underlying normative view into a practical design that ensures that regulatees do or do not do x (according to the underlying rule)

- the ensuing outcome being that regulatees find themselves in environments where the immediate signals relate to what can and cannot be done, to possibilities and impossibilities, rather than (as with prescriptive rules) to what ought or ought not to be done.

There is also the possibility that R adopts technological measures (perhaps for reasons of safety or efficiency) that are not, as such, intended to translate an underlying normative view but which have similar regulatory effects. For example, if regulators—instead of relying on drink-driving laws—were to require manufacturers of motor vehicles to fit sensors that would detect if a person were attempting to drive under the influence of drink or drugs, and then (if so) immobilise the vehicle, this would be a paradigmatic case of technological management. However, where regulators simply authorise autonomous vehicles to run on the roads, then one of the regulatory effects is to limit the opportunities that humans have to drive which, in turn, has the effect of limiting the opportunities that humans have to drive under the influence of drink or drugs.

The question that now arises is the following: can we sensibly apply ideals like the Rule of Law and legality that speak to an enterprise of rule-making and rule-application to the quite different enterprise of technological management where there seem to be neither rules to be made nor rules to be applied? How, for example, can we make sense of requirements such as that laws should be published, that rules should be clear, non-contradictory, prospective, and so on, where technological management supersedes rules? How can technological management violate the principle of legality by requiring the impossible when, quite unlike a rule, its measures redefine what is possible and impossible in a particular regulatory space? The short answer is that, even if we cannot literally copy across the principles of legality from rules to technological measures, we can and must continue to apply the spirit of the Rule of Law to the regulatory use of technological management (Brownsword, 2016b).

As I read it, the spirit of the Rule of Law is to constrain power. A community that subscribes to the Rule of Law rejects the idea that those who are powerful can do just what they want, however they want, to the less powerful. The exercise of power is to be properly authorised; power is not to be applied in an arbitrary way. Given that technological management represents a potent way of exercising power, it has to be constrained; it needs to be properly authorised; and the Rule of Law—expressing a founding compact between those who govern and those who are governed, calling on the one side for legitimate governance and, on the other, for responsible citizenship—continues to be of critical importance. So, how does this translate into a new understanding of the Rule of Law? What exactly is the New Deal that licenses the use of technological management?

In the first instance, proposals for the use of assistive technologies – such as CCTV or DNA profiling, or the smart machines now being deployed to aid and advise decision-makers in the criminal justice system – need to be transparent and open to debate; and, if it is claimed that they are out of line with the Rule of Law, then they should be reviewable. Famously, the broad-sweep use of DNA profiling has been successfully challenged at the European Court of Human Rights (in *S and Marper v United Kingdom* [2008] ECHR 1581); and the use of smart machines in the context of decisions about stop and search, bail, and custodial terms is likely to provoke challenges that reflect concerns about the hidden racial bias that might be built into the machines' calculations (O'Neil, 2016) as well as the systemic pressure to correct more readily for false negatives than false positives (Roth, 2016).

When it is proposed that full-scale technological management should be used, whether to force or to preclude certain acts, there again needs to be an open debate about the purposes for which these measures are to be employed. Quite simply, if a rule would not be authorised for use in a particular case, then neither should technological management. However, even if a rule would be authorised, it does not follow that technological management, too, would be authorised; there might be additional conditions to be satisfied. After all, the complexion of the regulatory environment is fundamentally different where technological management displaces rules (Brownsword, 2011).

What kind of further conditions might be set for the use of technological management? This is where the jurisprudence, as Sheila Jasanoff remarks, is meagre. Here are four tentative suggestions.

First, there might be a condition about the compatibility of technological management with the responsibility that we each have as individual moral agents for making our own judgment as to what is the right thing to do. Even if the technological measures are in line with what we judge to be the right thing, how important is it that we freely choose to do the right thing? In whatever spaces are not subject to technological management, are there sufficient opportunities for moral development and for agents to freely choose to do the right thing? If the technological measure is out of line with our own moral judgment, how far may a society compel one of its citizens to act against his or her conscience? Do we wish to retain the opportunity to express dissent by acts of civil disobedience (see Morozov, 2013)? Does this mean that we should bar the use of technological management where the policy or underlying rule is deeply morally contested in a community (Brownsword, 2017a)?

Secondly, there might be a condition that reserves the possibility of a human override. In the case of driverless cars, for example, we might want to give agents the opportunity to take control of the vehicle in order to deal with some hard moral choice (whether of a 'trolley' or a 'tunnel' nature) or to respond to an emergency (perhaps involving a 'rescue' of some kind). Beyond this, we might want to reserve the possibility of an appeal to humans against a decision that triggers an application of technological management that forces or precludes a particular act or that excludes a particular person or class of persons.

Thirdly, it might be a condition for the use of technological management that the restrictive scope of the measures or their forcing range should be no greater than would be the case were a rule to be used. In this sense, the sweep of technological management should be co-extensive with that of the equivalent rule.

Finally, there might be a condition that interventions involving technological management should be reversible—a condition that might be particularly important if measures of this kind are designed not only into products and places but also into people, as might be the case if regulators contemplate making interventions in not only the coding of product software but also the genomic coding of particular individuals.

#### **(ii) Technological Management and Rules of Law**

The second question, it will be recalled, asks about the fate of rules in an era of technological management. In future, for example, what will protect the safety of pedestrians and road users will be on-board vehicle technologies rather than the provisions of road traffic laws or the highway code. There might be rules that instruct designers of vehicles or the like but rules directed to human drivers will be a thing of the past. So, what is the future of rules of law?

Briefly, it seems to me that we can expect some rules to be replaced or rendered redundant by measures of technological management (for example, where human operators are taken out of the equation by automation, this might render various rules about health and safety—in both the criminal law and in torts—or insurance or employment, and so on, redundant). To some extent, there might be a redirection of rules as they are addressed to the designers of various technologies rather than to those whose conduct is controlled by the technologies. Inevitably, too, there will need to be some revision of current rules (for example, as the technostructures for transactions increasingly shape the deal and its performance, there will need to be some revision of the rules of contract



law and competition law, particularly to protect consumers) (Ezrachi and Stucke, 2016; Brownsword, 2017b).

If this is the future, is there any reason to regret the passing of rules and their replacement with measures of technological management? In some domains, there might be little to regret. For example, if people are happy to have their routine consumer needs serviced by fully automated and connected smart machines, such that many of the rules of contract law become irrelevant, what is the problem? Moreover, if technological management performs better than the rules of environmental law in controlling carbon emissions and the release of pollutants, what is the problem? If technological management through geo-engineering is more effective than rules in protecting the planetary boundaries, is that not a decisive reason for employing it? That said, there might be some domains and some respects where the use of rules is to be preferred.

First, as indicated above, because rules do not in practice reach right through to compliance, there is a gap that might be productively exploited by conscientious objectors and civil disobedients; and, even where there are, as it were, straightforward acts of non-compliance, this can stimulate reflection on the acceptability of the background rules. To this extent, deviance is not entirely dysfunctional.

Secondly, we might be concerned that technological management stifles the opportunity for desirable self-governance. Business people, unlike consumers, might benefit from the opportunity to self-regulate their markets and dealings. Some groups, too, might value having a space to develop their own workable standards of neighbourliness and reasonableness (for example as in Robert Ellickson's seminal study of the farmers and ranchers of Shasta County) (Ellickson, 1991).

Thirdly, we might doubt that technological management is capable of reflecting the nuances that can be built into the drafting of rules (inviting interpretation and, concomitantly, offering some space for discretionary application that is responsive to the particular circumstances).

Fourthly, while rule-making can be inclusive and accessible, we might be concerned that there is a risk that the use of technological management excludes too many (non-technically expert) people who simply cannot meaningfully participate in the process.

Finally, to the extent that rules are provisional, reviewable, and revisable interventions, is there a risk that, in practice, measures of technological management might be resistant to easy change or amendment?

#### 4. Conclusion

Technological management is not just another way of directing human conduct; it is not just an alternative to prescribing rules. Digital rights management is not just like saying to users 'respect the IP rules' or 'comply with the terms and conditions of your licence'; applying a technological fix to a supermarket trolley or a golf cart is not just like saying 'do not wheel the trolley off site or take the cart onto the greens'; embedding privacy protecting design in products is not just like saying 'respect data protection or privacy principles', and so on. Focusing on technological prevention of crime is not at all the same as responding ex post to a violation of the criminal code. In each case, the use of technological management rather than rules changes the complexion of the regulatory environment. Thus, it is imperative that we ask whether its use is a legitimate exercise of power; and, we urgently need to understand more about the ways in which pervasive technological management will impact on the conditions of our social existence.

If the cities of Europe are to be technologically sophisticated and smart, then there needs to be a public discussion about the way in which the relevant enabling technologies are embedded in our different environments, at home, at work, at play, and so on. These are technologies with regulatory effects, impacting on our health and safety as well as our culture and values. There needs to be reflection on the regulatory role of these technologies, alongside law and social norms, long before they are part of our regulatory environments, not as an afterthought.

Now is the time to be asking these questions. Moreover, it is lawyers who should be in the vanguard in formulating these questions. The Rule of Law is too important to be left to politicians; and the conference in Amsterdam represents a significant step in recognising that today's technologies are potentially disruptive for both legal practice and the way that we regulate social life (see, further, Brownsword, Scotford and Yeung, 2017).

#### References

- Beyleveld, Deryck and Brownsword, Roger (2001): *Human Dignity in Bioethics and Biolaw* (Oxford: Oxford University Press)
- Brownsword, Roger (2003): 'Bioethics Today, Bioethics Tomorrow: Stem Cell Research and the "Dignitarian Alliance"' 17 *University of Notre Dame Journal of Law, Ethics and Public Policy* 15-51
- Brownsword, Roger (2008): *Rights, Regulation and the Technological Revolution* (Oxford: Oxford University Press)

- Brownsword, Roger (2011): 'Lost in Translation: Legality, Regulatory Margins, and Technological Management' 26 Berkeley Technology Law Journal 1321-1365
- Brownsword, Roger (2016a): 'Field, Frame and Focus: Methodological Issues in the New Legal World' in Rob van Gestel, Hans Micklitz, and Ed Rubin (eds), *Rethinking Legal Scholarship* (Cambridge: Cambridge University Press) 112-172
- Brownsword, Roger (2016b): 'Technological Management and the Rule of Law' (2016) 8 *Law, Innovation and Technology* 100-140
- Brownsword, Roger (2017a): 'Law as a Moral Judgment, the Domain of Jurisprudence, and Technological Management' in Patrick Capps and Shaun D. Pattinson (eds), *Ethical Rationalism and the Law* (Oxford: Hart) 109-130
- Brownsword, Roger (2017b): 'The E-Commerce Directive, Consumer Transactions, and the Digital Single Market: Questions of Regulatory Fitness, Regulatory Disconnection and Rule Redirection' (forthcoming)
- Brownsword, Roger and Goodwin, Morag (2012): *Law and the Technologies of the Twenty-First Century* (Cambridge: Cambridge University Press)
- Brownsword, Roger, Scotford, Eloise, and Yeung, Karen (eds) (2017): *The Oxford Handbook of Law, Regulation and Technology* (Oxford: Oxford University Press)
- Brownsword, Roger and Yeung, Karen (eds) (2008): *Regulating Technologies* (Oxford: Hart)
- Duwell, Marcus, Braavig, Jens, Brownsword, Roger, and Mieth, Dietmar (2014): *Cambridge Handbook of Human Dignity* (Cambridge: Cambridge University Press)
- Ellickson, Robert C. (1991): *Order Without Law* (Cambridge, Mass.: Harvard University Press)
- Ezrachi, Ariel and Stucke, Maurice (2016): *Virtual Competition* (Cambridge, Mass.: Harvard University Press)
- Fuller, Lon L. (1969): *The Morality of Law* (New Haven: Yale University Press)
- Jasanoff, Sheila (2016): *The Ethics of Invention* (New York: W.W. Norton)
- Laurie, Graeme (2002): *Genetic Privacy: A Challenge to Medico-Legal Norms* (Cambridge: Cambridge University Press)
- Morozov, Evgeny (2013): *To Save Everything, Click Here* (London: Allen Lane)
- O'Neil, Cathy (2016): *Weapons of Math Destruction* (London: Allen Lane)
- Roth, Andrea (2016): 'Trial by Machine' 104 *Georgetown Law Journal* 1245-1305

# Regulation *by* Platforms

## The impact on fundamental rights

Orla Lynskey\*

### Introduction

When John Perry Barlow penned the ‘Declaration of the Independence of Cyberspace’<sup>1</sup> it was governments, ‘weary giants of flesh and steel’, rather than private actors that threatened to jeopardise emerging governance structures in ‘cyberspace’. Twenty years later, the State increasingly operates in tandem with online private actors in security and law enforcement, in the provision of public goods and even to adjudicate what is in the ‘public interest’.<sup>2</sup> Digital platforms are key players in this picture. While what constitutes a ‘digital platform’ is contested, a digital platform is defined here as an ‘undertaking operating in two (or multi)-sided markets, which uses the Internet to enable interactions between two or more distinct but interdependent groups of users so as to generate value for at least one of the groups’.<sup>3</sup> Digital platform is therefore a broad category encompassing familiar services such as content-sharing site YouTube, micro-blogging service Twitter, shopping site Amazon, and general and specialized search services, such as Google and Skyscanner, amongst many other others.

