# LAW AND CS
# IN A CONSTITUTIONAL DEMOCRACY

Mireille Hildebrandt

VIEWPOINT

# Understanding Law and the Rule of Law: A Plea to Augment CS Curricula

By Mireille Hildebrandt

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Comments



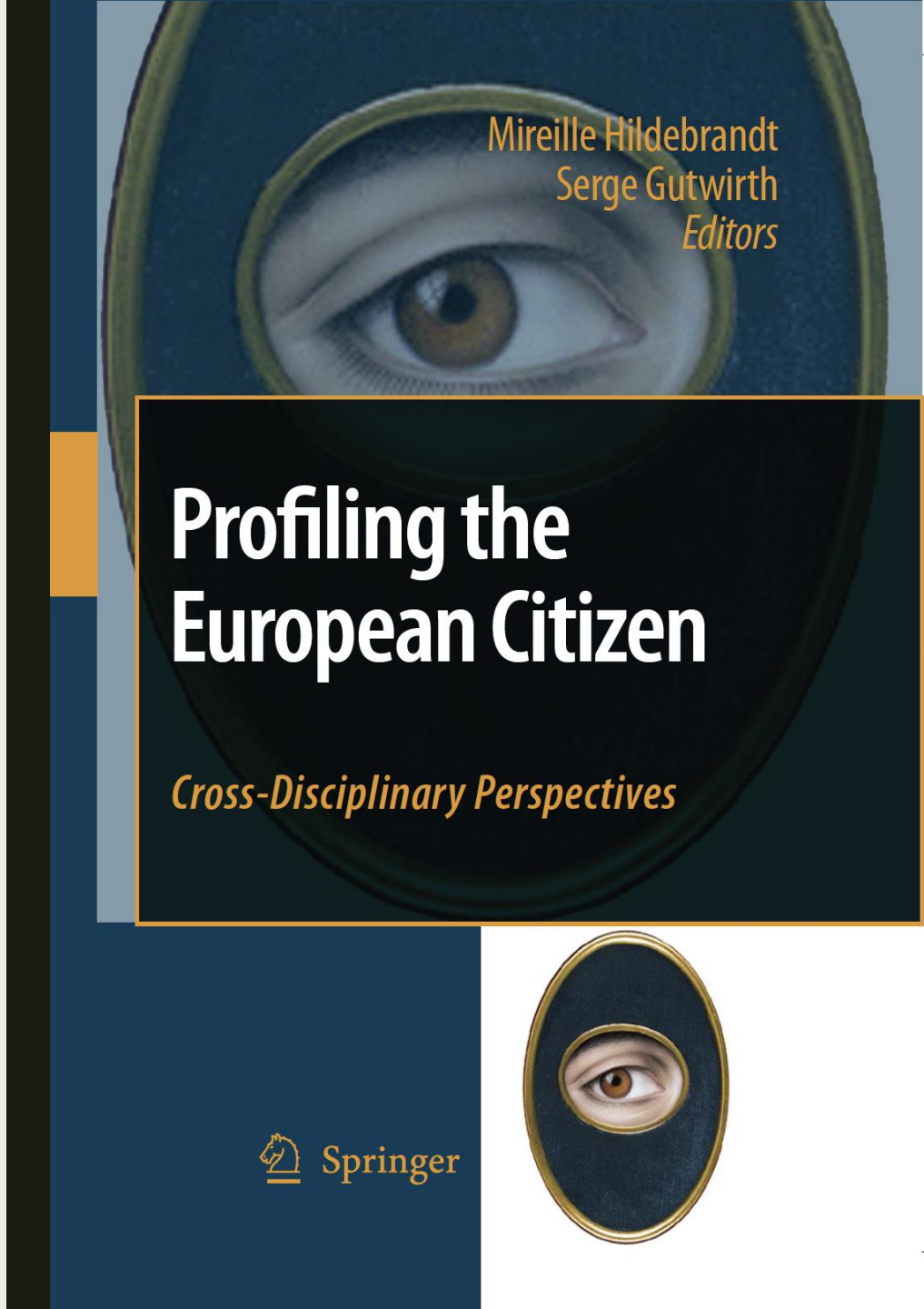

Some people think they are above the law. In a constitutional democracy this cannot be the case. Neither the head of state nor the doctor or the police are above the law. They should all be enabled to do their work, but we do not buy the claim that they could act as they wish. In 18th century Europe we replaced the authoritarian rule *by* law with a rule *of* law, to mitigate uninhibited power, and to ensure that those in power can be held to account in a court of law. Whereas *rule by law is rule by persons* (law as an instrument of control), *rule of law* implies a division of powers where those who enact the rules do not get the last word on their interpretation.[13]

This also refers to the difference between law and ethics

# Profiling the EU citizen (2008):

https://link.springer.com/book/10.1007/978-1-4020-6914-7

- Putting profiling on the agenda
  - *In terms of data mining and KDD*
  - *Impact on privacy and identity*
- Bringing together CS, engineering, legal, political and social science perspectives
- Doing so by way of cross-disciplinary replies
- Relation with prohibition of ADM in DPD