What is critical about a platform for the purpose of this paper is that it acts as a type of digital middleman, intermediating the activities of individuals in the digital sphere. Private platforms are already subject to various forms

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<sup>1</sup> John Perry Barlow, ‘A Declaration of the Independence of Cyberspace’, 8 February 1996, available at <https://www.eff.org/cyberspace-independence> (all links last accessed 8 March 2016).

<sup>2</sup> This follows from the ECJ ruling in Case C-131/12 *Google Spain SL v AEPD* (EU:C:2014:317). See further, Julia Powles, ‘The Case That Won’t be Forgotten’ [2015] *Loyola University Chicago Law Journal* 583.

<sup>3</sup> European Commission, ‘Public Consultation on the regulatory environment for platforms, online intermediaries, data and cloud computing and the collaborative economy’, September 2015, 5. Available at: <https://ec.europa.eu/digital-agenda/en/news/public-consultation-regulatory-environment-platforms-onlineintermediaries-data-and-cloud> .

of regulation: for instance, they are beneficiaries of private law rights, and subject to private law liabilities.<sup>4</sup> They also benefit from a presumption of neutrality, which exempts them from liability, when they act as a 'mere conduit' for content, or simply 'cache' or 'host' this content.<sup>5</sup> Thus, for instance, a platform like Facebook will not be held liable for defamatory content if it can demonstrate that it did not have actual or constructive knowledge that the content it was hosting was defamatory, and that it acted expeditiously to remove the content upon becoming aware of its existence.<sup>6</sup>

However, in addition to this regulation *of* private online platforms, this paper suggests that we are also regulated *by* private platforms and that this 'private ordering', facilitated by technological code, has implications for economic, social, cultural and political dimensions of our lives.<sup>7</sup> This paper argues, in particular, that platforms influence the extent to which we can exercise our rights, and the effectiveness of those rights, in a direct and indirect way. These implications are exacerbated when the platform concerned is in a position of power, for instance because of the number of individuals that use the platform. This paper shall illustrate this point by reference to two examples, and will then briefly identify some of the options open to policy-makers to tackle these issues, and the challenges they may face in so doing.

### **Regulation by platforms: the direct impact on the exercise of fundamental rights**

According to Article 10 ECHR, the freedom of expression includes the freedom to 'receive and impart information and ideas without interference'. Powerful platforms, such as Facebook with its privileged access to 1.86

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<sup>4</sup> Mark A Lemley, 'Terms of Use' (2006) *Minnesota Law Review* 459 and Woodrow Hartzog, 'Website Design as Contract' (2011) 60 *American University Law Review* 1635.

<sup>5</sup> Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce) [2000] OJ L178/1.

<sup>6</sup> E-Commerce Directive, Article 14. The application of this provision has, however, not always been straightforward in practice. See, most recently, *CG v Facebook* [2016] NICA 54.

<sup>7</sup> Tarleton Gillespie, 'Governance of and by platforms' in Jean Burgess, Thomas Poell, and Alice Marwick (eds) *SAGE Handbook of Social Media* (forthcoming). Pre-publication available at: <http://culturedigitally.org/wp-content/uploads/2016/06/Gillespie-Governance-ofby-Platforms-PREPRINT.pdf>.

billion monthly active users<sup>8</sup>, control information flows, and shape the relationship between users, on one side of the market, and providers of information and content, on the other side of the market. The position of these platforms as chokepoints, or gatekeepers<sup>9</sup>, in the digital information sphere is implicit in the fact that they are co-opted by the State in order to police certain content, for instance child abuse images.<sup>10</sup> Thus, it is possible to say that in the online world, platforms have primary responsibility for enabling, or disabling, our access to and dissemination of information. Indeed, this power has attracted considerable media attention following the British referendum on Brexit and the election of Donald Trump in the US, where the victors claim that political micro-targeting based on user data was critical to their success at the ballot box.<sup>11</sup> Digital platforms also determine the terms and conditions on which this access to information and dissemination occurs. In practice therefore platforms determine the extent to which individuals can enjoy the benefits of established rights and freedoms, such as the right to freedom of expression. This power to include or exclude certain content from a platform, or to rank it, is a significant power. For instance, in its most recent annual report on Digital News Oxford's Reuters Institute reports that of the 50,000 individuals it surveyed across 26 countries, 12% say social media is their main source of news while in the US, for instance, the percentage of people who use social media as a news source is now 46%, almost doubling since 2013.<sup>12</sup> This issue has gained prominence recently as a result of increased media and political scrutiny of the role of platforms in disseminating 'fake news'.<sup>13</sup>

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<sup>8</sup> Facebook, 'Newsroom: Stats'. Available at <http://newsroom.fb.com/company-info> (all urls last accessed on 7 March 2017, unless otherwise stated).

<sup>9</sup> Karine Barzilai-Nahon, 'Toward a theory of network gatekeeping: A framework for exploring information control' (2008) 59(9) *Journal of the American Society for Information Science and Technology* 1493.

<sup>10</sup> For instance, in the UK the Internet Watch Foundation helps the State to combat the dissemination of child abuse images. For further information on the activities of the Internet Watch Foundation visit: <https://www.iwf.org.uk/>.

<sup>11</sup> See, BBC Panorama, 'What Facebook Knows About You', aired on 8 May 2017, and Carole Cadwalladr, 'The great British Brexit robbery: how our democracy was hijacked', *The Observer*, 7 May 2017. Available at: <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy>.

<sup>12</sup> Reuters Institute for the Study of Journalism, 'Reuters Institute Digital News Report 2016', 7 and 8: <http://reutersinstitute.politics.ox.ac.uk/sites/default/files/Digital%20News%20Report%202016.pdf>.

<sup>13</sup> House of Commons - Culture, Media and Sport Committee, 'Fake news' inquiry (closed 3 March 2017) which queried, inter alia, whether 'changes in the selling and placing of advertising encouraged the growth of fake news, for example, by making it profitable to use fake news to attract more hits to websites, and thus

However, this power of platforms over opinion formation has always been present.

Ranking in the search engine context is inevitable, as not all search results can appear at the top of the results, or even on the first page. Nevertheless, it appears that search is a 'credence good', and that users therefore trust that the results that are produced in response to a search query, and the order in which these results are produced, is based on objective criteria. This results in what has been labelled a 'search engine manipulation effect' (SEME).<sup>14</sup> SEME does not suggest that search engines deliberately manipulate individuals but rather that individuals fail to consider critically the veracity of search results. Similarly, the suggestions offered by 'autocomplete' tools by platforms can influence individual perceptions. As Mansell suggests, digital platforms also have the 'power to ensure that certain public impressions become permanent, while others remain fleeting'.<sup>15</sup> Consider the controversy in the UK when it was reported that Google search engine's failure to offer a suggested 'autocomplete' search term when individuals entered the words 'Conservatives are' in the search engine yet offered several autocomplete suggestions when terms relating to rival political parties (for instance, 'Labour are') were entered into the search engine.<sup>16</sup> Google's secret sauce - its ranking algorithm - is zealously guarded as a commercial secret with Google revealing only that its algorithm relies on 200 or so signals to glean the search intention of the user. Relevant factors here certainly include geographic location, the 'freshness' of website content etc.<sup>17</sup> Critical attention has however focused on the extent to which this ranking should, or can, be neutral.<sup>18</sup>

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more income from advertisers'.  
<https://www.parliament.uk/business/committees/committees-a-z/commons-select/culture-media-and-sport-committee/inquiries/parliament-2015/inquiry2/>.

<sup>14</sup> Robert Epstein and Ronald E. Robertson, 'The search engine manipulation effect (SEME) and its possible impact on the outcomes of elections' 2015(112) Proceedings of the National Academy of Sciences of the United States of America (PNAS). Available at: <http://www.pnas.org/content/112/33/E4512.abstract>.

<sup>15</sup> Frank Pasquale, *The Black Box Society - The Secret Algorithms that Control Money and Information* (Harvard University Press, 2015), 14.

<sup>16</sup> The New Statesman, 'Why doesn't Google autocomplete "Conservatives are..."?', 3 February 2016. Available at: <http://www.newstatesman.com/politics/media/2016/02/why-doesn-t-google-autocomplete-conservatives-are>.

<sup>17</sup> Google, 'How Google Search Works': <https://support.google.com/webmasters/answer/70897?hl=en>.

<sup>18</sup> For instance, the European Commission continues to investigate Google for an alleged abuse of dominance on the grounds that it 'systematically favours its comparison shopping services in its search results pages'. The Commission therefore appears to assume an obligation of non-discrimination on Google's part.

Platforms can also have a significant direct impact on freedom of expression by blocking the route between individuals and providers. Pasquale provides the example of Apple's exclusion of the 'Drone +' application from its App Store.<sup>19</sup> The Drone + application provided users with real-time alerts of drone strikes reported in the media. In this way, users of the application who wished to gain access to publicly available information about under-reported military drone strikes could obtain it in a user-friendly format. The application was rejected from the App Store twice: first on the grounds that it was 'not useful' and subsequently on the basis that it was 'objectionable and crude'.<sup>20</sup> The exclusion of the application is just one illustration of the way in which the actions of gatekeepers can have an impact on opinion formation and the autonomy of Internet users.<sup>21</sup> It also illustrates that gatekeeper transparency is critical.<sup>22</sup> It might be argued that other sources of this information remained available, and that all editorial decision-making necessarily implies the exclusion of some information. This is true. However, what is different in this context is the role of Apple's architecture (or code) in the decision-making context. Apple devices are automatically, and necessarily, routed through the Apple App Store 'walled garden'.<sup>23</sup> Apple's choices are

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See: Commission Press Release, 'Commission takes further steps in investigations alleging Google's comparison shopping and advertising-related practices breach EU rules\*', 14 July 2016. For comment see: Angela Daly, 'Dominating search: Google before the law' in Konig, Rene & Rasch, Miriam (Eds.) *INC Reader #9 Society of the Query: Reflections on Web Search*. Institute of Network Cultures (Amsterdam, 2014) 86-104. Available at: [http://networkcultures.org/query/wp-content/uploads/sites/4/2014/06/7.Angela\\_Daly.pdf](http://networkcultures.org/query/wp-content/uploads/sites/4/2014/06/7.Angela_Daly.pdf).

<sup>19</sup> Pasquale, *The Black Box Society* (n 16) 62.

<sup>20</sup> Pasquale, *The Black Box Society* (n 16) 62.

<sup>21</sup> Competition lawyers reject the suggestion made by some authors that Google could be likened to public utilities (such as rail or electricity providers) or essential facilities. See, for instance, Marina Lao, 'Search, Essential Facilities and the Antitrust Duty to Deal' (2013) *Northwestern Journal of Technology and Intellectual Property* 275.

<sup>22</sup> The recent controversy following the 'revelation' that Facebook uses human curators in order to shape the 'Facebook trends' feature also illustrates the opacity of the operations of gatekeepers and the consequent lack of understanding of these operations. See, Sam Thielman, 'Facebook news selection is in hands of editors not algorithms, documents show', *The Guardian*, 12 May 2016 (<https://www.theguardian.com/technology/2016/may/12/facebook-trending-news-leaked-documents-editor-guidelines>) or Deepa Seetharaman, 'Facebook's Curators Shape 'Trending' News Feature' *Wall Street Journal*, 12 May 2016 (<http://www.wsj.com/articles/facebooks-curators-shape-trending-news-feature-1463095472>).

<sup>23</sup> A 'walled garden' is a closed environment (for instance, an operating system) where the operator controls access to the applications, content and services that



therefore the choices of the user, and the user should be aware of the factors informing Apple's decisions to include and exclude applications/products from its App Store. As Mansell suggests, 'citizens cannot choose to view what they are not aware of or to protest about the absence of content which they cannot discover'.<sup>24</sup>

### **Regulation by platforms: the indirect impact on fundamental rights**

Platforms may also have an indirect effect on fundamental rights as a result of their position of power vis-à-vis content and service providers. In the data protection and privacy context, this is evident when one considers the role of platforms in setting the benchmark for data use conditions for all providers wishing to distribute their content or services on the platform. For instance, the UK Competition and Markets Authority (CMA) noted that operating systems (such as Google's Android, or the Apple OS) are:

responsible for the Application Programming Interfaces (APIs) which dictate how the software and hardware interact - including what information the app can access. APIs control the release of information according to the privacy controls in place at the [operating system] level.<sup>25</sup>

The operating system platform therefore determines to what extent key data protection principles are promoted. Reports suggest that platforms are doing little to promote key data protection principles, such as data minimisation,<sup>26</sup> amongst application providers. For example, a 2014 survey conducted by the Global Privacy Enforcement Network (GPEN) discovered that one third of all applications requested an excessive number of permissions to access additional personal information.<sup>27</sup> Moreover, the US Federal Trade Commission (FTC) has taken actions against applications such as Brightest Flashlight and Snapchat in recent years for

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can be accessed. By only allowing approved apps into the Apple App Store, Apple seeks to ensure better interoperability, syncing and security however this closed system may also limit user autonomy. Brian Meyer, 'Why is iOS a Walled Garden?', Apple Gazette, 13 November 2013 (<http://www.applegazette.com/opinion/why-does-apple-hide-ios-in-a-walled-garden/>).

<sup>24</sup> Robin Mansell, 'Platforms of power' (2015) 43(1) *Intermedia* 20, 28.

<sup>25</sup> CMA, 'The commercial use of consumer data: Report on the CMA's call for information', CMA38, June 2015, 42.

<sup>26</sup> Article 6(1)(c) of the Data Protection Directive (European Parliament and Council Directive 46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data [1995] OJ L281/23) states that personal data must be 'not excessive in relation to the purposes for which they are collected and/or further processed'.

<sup>27</sup> CMA, 'The commercial use of consumer data' (n 26) 123.

misrepresenting how the personal data they gather is used.<sup>28</sup> This is not to say that platforms are entirely inactive when it comes to promoting privacy and data protection. For instance, recent reports suggest that Google Play – the App store for Android users – culled applications from its platform on the basis of privacy and data protection concerns.<sup>29</sup> However, their ostensible ‘lowest common denominator’ approach to these rights influences the extent to which these rights can be enjoyed their users. Indeed, Google Play’s cull appeared only to remove egregious violators of rights from the App store (for example, applications requesting sensitive permissions – such as unnecessary data from cameras or microphones – and that did not comply with the basic principles set out in the Play Store privacy policy).

In addition to determining the terms on which applications can operate (and process data), platforms can also demand that applications provide them with access to customer data. For instance, it is well documented that the Financial Times withdrew its application from the Apple App store when it was forced to provide Apple with its consumer data. The news provider went on to launch a Web-based version of its mobile app in a bid to retain reader interest.<sup>30</sup> Smaller news outlets have chosen not to provide an app in a bid to retain custody of their user data.<sup>31</sup>

A complaint filed with the European Commission by the provider of a privacy enhancing technology (PET) provides a further illustration of how platforms can indirectly influence the extent to which individuals can exercise their rights. Disconnect complained to the Commission that Google had excluded one its applications from Android’s Google Play application store thereby abusing its position of market power on the market for mobile handset operating systems.<sup>32</sup> Disconnect argued that the exclusion of its application from the Google Play App store unfairly discriminated against its application and gave Google’s own rival software a competitive advantage. The Disconnect application in question prevents

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<sup>28</sup> CMA, ‘The commercial use of consumer data’ (n 26) 123-124.

<sup>29</sup> Eric Abent, ‘Google Play prepares to remove apps over missing privacy policies’, 9 February 2017. Available at <https://www.slashgear.com/google-play-prepares-to-remove-apps-over-missing-privacy-policies-09474464/>.

<sup>30</sup> Reuters, ‘Financial Times pulls its apps from Apple Store’, 31 August 2011 (<http://www.reuters.com/article/us-apple-ft-idUSTRE77U1O020110831>).

<sup>31</sup> Natali Helberger, Katharina Kleinen-von Königslöw and Rob van der Noll, ‘Regulating the new information intermediaries as gatekeepers of information diversity’ 2015(17)(6) *Info* 50, 56.

<sup>32</sup> Alistair Barr, ‘App Maker Files EU Complaint Against Google, Alleging Abuse of Android Dominance’, 1 June 2015. Available at: <http://www.wsj.com/articles/app-maker-files-eu-complaint-against-google-alleging-abuse-of-android-dominance-1433204706#:mdP9UIcFB3W9ZA>.

third parties from tracking Android users when they browse the web or use applications on their devices. This tracking is used to gather data to improve the targeting of advertising but can also facilitate the installation of malware on devices. Google responded informally by highlighting that it applies its policies consistently to all applications and that it has 'long prohibited apps that interfere with other apps – such as altering their functionality, or removing their way of making money'.<sup>33</sup> It also emphasised that there are over 200 privacy applications available in Google Play that comply with its policies. This example again illustrates the indirect impact that gatekeepers can have on the exercise of rights: by blocking a PET – a technology designed to enhance privacy – a platform can make it more cumbersome for an individual to exercise privacy and data protection rights. While the impact on rights might be minimal given the availability of competing PETs, again it highlights that in the absence of an objective and transparently applied policy for the inclusion of applications on a software platform, the platform can have an impact on the rights of individuals.

### Regulatory options for the road ahead

The examples set out above seek to illustrate that private platforms are having a direct and an indirect influence on the extent to which individuals can exercise their fundamental rights, and the effectiveness of these rights in practice. Nevertheless, a regulatory 'solution' to deal with these fundamental rights implications is not obvious.

The issue of 'platform power' has been the subject of increasing doctrinal<sup>34</sup> and media attention.<sup>35</sup> For instance, Cohen has argued that successful state regulation of the information economy will, amongst other things, require an 'analytically sound conception of *platform power*' and 'coherent and publicly accountable methods for identifying, describing and responding to systemic threats'.<sup>36</sup> 'Platform power' is also becoming a prominent feature

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<sup>33</sup> Foo Yun Chee, 'Privacy app maker files EU antitrust complaint against Google', 2 June 2015. Available at: <http://www.reuters.com/article/us-eu-google-antitrust-idUSKBN0O11Z220150602>.

<sup>34</sup> See, most notably, Angela Daly, *Private Power, Online Information Flows and EU Law: Mind the Gap* (Hart, 2016).

<sup>35</sup> Joe Kennedy, 'Don't regulate internet platforms, embrace them', 14 November 2015, EurActiv (<http://www.euractiv.com/section/digital/opinion/don-t-regulate-internet-platforms-embrace-them/>); Tom Fairless, 'EU Digital Chief Urges Regulation to Nurture European Internet Platforms', 14 April 2015, The Wall Street Journal (<http://www.wsj.com/articles/eu-digital-chief-urges-regulation-to-nurture-european-internet-platforms-1429009201>).

<sup>36</sup> Julie Cohen, 'The Regulatory State in the Information Age' (2016) 17(2) *Theoretical Inquiries in Law* (forthcoming). Available at

on public policy and regulatory agendas, particularly across Europe.<sup>37</sup> The European Union (EU) pinpointed this issue for further attention in a 2015 Communication setting out its strategy for a Digital Single Market for Europe. It noted that:

Some online platforms have evolved to become players competing in many sectors of the economy and the way they use their market power raises a number of issues that warrant further analysis beyond the application of competition law in specific cases.<sup>38</sup>

This marks a turning point as, to date, regulators have assumed that the application of *ex post* competition law (or antitrust) rules, designed to ensure that companies with market power will not exclude equally efficient competitors or engage in exploitation, negates the need for the *ex ante* regulation of platforms. Indeed, it is suggested that competition law is the wrong tool to address these harms for several reasons. For instance, the concept of power is 'market power' and is a term of art identified on the basis of economic analysis of substitutability patterns. These tests do not capture communications power, and thus markets that are experienced by consumers as monopolistic (for instance, social networking services) may not be classified as relevant markets or may be deemed competitive. Perhaps more significantly, the harms that competition law seeks to remedy are economic harms. This is manifest, for instance, through its focus on consumer welfare.<sup>39</sup> However, the harms at stake here are

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SSRN: <http://ssrn.com/abstract=2714072>. Cohen defines 'platform power' as the 'power to link facially separate markets and/or to constrain participation in markets by using technical protocols.'

<sup>37</sup> *Conseil National du Numerique (CNNum)*, 'Platform Neutrality: Building an open and sustainable digital environment', May 2014 (available at [http://www.cnnumerique.fr/wp-content/uploads/2014/06/PlatformNeutrality\\_VA.pdf](http://www.cnnumerique.fr/wp-content/uploads/2014/06/PlatformNeutrality_VA.pdf)), 6. The French *CNNum* acknowledge the ability of internet platforms 'to create great value from the data retrieved from users', it also states that the use of this data must ensure respect for the 'data rights' of users and that individuals 'maintain sole control over the repercussions resulting from the use thereof' and 'benefit from the use of their data'. It concludes that 'recent events have illustrated that current practices do not make it possible to reach these goals.'

<sup>38</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'A Digital Single Market Strategy for Europe' COM (2015) 192 final, 12.

<sup>39</sup> According to the European Commission in its Guidance on Article 102 TFEU consumer welfare means that consumers 'benefit from competition through lower prices, better quality and a wider choice of new or improved goods and services' (European Commission, Guidance on the Commission's enforcement priorities in

fundamental rights harms, with civic and social ramifications. This issue should not therefore be viewed solely from a competition law perspective, or from the lens of economic regulation. Indeed, it may be argued that by facilitating further consolidations of power, without any regard for these non-economic implications, competition law should rather be viewed as part of the problem rather than part of the solution.<sup>40</sup>

This is not to say however that the task of regulating powerful platforms is a necessary or an easy one. As a starting point, the harms outlined, even in the context above, are relatively distinct – power over opinion formation; encouraging low standards of data protection, leading to this *de facto* reality; and, preventing the emergence of technologies that would facilitate ‘informational self-determination’ and data protection rights, yet harm the bottom line of other application providers. It is thus clear that, if regulation is appropriate to tackle these implications, a single overarching regulatory framework is not the obvious solution. Moreover, as Cohen suggests, as ‘threatened future harms have become more abstract, diffuse, and technologically complex, disputes about the appropriate regulatory response have become struggles for control over the modelling and representation of systemic threats and the burden of proof required to justify regulatory action’<sup>41</sup> It is also difficult to delimit the target of such regulation: would it simply be ‘powerful’ platforms? This begs the question of how we might identify, and delimit, these regulatory targets in an objective way. While GAFAM (Google-Amazon-Facebook-Apple) might come to mind, it is immediately apparent that the operations of each is distinct and thus may or may not have fundamental rights implications. A harms-focused approach is thus potentially to be preferred, although this may need to take into account the power differences between these different platforms.

A further difficulty is that regulation would involve extending the logic of fundamental rights to private operators. Rights can only be exercised *vis-à-vis* public authorities, however the ECtHR has accepted that in some circumstances a positive obligation exists for the State to protect this right. For instance, in deciding whether such an obligation exists in the freedom of expression context, several factors should be taken into account including: the kind of expression at stake; the capability of that expression to contribute to public debates; the nature and scope of the restrictions on expression rights; the availability of alternative venues for expression; and,

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applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings OJ [2009] C 45/7, [5]).

<sup>40</sup> Case COMP/M.7217, *Facebook/Whatsapp*, Commission Decision, [2014] OJ L24/1.

<sup>41</sup> Cohen, ‘The Regulatory State in the Information Age’ (n 38) 17.

the countervailing rights of others or of the public.<sup>42</sup> Others, such as Jean Thomas, have proposed models to enable the enforcement of these public law rights vis-a-vis private actors, justifying this approach by emphasizing the common objectives of descriptive, normative and constitutional theories of rights and the gaps in rights protection that would ensue in the absence of such an extension.<sup>43</sup>

Given these challenges in regulating, it may well be necessary to resort to other non-legal 'modalities of regulation'<sup>44</sup>, for instance norm changing or technological fixes, in order to adjust to the influence that private platforms are now having on fundamental rights.

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<sup>42</sup> *Appleby and Others v. the United Kingdom*, para [42]-[43] and [47]-[49].

<sup>43</sup> Jean Thomas, *Public Rights, Private Relations* (OUP, 2015).

<sup>44</sup> Lawrence Lessig, *Code and Other Laws of Cyberspace, Version 2.0* (Basic Books, 2006).

# Virtual Competition

## The rise of unchallenged collusion and discrimination?

Ariel Ezrachi & Maurice E. Stucke\*

### 1. Introduction

Technological developments in e-commerce, computers, Big Data, and pricing algorithms, have changed the way we shop and communicate. In reducing our reliance on local offerings, and increasing competition, they have improved our welfare – with lower prices, better products and greater choice. And yet, following the initial welfare gains, one may identify increasing attempts by sellers and the super-platforms to ‘rebalance’ the welfare equation and clawback some of the gains. Such harmful practices include behavioural discrimination, price alignment and the super-platforms’ abuse of their gate keeper power to foreclose markets to competition.

Interestingly, with the changing dynamics of online competition, some of these practices -- despite their adverse effects on producers, consumers and society -- may remain beyond the law’s reach. The effects and manifestation of such practices is discussed in our recently published book, *Virtual Competition: The Promise and Perils of the Algorithm Driven Economy*.<sup>1</sup> In this paper, we use two examples – tacit collusion and behavioural discrimination – to illustrate the new potentially harmful dynamics of online competition. Importantly, we recognize that Big Data and technological innovations are neither good, bad, nor neutral: their nature depends on how firms employ them, whether their incentives are aligned

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<sup>1</sup> HUP, 2016. See:

<http://www.hup.harvard.edu/catalog.php?isbn=9780674545472&content=reviews>

with our interests, and certain market characteristics.<sup>2</sup> Our discussion does not challenge the merit in further technological advancement, but rather highlights the emergence of new anticompetitive strategies and the current laws' limitations.

## 2. Artificial Intelligence & Collusion

As companies increasingly rely on pricing algorithms and Big Data to price goods, what are the implications on collusion? Technological developments give rise to at least four categories of collusion, two of which may fall outside the reach of most competition laws.

Take for example the ability to foster horizontal collusion through the use of algorithms aimed at monitoring pricing and aligning their actions to those of competitors. Today, the majority of retailers track online prices – predominantly via automated software programmes developed for that purpose – and, nearly 80% of those using such software consequently adjust their own prices to those of their competitors (sometimes on an automatic basis).<sup>3</sup> Manufacturers also have increased possibilities to monitor deviations from "recommended" retail prices, with software being capable of reporting (sometimes with immediate alerts) on how much prices diverge from the recommended retail prices, or another reference price used, and for how long.