# The End(s) of Law (2015):

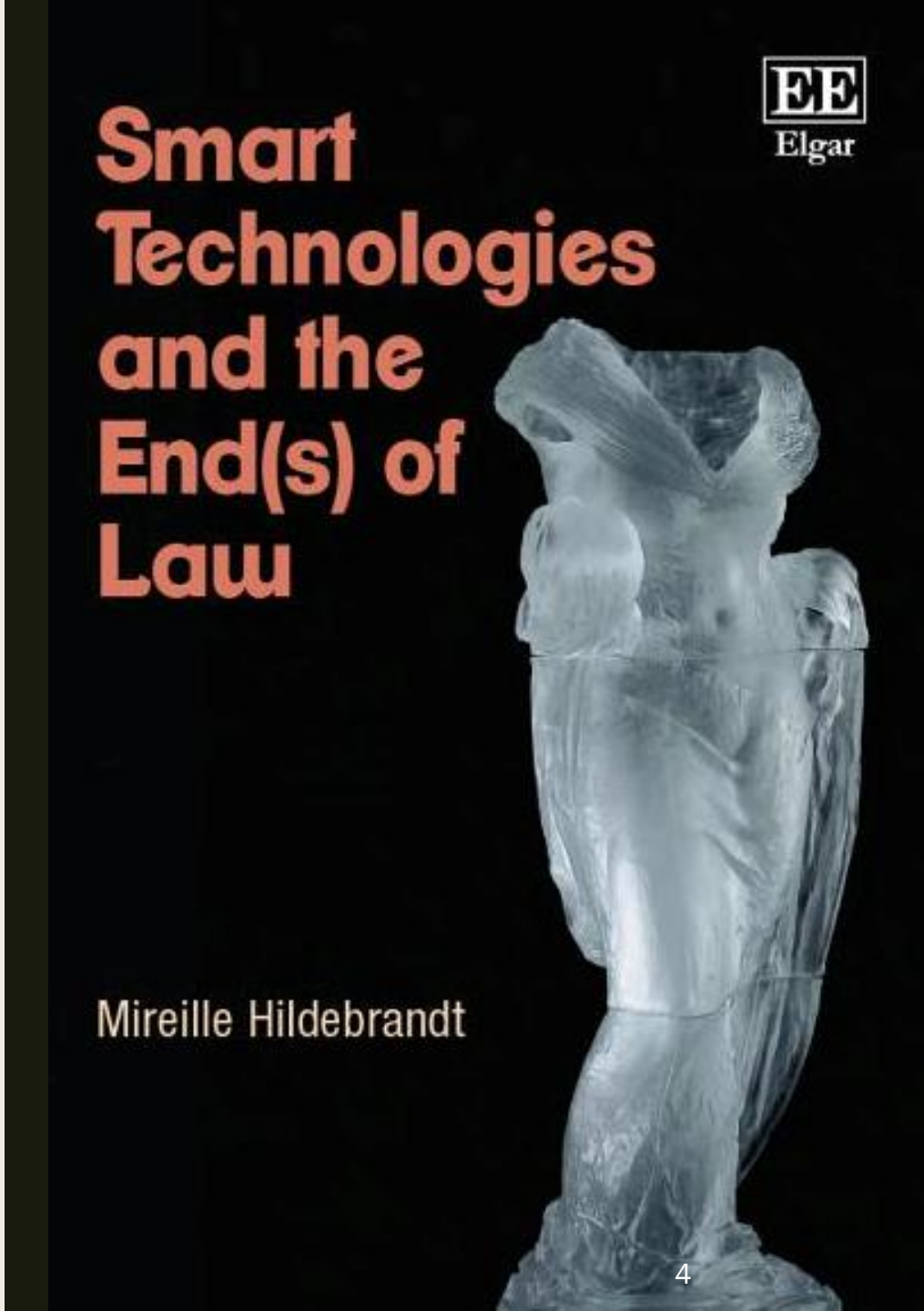
https://www.e-elgar.com/shop/gbp/smart-technologies-and-the-end-s-of-law-9781786430229.html

How do smart technologies

- undermine, reconfigure and overrule the ends of the law in a constitutional democracy,
- jeopardizing law as an instrument of justice, legal certainty and the public good (Radbruch).