Multiple firms may unilaterally use the computer as part of a subtler strategy to enhance market transparency and predict behaviour. The endemic use of similar (or identical) algorithms can transform the previous competitive market to new market conditions, which owing to the similarity of the algorithms and greater transparency, enable conscious parallelism and higher prices. Computers can rapidly police deviations, and calculate the profit implications of myriad moves and counter-moves to punish deviations.<sup>4</sup> The speed of calculated responses effectively deprives discounting rivals of any significant sales. The speed also means that collusion can be signalled in a matter of seconds. The greater the improbability that the first-mover will benefit from its discounting, the greater the likelihood of tacit collusion.

The stability needed for tacit collusion is further enhanced by the fact that computer algorithms are unlikely to exhibit human biases. Although

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<sup>2</sup> <https://hbr.org/2016/10/how-pricing-bots-could-form-cartels-and-make-things-more-expensive>

<sup>3</sup> European Commission Staff Working Document Preliminary Report on the E-commerce Sector Inquiry, SWD(2016) 312 final (2016), at 8.

<sup>4</sup> <http://www.newyorker.com/business/currency/when-bots-collude>



human biases may be reflected in the programming code, biases will not affect decisions on a case-by-case basis: a computer does not fear detection and possible financial penalties or incarceration; nor does it respond in anger.<sup>5</sup>

Importantly, when such actions are the result of unilateral strategy, they would often escape the scrutiny of competition provisions. This is so as the use of algorithm to monitor price will not often amount to an illegal agreement or concerted practice. Indeed, in such case the firms have not jointly agreed to anything, nor have the computers “agreed” as conventionally understood to fix prices. The removal of the legal concept of agreement restricts the range of enforcement tools.

As Lord David Currie of the U.K. Competition and Markets Authority observed, “the rise of the algorithmic economy raises potentially difficult questions for competition policy”:

Algorithms can provide a very effective way of almost instantly coordinating behaviour, possibly in an anti-competitive way. Where algorithms are designed by humans to do so, this is merely a new form of the old practice of price-fixing. But machine learning means that the algorithms may themselves learn that co-ordination is the best way to maximise longer-term business objectives. In that case, no human agent has planned the co-ordination. Does that represent a breach of competition law? Does the law stretch to cover sins of omission as well as sins of commission: the failure to build in sufficient constraints on algorithmic behaviour to ensure that the algorithm does not learn to adopt anti-competitive outcomes? And what if constraints are built in but they are inadequately designed, so that the very clever algorithm learns a way through the constraints? How far can the concept of human agency be stretched to cover these sorts of issues? I have suggested earlier that the competition tools at our disposal can tackle the competition issues that we face in the new digital world, but perhaps this last issue which I have touched on is one where this proposition is not true.<sup>6</sup>

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<sup>5</sup> <https://hbr.org/2016/10/how-pricing-bots-could-form-cartels-and-make-things-more-expensive>

<sup>6</sup> <http://www.wired.gov.net/wg/news.nsf/articles/David+Currie+on+the+role+of+competition+in+stimulating+innovation+03022017141532?open>

Lord Currie recognized that the EU and US enforcers currently cannot tackle this last scenario. Based on our discussions with enforcers, lawyers and economists, the emerging consensus is that the current legality under competition law, however, should not mask the policy question of whether such practices, when implemented by smart machines in a predictable digitalised environment, *ought* to be condemned. With the ability to rely on advanced algorithms to change the market dynamics and the possibility to use artificial intelligence to perfect the strategy, could competition law enforcers effectively identify and target such strategies? If so, should they?

### **3. The Rise of Behavioural Discrimination**

While enforcers, lawyers and economists uniformly condemn collusion, there is greater disagreement over behavioral discrimination. We are already familiar with third-degree price discrimination, which involves the charging of different prices to different groups. The price can depend, among other things, on your age or reference group – such as students. These practices, which are commonly regarded as efficient, are typically permitted under the competition rules. And yet, new, advanced forms of price discrimination may emerge in the online environment, and may justify consideration of the scope and effectiveness of current enforcement policies.

One distinct feature of behavioural discrimination is the shift to perfect, or first-degree, price discrimination -- where firms can identify and charge for every individual their reservation price. Outside of a few markets (like tuition of highly selective private universities in the U.S.), this is rarely feasible in the brick-and-mortar world. But near-perfect price discrimination may eventually be within reach in our online environment. Many refined forms of price discrimination, involving different pricing on mobile platforms and PCs, personalized search results, personalized coupons, and price steering, are already appearing in the online marketplace. Online platforms and sellers may employ sophisticated strategies to further divide us into even smaller groups to better approximate our reservation price.

Our anonymity and ability to identify a single competitive price are becoming a thing of the past. The more we buy online, the more time we spend online, and the more firms track us on- and off-line, then the more data the firms collect about us, and the better they can categorize us with other similar purchasers. To better train their algorithms and categorize us into even smaller groups of individuals, firms will need personal data. The rise of digital personal assistants will provide this data, including insights on our preferences, habits, and weaknesses. The avalanche of data from our homes, driverless cars, smartwatches, and smartphones will enable the

super-platforms (which collect or process the bulk of personal data) to better segment us into smaller groups. As we increasingly rely on our digital personal assistant and other smart technologies, the algorithms will have more opportunities to observe and predict our individual behaviour and learn when they predict wrongly. The more times the algorithms can observe what you and others within your group do under various circumstances; the more it can learn through trial and error what your group's reservation price is under different situations; and, the more it can recalibrate and refine (including shifting you to another group).<sup>7</sup>

### *Shifting the Demand Curve to the Right*

Besides approaching near-perfect price discrimination, behavioural discrimination has a second distinct feature, namely sellers using our personal data to induce us to buy more products or services than we otherwise would have purchased.

Most of us are not rational, self-interested individuals with willpower: we have cognitive biases which diverge from assumed rationality and moments when our willpower is weaker. Firms can exploit these opportunities to induce us to buy things we may not have thought we needed. All of us – at some time – have experienced buyer's remorse. Indeed, policymakers have recognized that some types of sellers – namely those going door-to-door – are particularly good in getting people to buy things they later realize they don't need.<sup>8</sup> Now imagine a salesperson who knows your preferences, income, likes and dislikes, and weaknesses, and personalizes his sales pitch to strike the right emotional appeal. Except, this salesperson will unlikely ring your doorbell. It already is in your home (namely your digital personal assistant or computer) or pocket (your smart phone).

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<sup>7</sup> For example, an increase in the number of searches attempted on a search engine increases the search engine's likelihood of identifying relevant results and predicting consumer preferences. Naturally, the quality improvement attracts additional consumers to that search engine compared to competitor sites. The more users, the larger (and more heterogeneous) the sample size, and the better the search engine can identify relevant responses for both popular and less frequent queries. For more on data-driven network effects, see Maurice E. Stucke & Allen P. Grunes, *Big Data and Competition Policy* (Oxford University Press 2016).

<sup>8</sup> The U.S. Federal Trade Commission's Cooling-Off Rule, for examples, gives you "a 3-day right to cancel a sale made at your home, workplace or dormitory, or at a seller's temporary location, like a hotel or motel room, convention center, fairground or restaurant." <https://www.consumer.ftc.gov/articles/0176-buyers-remorse-when-ftcs-cooling-rule-may-help>.

There are myriad biases for firms to exploit. One U.S. official observed lenders' incentives to exploit biases that lead consumers to over-borrow.<sup>9</sup> Financial providers also "have incentives to charge fees that are less salient for consumers or that take advantage of consumers' errors in predicting their own future product usage--such as late fees, over-the-limit fees, and overdraft fees."<sup>10</sup> Online sellers can add an expensive (albeit inferior) choice, to encourage consumers to opt for a second choice that, whilst being more expensive than the item that the consumer originally intended to purchase, was relatively more attractive than the personalized decoy option. Online firms may use price steering: Depending on the information they collect about consumers, they can restrict the products that are displayed to a particular consumer or vary the order of the listings to prioritise certain products. For example, the travel website Orbitz steered Mac OS X users toward "more expensive hotels in select locations by placing them at higher ranks in search results."<sup>11</sup> Firms can deliberately increase complexity (by adding price and quality parameters) to exploit consumers' difficulty in processing many complex options. Also, consider the fact of imperfect willpower: consumers with limited patience will often pay a higher price. Thus, the more the online site can encourage impulse purchases (such as "scarcity marketing"), the less likely the consumer will comparison shop and search for outside options.

#### *The Durability of Behavioural Discrimination*

Of course, the power to engage in behavioural discrimination at times is limited. A market may emerge in which countermeasures develop for individuals to outsmart price algorithms and trigger discounts or lower prices by migrating between groups or thwarting their segmentation. It will depend on, among other things, the competitors' incentives, including their data advantage over rivals, ability to harvest and process data, economies of scale, and network effects. Here we may see how the four Vs of Big Data - volume, variety, velocity and value - and data-driven network effects can enable, under the right market conditions, big firms to become bigger, until they dominate the market.<sup>12</sup> In this environment, behaviour discrimination may be more durable than one might initially predict.

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<sup>9</sup> Remarks by U.S. Assistant Sec'y for Fin. Institutions Michael S. Barr, Treas. TG-961 (Nov. 18, 2010).

<sup>10</sup> Ibid; see also Max Huffman & Daniel B. Heidtke, Behavioral Exploitation Antitrust in Consumer Subprime Mortgage Lending, 4 Wm. & Mary Pol'y Rev. 77, 78 (2012).

<sup>11</sup> Hannak et al., "Measuring Price Discrimination and Steering on E-Commerce Web Sites" (n 14 above).

<sup>12</sup> Search results, for example, can improve from the variety of personal data on users. If people use other services offered by the search engine company (such as e-

Customer outrage and backlash may also limit the incentive to discriminate. To shroud the discrimination (and lessen the likely consumer outrage), online sellers will likely start with a higher list price, and then selectively vary the level or size of discounts: the less price-sensitive customers may not care as much if others are getting promotional codes, coupons, and so on, as long as the list price does not increase. Online sellers will increasingly offer consumers with a lower reservation price a timely coupon—ostensibly for being a valued customer, a new customer, a returning customer, or a customer who won the discount. The coupon may appear randomly assigned, but only customers with a lower reservation price are targeted.

Another way to frame behavioural discrimination in a palatable manner is to ascribe the pricing deviations to shifting market forces. Few people pay the same price for airfare, hotel rooms, or corporate stock. They accept that the pricing differences are responsive to market changes in supply and demand (dynamic pricing) rather than price discrimination (differential pricing). So, once consumers accept that prices change rapidly, they have lower expectations of price uniformity among competitors. One hotel may be charging a higher price because of its supply of rooms (rather than discriminating against that particular user); rarely will people simultaneously search on the same website for the same room and communicate their findings. Thus, we may not know when pricing is dynamic, discriminatory, or both. Indeed, we cannot easily distinguish a discriminatory price from a dynamic price. A trend therefore may emerge of eliminating list prices.<sup>13</sup> Soon, as with airlines and hotels, pricing will be dynamic—as the price offered yesterday or this morning may differ from that offered today or tomorrow. With coupons added to the mix, a competitive “benchmark” price will disappear, and price and behavioural discrimination eventually may be accepted as the new normal. To the extent that there is a market price, as personalized offerings increase, search costs will also increase for consumers seeking to identify this “true” market price.

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mail, web-browser, texting, mapping, purchasing, etc.), the company, in collecting the variety of personal data, can develop user profiles to better predict individual users’ tastes and interests, and better target users with more relevant organic and sponsored search results. See, also, <https://www.wired.com/2016/11/subtle-ways-digital-assistant-might-manipulate>; M.E. Stucke & A. Ezrachi, *When Competition Fails to Optimize Quality: A Look at Search Engines*, 18 *YALE JOURNAL OF LAW & TECHNOLOGY* 70 (2016).

<sup>13</sup> [http://www.nytimes.com/2016/07/04/business/amazon-is-quietly-eliminating-list-prices.html?smprod=nytcore-iphone&smid=nytcore-iphone-share&\\_r=0](http://www.nytimes.com/2016/07/04/business/amazon-is-quietly-eliminating-list-prices.html?smprod=nytcore-iphone&smid=nytcore-iphone-share&_r=0).

The significant profits from behavioural discrimination will likely entice firms with more users, more personal data, and better algorithms to discriminate. Such firms can profit by consequently improving their self-learning algorithms, by capturing greater value from the data (either through advertising-related services or behavioural discrimination), and by using the profits from the discrimination to further enhance these capabilities, making the whole process self-supporting.

### *The Welfare Effects of Behavioural Discrimination*

So, what is behavioural discrimination's net effect on welfare? Should behavioural discrimination remain outside the realm of competition law? In our presentations to competition officials, lawyers, economists and scholars in the U.S. and E.U., some economists and lawyers were agnostic while others were highly critical of behavioral discrimination. Indeed, debates, at times, broke out among the audience members over the welfare and fairness concerns of behavioral discrimination.

Behavioural discrimination amplifies many of the welfare effects associated with price discrimination. By increasing output, it could increase access, choice and efficiencies, thereby increasing overall welfare.

More often, however, behavioural discrimination would likely reduce overall welfare. In gathering information about our behaviour, desires, and ability to pay, sellers can manipulate our environment to increase overall consumption, without necessarily increasing our welfare. Moreover, behavioural discrimination may blur into actual discrimination due to the limits and costs of refined aggregation. When the algorithm cannot access sufficiently detailed information, consumers will be lumped into groups. If you live in a certain neighbourhood, are a certain age, went to a certain university, or are a member of a particular religion, then the pricing algorithm may place you in a particular category. The seller's algorithm estimates that certain groups are more likely to buy the product and are less sensitive to its price than other groups.

The new paradigm of behavioural discrimination affects not only our pocketbook but our social environment, trust in firms and the marketplace, personal autonomy, privacy and well-being. Once one accounts the consumer perspective, the social welfare perspective, and the limited likelihood of total welfare increasing, behavioural discrimination is likely a toxic combination.

## Conclusion

The Internet, Big Data and Big Analytics -- in reducing entry barriers, search costs, and transaction costs -- can increase the number of sellers; in increasing productive efficiencies, market transparency, and availability of information, they can promote competition.

It is, however, important to note that the current online markets are far from perfect competition. The invisible hand that we rely upon can be pushed aside by the "digitized hand." The digitized hand has the capacity to be selective and generate different levels of competitive pressures on the players. The resulting environment operates with rules different from the ones we assume in the theoretical economic models, and can yield new forms of anticompetitive behavior that reduce our welfare.

As we explore in *Virtual Competition*, the current enforcement toolbox may be limited in effectively deterring some practices, such as algorithm-driven tacit collusion and behavioural discrimination. In addition, the enforcers may find intervention in these instances to be overly challenging.<sup>14</sup> The challenges of virtual competition require us to carefully study the new dynamics of competition and explore means to safeguard our welfare while sustaining a competitive market environment.

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<sup>14</sup> <https://www.theguardian.com/commentisfree/2016/dec/04/how-do-you-throw-book-at-an-algorithm-internet-big-data>

# Uncertainty in EU Technology Regulation: How law making and law enforcing matters

Indra Spiecker genannt Döhmann\*

## A. Introduction

We live in world of uncertainty and risk. One of the reasons for it is the technological development and its consequences. This is particularly true for Information Technology (IT): We do not know where the development of autonomous robots, of ubiquitous computing, of big data evaluations or of industry 4.0 will lead and how much society, economy, democracy or collective decisions as we know them will change.

This uncertainty is not restricted to the technology itself. We do not know the future as such: Where does a new technology lead to? How does it develop? Which problems will arise? Will chances, will risks be fulfilled? Questions like these reflect the sociological and technical-scientific uncertainty. But uncertainty also exists in regard to the addressees of regulation and in regard to the regulators themselves: How to test and monitor? How to evaluate the unknown and the insecure? Shall innovative approaches be furthered or rather the development slowed? How to prevent risks to turn into dangers for humans and environment, for this and for the next generation(s)?

Evolving technologies have always been the goal and the reason for regulation. The fear of unknown risks has had technology regulation center

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Many of the following concepts and thoughts are extracted from the author's forthcoming book „Staatliche Entscheidungen unter Unsicherheit“, Mohr Siebeck, Tübingen 2017 (state decision under conditions of uncertainty).

Due to the nature of this paper, footnotes and references are widely omitted but can be found in the above mentioned book.



around the principle of precaution. This well-known principle can be described as allowing stronger modes of regulation and further infringements of individual rights under conditions of uncertainty than under conditions of certainty/near-certainty: If severe risks are feared from a new technology without clear knowledge about these risks, states may intervene with the further unrestricted development of this technology - even to the amount of forbidding it completely. This is rarely the case, but e.g. in cloning, stem cell research or in preimplantation diagnosis one can observe such complete bans. As a thumb-rule, the precautionary principle allows further reaching infringements the more severe and irreparable damages are considered. However, such considerations do not necessarily rely on scientific evidence - often, the precautionary principle is applied where scientific evidence is non-existent or inconclusive.

The principle of precaution, however, is only one of several means how legal regulation can influence the development of technology. The following paper first shortly establishes the general legal approach to uncertainty (B.). It then explores how technology influences law and how law influences technology in law setting (C.) as well as in law enforcement (D.). It discusses how law and technology can interact in creating an efficient enforcement of law. Conclusion and outlook (E.) follow. It refers in its examples to European law if possible, but will make use of the rich German scientific discussions when analyzing fundamental issues.

The following paper is based on the general assumption that technology and law are two different systems with two different rationalities and two different languages and thus collisions and frictions are inevitable. The system of law functions under the code of lawful versus unlawful, i.e. legal versus illegal while the system of technology functions according to the code of technically possible versus not possible. Thus, we observe law as a normative system and technology as a non-normative system.

## **B. Legal Decisions under Conditions of Uncertainty**

Law and legal science have long ignored uncertainty. To a considerable extent, that still holds true. Court proceedings are heavily occupied with finding facts and establishing them; rulings take a particular factual situation as given. Administrative agencies regulate companies on the basis of assumed probabilities: Whether or not and to which extent an emission assists in air pollution or is consumed is unclear, but the law acts as if the amount and the effect of pollution was set. Regulatory agencies issue rules at market participants in net economies such as energy or telecommunications although it is not certain whether their conduct indeed contributes to market failure. Legislators require producers to generally

refrain from using certain substances under the EU's REACH regulation<sup>1</sup> although it is unclear whether these substances indeed cause health problems.

One of the reasons for this can be seen in the established system of balancing of and the division of power. In order for effective control to take place, in the end it is courts who have to decide whether to judge the present situation - including facts and developments that have become known since the decision of legislation or administration - or whether to base their judgment on the facts as they were known at the time of the original decision. Whether or not the ex ante or the ex post situation matters, is heavily disputed and has been answered quite differently depending on the different legal field. In the first time frame, courts become additional legislators bound by an objective viewpoint to the law; in the second time frame, courts have to let decisions pass that could not be passed under the current status of knowledge. Which time frame is decisive, of course, influences the decision making process as such: Whether or not redress is to be feared becomes an important factor for the decider. This, in the end, makes deciders and courts prone to creating and acting upon a certainty often not present. Additionally, another reason can be directly named. One of the core values of law is the establishment of predictability, of legal certainty and of accountability. Thus, legal decisions must redefine the unknown and construe certainty for its constituents and addressees. So it is immanent that law avoids continuous uncertainty.

The reasons for uncertainty are manifold. Most of them are connected to the lack of knowledge about the future as such<sup>2</sup> or to the lack of secure and certain knowledge. Often, it is unknown how addressees of regulation will act, whether the market will develop in a certain way or whether a substance causes cancer, indeed. Total lack of knowledge and uncertain knowledge are, however, often only divided by a thin line. Missing knowledge can only be described, understood and interpreted if sufficient information is present to detect it. The more this information is precise and conclusive, the more uncertainty can be reconstructed and reduced to a manageable level.

This raises the question of how to deal with uncertainty in general. The most commonly used instrument is that of gathering and processing (new) information. This sounds intuitive: The decider searches for sources of information to identify his missing knowledge, to reformulate existing knowledge and to conclude a picture of the world on which to base her

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<sup>1</sup> 2006/1907/EC.

<sup>2</sup> Uncertainty also exists in regard to past information; this is typically the case in court proceedings where liability for a past incident needs to be established.

decision.<sup>3</sup> Thus, information gathering aims at ending or at least at limiting uncertainty to a degree that future developments are predictable and decision can be based on that prediction.<sup>4</sup>

The process of information gathering opens the legal system to other systems, especially the technological system: Legal decisions need the technological factual basis to ground their normative standards. However, we find little restriction and little guidance for legislation, administration and judicative how to integrate such non-legal knowledge. Why would one statistical value be better than another statistical value to base the prediction about emissions on? It is frequently stated that legal decision makers may not take up the technological assessment directly but have to judge it by themselves even to the extent that they may detach themselves from the technological facts.<sup>5</sup> This, however, leaves ample room for the exact degree of guidance for the legal system by the technological system. Deciding requires, however, more than effective information gathering; it needs integrated and understood information i.e. knowledge. And decisions under conditions of uncertainty need to deal with the fact that there is often not sufficient and/or not certain information, but that the decision has to be taken anyhow e.g. because of time restraints or because of political and legal pressure. If a company develops an energy plant, there is not time enough to wait for similar plants' experiences about the changes in air pollution, ground storage of substances and effects on the environment. These information will not be present in due time. Waiting would violate the rights of the company, but deciding may also violate rights of citizens and neighbors sometime in the future.

When analyzing existing technology regulation law, one finds mostly a procedural approach how to deal and how to control for decisions under uncertainty. Extended rules on how information is gathered, which stakeholders are to be involved, whose interests are legally weighted are typical. The Environmental Impact Assessment Directive<sup>6</sup> requires European member states to integrate an extensive process into their decision making with the major goal of identifying the right amount of information in environmental decisions. We are also familiar with

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<sup>3</sup> For the purposes of this paper it is neglected that information also needs to be understood correctly and integrated into the decision process.

<sup>4</sup> It will only be mentioned in this footnote that the search for new information may also cause new uncertainty by challenging existing facts and convictions.

<sup>5</sup> Cp. *Seidel*, *Privater Sachverstand und staatliche Garantenstellung im Verwaltungsrecht*, 2000; *P. Scholl*, *Der private Sachverständige im Verwaltungsrecht*, 2005; *S. Tönsmeier-Uzuner*, *Expertensysteme in der öffentlichen Verwaltung*, 2000.

<sup>6</sup> 2011/92/EU.

considerable regulation on the gathering of information: It has to be complete, neutral, balanced and include alternative positions to name just the most prominent descriptions.

As examples, this can be observed in two quite different regulatory approaches on the EU level: In chemistry regulation, the REACH regulation sets extensive and demanding rules for information: The entire registration process concentrates on requiring producers and users to detect and share information that would otherwise not be available. In a similar way, the new EU General Data Protection Regulation (GDPR) institutionalizes a risk assessment procedure. It requires companies to inform regulatory authorities about potentially dangerous data processing activities. The rules on how to judge these activities, however, in the face of uncertainty, are general and derive from the same normative standards as are applied for certainty.

This illustrates that there exist few substantive rules for weighing alternative or uncertain information and for judging new technology and its uncertain effects. Legislation formulates goals of regulation, but they in general give very little guidance to the level of restrictedness administration should apply and for what reason. There is no clear concept how to weigh uncertainty and how to act under these conditions.

Thus, obviously, the general approach to decisions under uncertainty is to delegate it to the administrative level and to hand down procedural standards, among them those for the gathering of information. However, we rarely observe standards for weighing uncertain information. It is a most difficult process: Shall it be interpreted towards the risks or towards the chances, shall it be looked at from a worst-case-scenario or rather from a low-risk perspective?

### **C. Law and Technology under Conditions of Uncertainty in Law Making**

It is this question, the legislature is principally confronted with in decisions of uncertainty. And the legislature's prime task is to set a general framework for the individualized decisions of the administration. Thus, the legislature is required to decide this question and thus reduce uncertainty for the administration.<sup>7</sup>

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<sup>7</sup> This process is a very complicated one that cannot be explained further within the restraints of this paper. The division of power between legislation and administration leaves ample room to pass on a certain amount of uncertainty to the level of administration.

It is mainly left to the task of the legislature to balance the rights that stand behind different interpretations. In general, this is the correct approach. However, looking for constitutional guidance, one cannot find clear standards. Individual rights neither request complete protection from technological, economic or environmental risks nor do they allow for unrestricted use of chances.

We do not find much of a procedural approach, either: Legislators in Europe (and the US) have very little constitutional obligations in regard to the collection and processing of information within their legislative framework. This is also due to constitutional settings that follow different goals than potential control of decisions under uncertainty: Independence of parliamentary representatives and the representation of the free will of the sovereign people are not very consistent with restrictions on information gathering and processing.

Thus, decision making under uncertainty remains widely open to the legislators' political interests with very little control possible.<sup>8</sup>

#### **D. Law and Technology under Conditions of Uncertainty in Law Enforcement**

For administration, uncertainty takes place in individual cases, i.e. in enforcement of the legislator's will formulated in the legal norm. Here, uncertainty is often not restricted to technological uncertainty only, but often includes legal uncertainty. Moreso, legal decisions by legislation often create legal uncertainty for the administration.

There are two different legal uncertainty scenarios this paper looks into a bit further from the viewpoint of the interaction between law and technology: Either, in the first case, the legislative approach to uncertainty itself leads to misunderstanding on the side of the addressees with regard to what is expected of them; or, in the second case, the addressees misjudge whether and to what extent rules have to be followed. The uncertainty on the side of the addressees is directly linked to the uncertainty of the administration.

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<sup>8</sup> Germany's Constitutional Court (Bundesverfassungsgericht) has established a duty of the legislation to control for significant changes on the factual basis of decisions under uncertainty (duty to amend), e.g. BVerfGE 56, 54. This, however, is interpreted very lightly, and actual restrictions for the legislation are hard to detect.

In the first case, the normative value of legislation remains unclear in the face of technological changes. The executive has to fill this void without clear guidance on how to interpret technology's advances. This is typical for the friction between the two systems of law and of technology.

Possible is also that multiple interpretations in parallel (independent) administrative institutions exist, for example if several agencies decide on similar cases but do so differently or if addressees have a choice between several agencies. This latter problem then stems from an unclear division of power, competition between institutions' interests and/or restricted capacities of the institutions to learn and integrate other institutions' positions. This allows for strategic reactions by the addressees similar to the concept of forum shopping known well from international law. It may also lead to a race to the bottom how to construct the legislator's will to attract technology companies rather than follow the original goals of the legislation.

For administrative agencies, it is very difficult to handle legal uncertainty by themselves; often they have to wait for courts to establish a clarified and a unified approach to unclear legislation. Legislation's potential reactions to the creation of legal uncertainty include setting clear normative standards in the first place, but also a clear solution to institutional competition: Consolidation measures between different institutions, hierarchy or even the dissolution of institutions help solve this problem.

In REACH, the EU has established one common EU agency (ECHA) supporting the EU-wide authorization procedure for chemicals. This, of course, has a price: One is the loss of informational variety; another is the loss of sovereignty for the member states. And finally, it has impacts on the general culture of the EU. The GDPR chooses a different way: It establishes a complex consolidation procedure between the independent national regulatory agencies. Here, too, downsides lure, among them the amount of time needed for such a complex decision process or the opening of the regulatory process to strategic behavior of the agencies.

A second reason for legal uncertainty in technology regulation can be that addressees misjudge whether and to what extent legal norms have to be followed. This is often the case if enforcement has been lax or if sanctions are low: as compliance is costly, addressees rationally refrain from adhering to the law based on a cost-benefit-analysis.

Behind this reason one can often find a reluctance of regulatory agencies to enforce, e.g. because of unclear legislative rules or because of fear of being overturned by courts. Not to be underestimated is another source of lack of enforcement: the lack of resources of a regulatory agency. This includes not

only manpower and financial resources, but - often underestimated - also the resource of technological knowledge. Often, regulators know considerably less than the regulatory addressees, and thus they refrain from decisions. This holds particularly true in small technology markets with highly specialized knowledge. Here, a “cartel of silence” that excludes regulators can effectively hinder regulatory action.

Potential solutions by the administration itself are, again, difficult to obtain. It is the legislation that can solve or at least diminish these problems. One way can be a “means-to-an-end”/final regulation where the legislator does not describe individualized measures which need highly specialized knowledge for control. Rather, a certain goal is set, and it is left to the addressees to choose fitting instruments to reach it. Administrative law ignores technology in this instrument: enforcement is restricted to the control of the goal reached. This also has the advantage that addressees are left a considerable amount of freedom in the choice of their means. This instrument constitutes, by the way, one of the very few substantive handlings of uncertainty.<sup>9</sup>

A different way would be a regulation of the means how to reach a certain goal, thus requiring addressees to follow an exactly defined process. Such a procedural approach usually requires knowledge of the technology on the side of legislation but even more so on the side of the administration: In order to control whether the process has been followed, the administration needs to make use of specific technology related knowledge. As an example: REACH requires producers and distributors of substances to undergo an exactly defined testing procedure to assure non-carcinogenous effects.

Another solution rarely mentioned would be an integrative approach by technology and law combined. It would require technology to change its code of functioning from the code of “technically possible - technically impossible” to a more normative code of “technically desirable - undesirable”. Thus, technology itself would enforce its new code by itself. If this sounds like an impossible instrument, one should consider that technology has often accepted another discipline’s - normative - code before. It is most prominent in regard to the economic code. Technology develops according to market regimes: A technology without subscribers or consumers is not further invested in, and so it is not developed further - often, until it is forgotten. Also, law has often changed technology’s code

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<sup>9</sup> On the other hand, this does not solve the problem how to set this goal which leads us back into section C: Law and Technology under conditions of uncertainty in Law Making.

before: Illegal practices have gained wide attention and consequently, the technology has mostly not been continued.<sup>10</sup>

That it is feasible can be illustrated by the so-called “privacy-by-design”-approach in information and communications technology which has even been prominently placed in the new EU General Data Protection Regulation (GDPR) e.g. in Art. 24 (1) and Art. 25. Data protection requirements have to be internalized into the development of data processing. The goal is to avoid data protection violations because of the technological setting. Thus, the legal standards influence the technological setting. A famous example of this is the opt-in versus opt-out approach.

### **E. Conclusion and Outlook**

Law and technology operate on different codes. This makes frictions not only likely but inevitable. Technology challenges the law: It creates competitive standards and can even be interpreted to introduce different concepts of normativity. Overall, the immanent dynamics of technology creates a constant need for law to test its normative standards and its instruments in the face of uncertainty. But law also shapes technology, e.g. by permitting or forbidding certain uses thus influencing technology development and the markets for technology.

Any type of law setting for the use of technology is only as effective as its enforcement. However, the effectiveness of enforcement depends on the clarity and the instruments used by legislation. The amount of information and of certainty shape the level of enforcement. However, without effective enforcement the governance function of law remains an empty shell. Uncertainty thus challenges one of the core functions of law.

Legal Solutions can integrate technology, and they can shape technology development. Concepts such as privacy-by-design can even combine both systems to a certain extent. But there will always be a continuous interdependency and friction between the two independent systems of technology and law.

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<sup>10</sup> Here, one can observe the interaction between three different codes: The verdict of law of a certain technology to be forbidden and illegal has closed the market for the technology and thus the technology has vanished.



## *On a need to have basis*

# The innovation principle, the rule of law, and EU regulation of new technologies?

Geert van Calster, Kathleen Garnett, Leonie Reins\*

The “Innovation Principle” is frequently cited in recent EU policy documents. Yet it remains undefined. It has been suggested the principle is not stand alone but rather integrated with EU efforts in areas such as smarter regulation, innovation, and the circular economy. How exactly innovation will twin with these various efforts, will determine how the EU balances technological development and competitiveness, with public interests such as environmental and public health protection.

Our research in this area starts from a simple observation. On the one hand the EU's circular economy efforts, its prioritisation of Limits to Growth etc. imply that it is not because we *can* produce something that we *should*. On the other, it is imperative that the EU remain competitive in a globalized world based on global value chains.

We suggest that one potential answer, which to date has not been considered, may be the adoption of a “public needs analysis” for technological innovations: *Regulating on the basis of whether a new, untested technology is needed*. In regulating new technologies, the EU so far have focussed on addressing what might be public health risks. On a good day, we have also contemplated environmental protection. What though would happen if we were to regulate on a ‘need to have’ basis? Is there a possibility to devise a regulatory regime which weeds out B2C products in

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particular which grant little true advance? Are there examples of needs-based regulation which could guide us in this respect? Can a regulatory regime offer selection without offending the rule of law and equal opportunity?

## 1. The different balls to be juggled

### 1.1 The newest kid on the block: the innovation principle

Innovations often present regulators with challenges they have not yet encountered, particularly with regard to unforeseen risks and harm. This is reflected in the existing body of EU law on regulating innovation, which is currently piecemeal and fragmented. In recent months, the innovation principle has emerged as a key contender for inclusion in the EU Treaties or at the very least for use as an overall principle in the EU's regulatory approach.

Although much has been written on **innovation**, and despite the EC having assigned it its own Twitter account,<sup>1</sup> there is no definitive, legal definition of the word "innovation". For example, in one European Commission ('EC') document innovation is defined as '*change that speeds up and improves the way we conceive, develop, produce and access new products, industrial processes and services. Changes that create more jobs, improve people's lives and build greener and better societies*'.<sup>2</sup> In another paper written by the EC's *European Political Strategy Centre* innovation was recently defined as '*anything new that changes the society adopting it*'.<sup>3</sup>

Of note is that in both papers the definition refers to 'improvement' as well as 'better' societies. This clearly indicates that in the European mind at least, innovation in and of itself is not a policy goal. Only qualified innovation is being pursued: innovation that assists growth, employment, improves peoples' lives and builds greener and better societies.

Those speaking or publishing about innovation generally prefer not to define it. In and of itself this is not necessarily problematic. The

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<sup>1</sup> @EUScienceInnov, having replaced the earlier @innovationunion on 8 November 2016.

<sup>2</sup> European Commission, 'Turning Europe into a true Innovation Union', Memo 10/473 accompanying the Innovation Union Communication, 6 October 2010.

<sup>3</sup> European Political Strategy Centre, 'Opportunity now: Europe's mission to innovate', 5 July 2016, available at [http://ec.europa.eu/epsc/pdf/publications/strategic\\_note\\_issue\\_15.pdf](http://ec.europa.eu/epsc/pdf/publications/strategic_note_issue_15.pdf), last accessed 3 May 2017.

precautionary principle, for instance is not defined at all in the European Treaties, although it is in the accompanying EC documents.

Scholarship, case law and policy documents on an **innovation principle**, on the other hand, are limited due to the relative newness of the proposed principle. This is not to suggest that the concept has not been seriously considered by various stakeholders at the EU level. The innovation principle itself was suggested by the European Risk Forum<sup>4</sup> in 2013 in a policy document presented by twelve (now: 22) CEOs of major multinational companies. The Forum argues that the principle is needed to “provide a new and positive way of ensuring that policy makers fully recognise social and economic needs for both precaution and innovation.”<sup>5</sup> Further, the European Commission, conscious that new technologies based on innovation might present risks to the public interest, has recently coined the idea of Responsible Research and Innovation (RRI).

By way of intermediate conclusion, one sees tentative movements from both industry and policy makers towards shaping a new regulatory approach towards innovation.

## **2. Limits to growth, sustainable materials management and the circular economy**

The European Environment Agency's two reports “Late Lessons from Early Warnings”<sup>6</sup> are a reminder that the introduction of new technologies sometimes can and does go spectacularly wrong. Asbestos,<sup>7</sup> and the use of trans fats in our daily diet<sup>8-9</sup> are just two examples (the former a classic tragedy, the latter a more recent challenge).

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<sup>4</sup> See European Risk Forum, *The Innovation Principle – Overview*, available at [http://www.riskforum.eu/uploads/2/5/7/1/25710097/innovation\\_principle\\_on\\_e\\_pager\\_5\\_march\\_2015.pdf](http://www.riskforum.eu/uploads/2/5/7/1/25710097/innovation_principle_on_e_pager_5_march_2015.pdf), last accessed 3 May 2017.

<sup>5</sup> Ibid.

<sup>6</sup> European Environment Agency, *Late Lessons from early warnings: the precautionary principle 1896-2000*, (Environmental Issue Report No 22/2001), as well as European Environment Agency, *Late lessons from early warnings: science, precaution, innovation*, (European Environment Agency, Report No 1/2013).

<sup>7</sup> European Environment Agency, *Late Lessons from early warnings: the precautionary principle 1896-2000*, (European Issue Report No 22/2001), p 51.

<sup>8</sup> V. A. Vaclavic, E. A. Christian, *Essentials of Food Science*, (USA, Springer, 2014), at 244.

<sup>9</sup> See European Parliament, “Trans Fats – Overview of Recent Developments” March 2016, [http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/577966/EPRS\\_BRI\(2016\)577966\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/577966/EPRS_BRI(2016)577966_EN.pdf) last accessed 1 November 2016.

Much scholarship thus far, has been devoted to risk assessment and the precautionary principle. Yet, the precautionary principle leans heavily on independent, objective scientific findings<sup>10</sup> to determine safety and as David Gee suggests “Despite its presence in a growing body of EU and national legislation and case law, the application of the precautionary principle has been strongly opposed by vested interests who perceive short term economic costs from its use. There is also intellectual resistance from scientists who fail to acknowledge that scientific ignorance and uncertainty, are excessively attached to conventional scientific paradigms, and who wait for very high strengths of evidence before accepting causal links between exposure to stressors and harm.”<sup>11</sup> It is precisely at this juncture that European law is currently blocked and unable to move forward seamlessly.

Further, the continuing cycle of innovation and development arguably clashes heads-on with the (frequently referenced by the EC) Club of Rome’s 1972 ‘Limits to Growth’ which concluded

*If the present growth trends in world population, industrialisation, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity.*

The 1992 *Beyond the Limits* 20-year update of Limits to Growth and the 2004, 30 year update continue to press the case that the earth’s finite resources cannot sustain nations’ search for ever-expanding growth.

The EU has not been idle in the face of global resource scarcity and unsustainability.<sup>12</sup> It has been trying to enhance its ecological resilience and transform itself into a comprehensive and sustainable green society.<sup>13</sup>

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<sup>10</sup> See Article 6 (2) of Regulation 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, [2002] OJ L31/1: “Risk assessment shall be based on the available scientific evidence and undertaken in an independent, objective and transparent manner.”

<sup>11</sup> European Environment Agency, *Late lessons from early warnings: science, precaution, innovation*, (European Environment Agency, Report No 1/2013), p.37.

<sup>12</sup> European Commission, *Roadmap to a Resource Efficient Europe*, COM(2011) 571, at 2.

<sup>13</sup> See for instance EC *Green Paper on Integrated Product Policy*, COM(2001) 68; Decision 1600/2002 laying down the Sixth EAP [2002] OJ L 242/1; Council conclusions on sustainable materials management and sustainable production and consumption, 3061st ENVIRONMENT Council meeting, Doc. 17495/10, 20 December 2010; EC, *Roadmap to a Resource Efficient Europe*, COM(2011) 571; and EC, Decision 1386/2013 on a General Union EAP to 2020 ‘Living well, within the limits

*Sustainable Materials Management* - SUMMA - is one such approach designed to support these goals.<sup>14-15</sup> SUMMA, in effect, requires an entire revisiting of the whole regulatory chain (including innovation). It is not a reaction to industrial processes having gone terribly wrong or, such as in the case of nanotechnology, to a technology of which one believes that it might conceivably carry a number of risks, over and above the many perceived benefits. Rather, it is an opportunity to be embraced right from the very beginning by industry and regulators alike.

In the meantime, SUMMA has been supplemented with the EC's 'Circular Economy' plans. Late 2015, the EC adopted the Circular Economy Package aimed at promoting the transition to a sustainable, low carbon, resource efficient and competitive economy in the European Union.<sup>16</sup> The concept of making the economy 'circular' is very comprehensive. It not only aims at minimizing the environmental impact of the use of materials, but also seeks to preserve resources and to reduce waste throughout the entire life-cycle(s) of a material, while aiming at economic growth and social equity. In this context, the Commission launched a pilot scheme on "Innovation Deals", to "help innovators with promising solutions to environmental issues to navigate regulatory challenges to bringing their ideas to market."<sup>17</sup>

### 3. A needs assessment?

What we currently research in the context of the needs /innovation conundrum is a credible, properly considered "needs" assessment. Unsurprisingly, given the examples of false negatives set out in the European Environment Agency's (EEA) *Late Lessons*,<sup>18</sup> politicians and regulators have devoted most of their energies into assessing whether certain innovations are harmful or not. Much scholarship thus far, has been devoted to risk assessment and the precautionary principle - yet the

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of our planet', 28 December 2013, [2013] OJ L 354/171 (the Seventh Union Environment Action Programme).

<sup>14</sup> OECD, Working Group on Waste Prevention and Recycling, Outcome of the first workshop on SMM, Seoul, 28-30 November 2005.

<sup>15</sup> Available at <http://goo.gl/6DjR7t>, last accessed 3 May 2017.

<sup>16</sup> The Package includes an Action Plan: European Commission, *Closing the loop - An EU action plan for the Circular Economy*, COM(2015) 614.

<sup>17</sup> European Commission, Innovation Deals for a Circular Economy, available at <https://ec.europa.eu/research/innovation-deals/index.cfm>, last accessed 3 May 2017.

<sup>18</sup> European Environment Agency, *Late Lessons from early warnings: the precautionary principle 1896-2000*, (Environmental Issue Report No 22/2001), as well as European Environment Agency, *Late lessons from early warnings: science, precaution, innovation*, (European Environment Agency, Report No 1/2013).

findings of independent scientists are increasingly being challenged and disputed by civil society, NGO's and some scientists themselves.

One way out of this bottle-neck, in cases where the precautionary principle fails, would be to introduce a "needs" assessment. To date regulators have rarely questioned whether certain controversial innovations are needed and by whom? Looking at the EEA's false negatives – i.e. where early warnings were ignored and later led to damage – not all innovations are needed and not all innovations benefit the public good.

Before such a needs test be used in practice – if at all, plenty of decisions on its operation need to be assessed:

- Who or what would or could trigger it?
- Where and when should it be applied: During an Impact Assessment? Prior to the risk assessment? After? The latter is unlikely for if a needs assessment were to be rolled out, efficiency suggests its intervention should take place prior to the market stage of the product.
- What should be the objective criteria for setting such a test?
- How would such a needs test fit in with the EU's Better Regulation programme?

Our core proposition for needs based assessment, is a regulatory regime which weeds out B2C products in particular which grant little true advance. An important consideration in our thinking about a needs assessment is that it will only apply to 'new' or 'novel' products and ditto technologies. Many consumer products in particular, even when further refined, do not need regulatory approval even when their design and performance is updated. A bicycle, say, that is made of lighter steel and therefore performs better, does not need to pass a regulatory approval process. Ditto for a washing machine that now manages to remove certain infectious bacteria. Yet if that lightweight character is a result of nanotechnology-enabled steel qualities, or the sterilisation the result of nano silver particles, the bicycle cq washing machine would be 'new' and consequently regulatory approval should have to be sought.

Needless to stay, a revisit of the concept or indeed definition of 'new' technologies will be part of the analysis.

One solution could be, by way of example, to suggest that only if both commerce as well as the public benefit from a new technology does it pass the "needs" assessment. We would also consider whether, if a need-based assessment on the development side of products were to be impossible, one could develop a model which better disciplines the creation of need (marketing and communication, in particular). These exist in e.g.

the pharmaceuticals sector, and they have of course been tried in the environment sector (mostly through codes of conduct) as well as the health sector (eg regulation of tobacco).

In our mind the biggest challenges to a needs assessment in this context are the following:

### 3.1 Are there examples of needs-based regulation which could guide us in this respect?

We believe there are, albeit that they have not come to full fruition, and neither do they start from a perception of public needs. At first sight, a needs-based assessment would seem to go against our engrained belief that if (in and of itself already a big if) there are no demonstrable adverse effects of a particular product, on human health and /or the environment, a product should be marketable.

REACH, the European Regulation on the registration and authorisation of chemicals, is specifically designed to encourage companies to substitute 'substances of very high concern' (SVHCs): this is a direct response to those substances' impact on human health and /or the environment. Yet the more general overall consequence of REACH is for companies to think twice before they submitted the vast amount of chemicals de facto on the market, to the REACH process. Plenty of chemicals were not so registered and, under the 'no data no market' rule, disappeared from the market.

The mechanism behind this withdrawal from the market therefore is one of economic rationale: will the expense involved in the registration process be worth it, in view of forecast sales. REACH in this respect fulfils a fairly static role: other than in the very existence of the regulatory approval process, there is no direct involvement in the companies' decision tree of seeking authorisation, rather than withdrawal.

This is different in market-based instruments, in particular environmental taxation and tradeable emission rights. The former of course in the current institutional set-up, are the exclusive domain of the Member States. In the latter, the European emissions trading scheme for greenhouse gas-related emissions, is a prominent example (but there are others, in other jurisdictions).

One of the very premises behind a successful market, is that the allowances shrink over time. Depending on the valuation attached by individual companies to the final product of the production process

requiring allowances, companies decide whether or not to discontinue the production line. In this way, too, the regulator outsources the ‘benefits’ assessment to the private operator, but with a more dynamic role in that process. Shrinking the number of available allowances has an immediate impact on industry’s evaluation process.

ETS and REACH in our view are examples of needs assessment imposed by (stronger than ‘nudged’<sup>19</sup> we would suggest) the legislator and /or regulator, but ultimately carried out by industry itself. Industry then translates ‘needs’ as ‘opportunities’ (read: profit margins). If, such as in ETS, the regulatory policy goals coincide with the economic assessment made by industry, the needs ‘v’ profit assessment in our view does not really matter.

What our research looks for however is a wider probe of needs assessment, not just for cherry-picked sectors in which the no data, no market rule has been accepted (famously for instance rejected in the case of the cosmetics sector), or an emissions trading system has been put into place. Inspiration in this respect no doubt can be drawn from e.g. Norway, where by way of example, for GMO’s to be approved, the applicant is required to show that the product contributes towards society as a whole and is sustainable.<sup>20</sup>

### 3.2 Can a regulatory regime offer selection without offending the rule of law and equal opportunity?

‘The rule of law’ is a concept so often uttered, sometimes unashamedly, by lawyers, politicians, the media and crooks alike, that it risks becoming meaningless. Attempts at defining the rule of law are numerous, and they vary widely in their remit, however they all do seem to have one building block in common: and that is precisely *judicial review*. In the sixth Sir David Williams lecture, delivered by the late Lord Bingham of Cornhill, then the United Kingdom’s senior law lord, at Cambridge University, Lord Bingham makes a good attempt at identifying the core of the rule of law, when stating

*The core of the existing principle is, I suggest, that all persons and authorities within the state, whether public or private, should be bound by*

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<sup>19</sup> See e.g. K. Mathis and A. Tor, (eds.) *Nudging – Possibilities, limitations and applications in European law and economics*, Lucerne, Springer, 2016.

<sup>20</sup> G. Kristin Rosendal and Ann Ingeborg Myhr, GMO Assessment in Norway : societal utility and sustainable development, EMBO Reports, Sep 2009 (10) 9. 939-940. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2750045/> last accessed 3 May 2017.



*and entitled to the benefit of laws publicly and prospectively promulgated and publicly administered in the courts.*

He immediately qualifies his own definition, pointing out that not all its elements need be present at all times – for instance administration of the law by the courts may under circumstances be best served privately. Lord Bingham then sets out to define what he called the eight sub-rules of the rule of law.<sup>21</sup>

- 1. the law must be accessible and so far as possible intelligible, clear and predictable*
- 2. questions of legal right and liability should ordinarily be resolved by application of the law and not the exercise of discretion*
- 3. the laws of the land should apply equally to all, save to the extent that objective differences justify differentiation*
- 4. the law must afford adequate protection of fundamental human rights*
- 5. means must be provided for resolving, without prohibitive cost or inordinate delay, bona fide civil disputes which the parties themselves are unable to resolve*
- 6. ministers and public officers at all levels must exercise the powers conferred on them reasonably, in good faith, for the purpose for which the powers were conferred and without exceeding the limits of such powers*
- 7. adjudicative procedures provided by the state should be fair, and*
- 8. the state must comply with its obligations in international law, the law which whether deriving from treaty or international custom and practice governs the conduct of nations.*

If a needs assessment were to be rolled out, bullet-points 1, 2 and 4 in our view would be the most challenging. 1 especially for the issue of predictability; 2 for it challenges us to think of a mechanism of who would be making, or disciplining, the needs assessment; and 4, for freedom of commerce /freedom to conduct a business is a fundamental right (see i.a. Article 16 of the European Charter; albeit one that is immediately qualified).

### 3.3 How can one roll-out needs assessment without endangering 'blue sky research'?

It is important to point out that our research is not a second-guessing of scientific advance. Many important breakthroughs have been inspired by prior, seemingly pointless developments in manufacturing, science and

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<sup>21</sup> See

<https://www.cpl.law.cam.ac.uk/sites/www.law.cam.ac.uk/files/images/www.cpl.law.cam.ac.uk/legacy/Media/THE%20RULE%20OF%20LAW%202006.pdf> last accessed 14 July 2017.

engineering. However at the same time, considerable ‘fundamental’ research is being pushed through in spite of ecological, health and ethical concerns ‘in the name of science’. Precisely how a needs assessment will balance these requirements will be a challenge in which traditional instruments of proportionality will probably not suffice.

### **Conclusion**

Our research is a challenge, but we relish it. The findings of this research will feed into a stream-lined, revised regulatory structure that is compatible with and complimentary to the EU’s, Better Regulation agenda, its Circular Economy objectives and its Responsible Research and Innovation (RRI) strategy. This research will be anchored upon our track record in the regulation of new technologies; regulatory design (agencies and ‘new’ methods of regulation in particular); and our insight, both in scholarship and in practice, into various areas of commercial law.

# The Rule of Law in EU's Innovation Society: Framing technology

Tamara K Hervey\*

## 1 Introduction and Summary

It is often claimed that EU law's approach to novel technologies is framed by notions of the market. In terms of its technical legal status, much of EU law on novel technologies falls within the EU's competence to regulate the internal market. A variant of the 'constitutional asymmetry' argument<sup>1</sup> is often made here: the constitutional centrality to the rule of EU law of market creation and sustaining the internal market inhibits the scope of EU law, and forces the market to be legally framed as the 'rule'. Other values are legally framed as outside EU competence and/or as exceptions to that rule.

Using the examples of medical devices and novel pharmaceuticals regulation, we can see that, on the contrary, other values are also present in the ways in which EU law frames technologies. These values include the constitutional position of human rights; human dignity; and the notion that the EU's market is a particularly safe and particularly ethical market, when considered in global contexts.

This analysis leaves the way open for a critique of the extent to which EU law meets the EU's apparent self-set aims encapsulated in these values.

## 2 The 'standard narrative' – the rule of EU market law

The 'standard narrative' about how EU law frames technology and technological development is very familiar. It describes the relationship between EU law and technology/innovation thus:

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<sup>1</sup> Eg, Scharpf, F.W., 'The asymmetry of European integration, or why the EU cannot be a "social market economy"' (2010) 8(2) *Socio-Economic Review* 211.

The EU often frames technology as a market commodity and innovation as a perspective for growth in the EU economy. Ethical and fundamental rights perspectives remain subsidiary.

The narrative infuses EU policy statements, and drives policy, EU and national budgetary disbursement, soft law, and other governance activities. EU law operates to support and uphold this dominant frame.<sup>2</sup>

The ways in which EU (free movement and competition) law does this are also well-known. Drawing on Polanyi,<sup>3</sup> Fritz Scharpf described the 'constitutional asymmetry' between the EU's internal market and social law. In EU member states, 'economic policy' and 'social policy' enjoy the same constitutional status. But in the EU, economic policy is the rule. The EU's economic policy is embodied in EU laws – laws on monetary and fiscal discipline, fair competition, and – above all – free trade in the internal market. The EU Treaties embody privately enforceable rights which create and sustain free trade within competitive markets. These rules are 'supreme' – that is, applicable in priority over contradictory rules of national law. So long as the relevant areas of national law fall within the scope of EU law, discussion over the appropriate balance between competing interests (for Scharpf, market versus social/employment rights) is subsumed into the legal and institutional structures of EU law, as presently constituted.<sup>4</sup> When the CJEU adopted an expansive approach to the scope of application of key provisions of the EU treaties, such as those on free movement of products and services within EU law, it changed the constitutional settlement. The market became the rule: the social the exception. The EU legislature was (and remains) incapable of redressing this state of affairs. The EU legislature is competent to adopt EU internal market legislation, but not (in general) social legislation. EU law thus inverts the relations between market and society. Rather than the market serving society – with all that entails for law-making and the political arrangements that support lawmaking in democratic societies – EU law sees social relations as embedded within the economic system.

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<sup>2</sup> The idea that the way in which the law 'frames' or 'conceptualises' something is crucial to the way in which the law operates is familiar in legal sociology and policy studies. See, eg Hajer and Laws, 'Ordering through Discourse' in Moran et al (eds) *Oxford Handbook of Public Policy* (OUP 2006).

<sup>3</sup> Polanyi, *The Great Transformation: The Political and Economic Origins of our Time* (republished 2<sup>nd</sup> ed Beacon Press 2002).

<sup>4</sup> See, for instance, for an argument to the effect that to constitutionalise present EU institutional arrangements would be dangerous for solidarity, Grimm, 'Does Europe Need a Constitution?' 1 *ELJ* (1995) 282.

Others have developed similar arguments in different contexts. Gareth Davies, for instance, considers the place of cultural rights in EU law. Davies argues that, in subsuming to itself the question of whether national policies or measures which embody aspects of national culture (for instance, to do with food, or entertainment) are permitted within EU internal market law, the CJEU disrupts constitutional settlements.<sup>5</sup> Chris Newdick and others<sup>6</sup> have argued that when the CJEU held that EU market law applies to individual patients crossing borders to receive health services in hospitals, it threatened the significant 'planification' that goes into hospital provision, and the delicate balance of national social insurance and taxation systems that support that balance. Many human rights lawyers (an early example is Jason Coppel and Aidan O'Neill<sup>7</sup>) and indeed several national constitutional courts consider that the way that EU market law frames human rights as an exception to the rule of the market is a constitutional affront to the position of human rights in European societies and in national constitutions. Human rights – they argue – should not be an exception to the rule of free movement of the factors of production in EU law. The competence of the EU and the scope of EU law should not extend so far as to undermine human rights settlements.

In 2013, Gordon Bache, Mark Flear and I showed how the dominant frame for EU law on new health technologies (particularly pharmaceuticals) is the market.<sup>8</sup> The rationale for EU legislation on new health technologies is typically to create and sustain the internal market, to provide a favourable environment for European industries to market their products and services within the whole of the EU, and to optimize regulatory conditions so that European-based companies can compete effectively in global markets. We see similar narratives about how EU law understands other technological developments.

### **3 A more nuanced narrative – the rule of other values in EU (market) law**

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<sup>5</sup> Davies, 'Internal Market Adjudication and the Quality of Life in Europe' 21 *Columbia Journal of European Law* (2014-15) 289.

<sup>6</sup> Newdick, 'The European Court of Justice, Transnational Health Care, and Social Citizenship - Accidental Death of a Concept?' (2009) 26 *Wisconsin International Law Journal* 845; Glinos, I.A. and Baeten, R., 'A Literature Review of Cross-Border Patient Mobility in the European Union' (Observatoire Social Européen 2006).

<sup>7</sup> Coppel, J. and O'Neill, A., 'The European Court of Justice: Taking Rights Seriously?' (1992) 29 *Common Market Law Review* 669.

<sup>8</sup> Bache, Flear and Hervey, 'The Defining Features of the EU's Approach to Regulating New Health Technologies' in Flear, Farrell, Hervey, Murphy, eds, *European Law and New Health Technologies* (OUP 2013).

Three main legal techniques are used to pursue other values in EU law: scope of application rules; competence rules; and exceptions.

### 3.1 Scope rules

Both medical devices and pharmaceuticals are products where technological change is both driven by market actors and affects markets. Among the resources available to them, market actors have EU law as a potential source to challenge any limitations on their access to markets (that is to say, to patients, or to health systems). Both the legislative rules and the Treaty rules can be interpreted as pro-market and entirely or almost entirely disregarding of other values. The internet is also an important (new) technology here. For instance, the latest in a long line of cases in which an internet pharmacy relied on EU law to challenge regulatory interventions in its access to consumers (patients) was recently decided by the CJEU.<sup>9</sup> Repeat litigators such as DocMorris the internet pharmacy are important actors here.

National competition authorities may use EU competition law to tackle anti-competitive arrangements (cartels or monopolies) in markets for pharmaceuticals or medical devices. The basic aims of EU competition law are to prevent anti-competitive behaviour, and punish it where it occurs. Several prominent EU competition lawyers, for instance Giorgio Monti, suggest that the goals of EU competition law include to 'maximise economic freedom, ... promote national champions ... protect small firms, safeguard cultural values ... and so on'.<sup>10</sup> EU law is also used to promote solidarity within health systems, through *inter alia* securing access to novel health technologies (pharmaceuticals or medical devices) as early as possible for as many patients as possible (hence as cheaply as possible). (It is also possible to argue that EU competition law is also used to support national champions within the relevant industries, or to support European champions in global markets.)

An illustrative example is the way in which EU competition law has been used to tackle market behaviour affecting the pricing of novel medical devices and pharmaceuticals in European markets. Antitrust authorities in France, Italy, Finland, Ireland and Latvia have all relied on EU competition law to break up anti-competitive pricing arrangements which essentially seek to hinder the entry of generic medicines into national health systems, particularly hospitals. In so doing, the rule of EU competition law has been interpreted broadly, in ways that *de facto* promote an aim related to the solidarity values which underpins European health systems.

<sup>9</sup> Case C-148/15 *Deutsche Parkinson Vereinigung*.

<sup>10</sup> Monti, *EU Competition Law* (CUP 2007) p 4.

We can also point to the scope of the Treaty rules on free movement of products. These rules (particularly in interaction with EU legislation) can also be interpreted so as to protect or promote such 'non-market' values, such as the protection of vulnerable consumers. For instance, the interactions between Article 34 TFEU, EU public procurement law, and EU consumer protection law can have this effect. Medical devices sold within the EU fall under the CE system, which seeks to secure a single European market in products which are safe for consumers. The EU Medical Devices legislation harmonises the inspection and certification processes applicable to medical devices sold within the EU. This looks like the standard narrative: EU free movement law being used to secure market access to the detriment of a competing value (patient safety, or perhaps professional judgment). But if a Member State is concerned about the safety of a device, it may withdraw the device from its market, provided it follows the procedure set out in the EU legislation.<sup>11</sup> The result is that the scope of the Treaty provision only imposes a *procedural* obligation on the Member State: if patient/consumer safety is a concern, then that can be pursued, provided that the procedure set by EU legislation for doing so is followed.

### 3.2 Competence rules

There is no doubt at all that much EU legislation on pharmaceuticals and medical devices is driven by values of the internal market. The legal basis for the vast majority of relevant EU legislation is Article 114 TFEU, which gives the EU competence to create and sustain its internal market. A typical expression, from the EU's pharmaceuticals legislation, of the underpinning rationale for EU law regulating new health technologies is

Trade in medicinal products within the [EU] is hindered by disparities between certain national provisions, in particular between provisions relating to medicinal products . . . and such disparities directly affect the functioning of the internal market.<sup>12</sup>

This focus dates back to the oldest EU pharmaceutical legislation from the 1960s. EU regulatory agencies, such as the European Medicines Agency, and also those bodies which support the CE system, all operate within a market frame. The very need for these regulatory systems is justified by the need to secure harmonised arrangements for placing new health technologies on the market. European industries can reach the whole of the EU market, and are thus better equipped to compete on global markets. The EU's competence constrains the scope of EU legislation, and the way that it is interpreted and understood. The way in which the CJEU

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<sup>11</sup> Directive 93/42/EEC, Article 8.

<sup>12</sup> Directive 2001/83/EC, as amended, Recital 4.

interprets the competence of the EU legislature to adopt legislation, and consequently the scope and interpretation of that legislation, implies not simply a market-driven approach. Rather, the idea is articulated that the EU's internal market is an ethical, human-rights compliant market.

We see this idea in many other areas of EU legislation of relevance to technological development: the EU's Data Protection legislation, its Clinical Trials legislation, its legislation on human cells, tissues and organs, and so on. The CJEU articulates a strong ethics of human dignity, drawing on Europe's human rights traditions, as implicit in the settlement which determines the competence of the EU to legislate. Outside of that scope, national settlements on the balance between market and ethics/human rights apply.

Equally, we can see that the EU's internal market legislation also embodies the idea that the EU is a *safe* market. The EU's pharmaceuticals legislation, which requires a marketing authorisation for any new pharmaceutical to be sold in the EU, is the strongest example. The direction of travel of the EU's legislation on medical devices shows a similar cautious and precautionary approach.

### 3.3 Public interest justification exceptions

The EU's market is not an unregulated market. EU law leaves scope for market interventions where justified on the basis of a public interest. The very fact that other public interests are an *exception* and the market is the rule underlines the dominant narrative. The constitutional settlement in each of the EU Member States does not have markets in such a central place in terms of political and economic life. Competing interests, principles and values are articulated through political processes, and enshrined in law. If the system operates with legal hierarchies, market rules are not always superordinate in the hierarchy: often, for instance, human rights are.

The relationship between the rule of the EU's market and the exception of public interests is de facto managed through the application by courts of the principle of proportionality. But proportionality is notoriously a legal principle of significant flexibility. It can range from light touch review, to strict standard oversight. Speaking formally, constitutionally, the CJEU is the court which determines the proportionality *standard* to be applied. But in practice the actual *application* of the proportionality test is in most instances by national courts. So here there is scope for national courts to engage in creative interpretative practice.<sup>13</sup>

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<sup>13</sup> The scope within which such interpretative practice can be exercised is, of course, subject to the danger inherent in invoking an exception, in that if a particular



Public interest justifications have been raised in terms of the application of EU free movement and competition law based on values of solidarity, ethics of consumer/patient protection, human dignity and fundamental human rights, and precautionary approaches to risk. The legal relationship between rule and exception, mediated through the proportionality principle, does not always result in the rule of the market being the decisive factor.

#### **4 A way open for critique – to what extent does EU law meet its self-set values?**

If we accept that EU law is not 'constitutionally encoded' so that its function is above all to create, protect and sustain markets, but that sometimes EU law requires and supports the protection of other values, we can approach a critique of EU law quite differently than if we do not. Novel technologies challenge political settlements, and perforce legal rules that seek to encapsulate those settlements. If we think of EU law as about technocratic rule, not value-driven law making, the logical consequence is that EU competence needs to be tightly constrained, and the EU and its law-making powers must not be enabled to disrupt politically legitimated decisions at national level. That critique of the EU: it certainly has its place.

But the EU's powers *have* increased. The dynamic of EU law has supported encroachment into areas of national life almost certainly unforeseen in the 1950s. We could decry that the EU has powers over the regulation of such matters, and seek to reduce the EU's control (yes, even to the point of leaving the EU). Or we could hold the EU to account for its exercise of power, and the effects of its lawmaking.

If we want to do that latter, our critique will be stronger if we ask whether EU law meets its self-set standards. It's no accident that the Treaty on European Union states that the EU is 'founded on the values of respect for human dignity ... and respect for human rights'.<sup>14</sup> These statements are as much a part of the EU's constitutional encoding as the provisions in the TFEU on free movement of products and free and fair competition, and on the EU's constrained competences in areas outside internal market law. Let

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national court protects values against free movement, they might be found liable in damages for breaching EU law by another national court, following the ruling in Case C-224/01 *Köbler*. However, this danger is relatively remote in practice, given that national courts are likely to be equally sensitive to contextual specificities within their Member State. Thanks to Christina Eckes for encouraging me to think through this point.

<sup>14</sup> Article 1 TEU.

us therefore argue that EU law is encoded to articulate a market that is respectful of human dignity and fundamental human rights; that is precautionary when it comes to risk of harm to consumers; that is respectful of solidarity-based welfare settlements. And let us then hold the EU institutions to account *on the basis of that market* when they make, apply, or interpret EU law. Equally, let us hold national institutions to account when they take decisions that overplay market values, under the 'cover' or excuse of EU law obligations. Rather, let us move debates away from 'EU or national competence' towards the substance of decisions and which values they embody.

### Conclusions

There is much about EU law's approach to novel technologies that is framed and infused by notions of the market. In terms of its technical legal status, much of EU law on novel technologies does fall within the EU's competence to regulate the internal market, and to secure a level playing field for actors within that market, free from anti-competitive and abusive practices of powerful market players. I agree that the constitutional centrality to the rule of EU law of market creation and sustaining the internal market inhibits the scope of EU law, and forces the market to be legally framed as the 'rule'. Other values are legally framed as outside EU competence and/or as exceptions to that rule.

But my considered position is that to argue that EU law is *constitutionally fixed* – so that values other than the market can *never* effectively drive or influence the way that EU law frames social policy, cultural policy, human rights, ethics (or any other competing value) – is an over-statement. It underplays the dynamic potential of law and the contingency and malleability of legal texts. It ignores, for instance, the ways in which legal concepts such as proportionality are interpreted and applied in practice. It ignores the ways in which scope rules of EU law can be drawn, for instance to secure only procedural but not substantive control over nationally determined decisions driven by non-market values. I think a more nuanced position is a better statement of the legal position, and the nature of the rule of EU law in framing technologies.

The standard narrative, if we accept it, means forgetting that EU law can be a force and a site for the socially/culturally/ethically progressive, or at least foregoing the opportunity to develop EU law in that way. Moreover, if we simply accept the standard narrative, we constrain ourselves in the ways in which we might hold the EU to account for values other than market values. We deprive ourselves of deploying the dynamic and malleable potential of legal texts in the ways EU law rules and frames technology.