A Call to

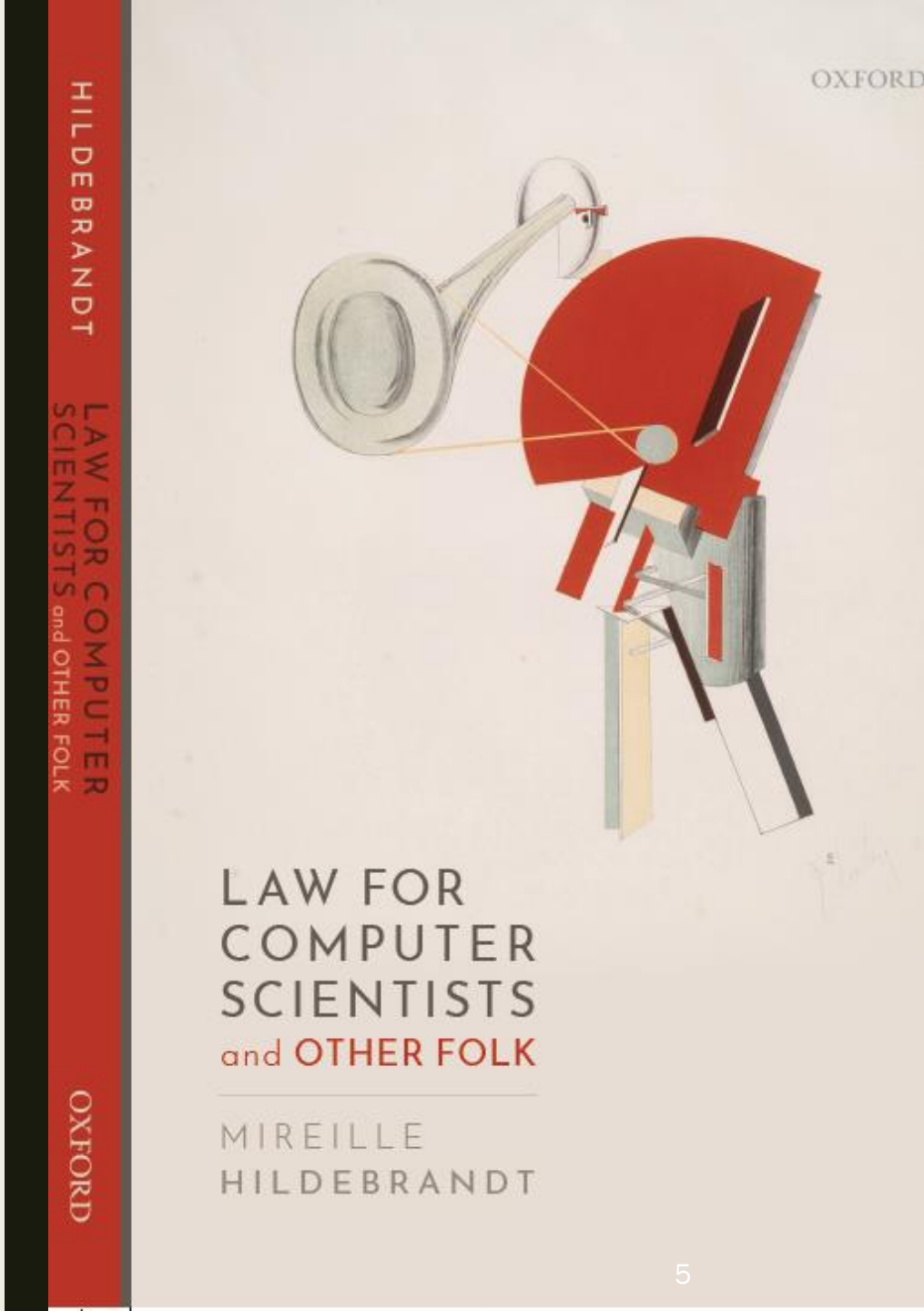
- not to reject smart technologies,
- explaining how further engaging them
- may help reinvent the effective protection of RoL



# Why lawyers should get their copy (2019):

https://fdslive.oup.com/www.oup.com/academic/pdf/openaccess/9780198860884.pdf

- Explaining law to non-lawyers offers potentially new self-understanding to lawyers
- Dedicated focus on legal domains that interact with data- and code-driven systems
- Helping lawyers explain the specifics of legal reasoning
- It is open access



- What constitutional safeguards does text-driven law *afford*?
  - *Note we are not in the realm of technological determinism*
  - *Note that law and technology are not apposed to each other*

- How do these safeguards fare under data- and code-driven law?
  - *what are the affordances of these technological architectures?*

# What's up?

- 9.45 – 10.15 Text-driven law: constitutional law and its constitutive architecture

  Q&A

- 10.15 – 10.45 Data-driven law: predicting or creating future law?

  Q&A

- 10.45 – 11.15 Code-driven law: scaling the past and freezing the future?

  Q&A

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# Text-driven law

**Oral law (societies without the script, face-2-face)**

- limited reach, no differentiation between e.g. law, economy, religion
- performative effect depends on economic and military power of the ‘author’

**Written law (handwritten manuscript and printing press):**

- greater reach both in time and space, disentanglement from other normativities
- performative effect is attributed to the text, new levels of abstraction

# Text-driven law

1. Externalisation of legal norms – the inscription exists independently from whoever enacts them
2. Distantiation between author and addressee of legal norms – affords the idea and practice of legislation, makes interpretation the hallmark of written law
3. Broadening of the scope of application – from local to translocal law
4. Role of lawyers as buffer between ruler and ruled - suzereignty
5. Integration of lawyers into the bureaucratic state: rule by law - sovereignty
6. Internal division of sovereignty: internal division of sovereignty in rule by law

# Text-driven law

The technology of text is constitutive of law-as-we-know-it:

- the open texture and ambiguity ensures its multi-interpretability
- the potential instability of meaning makes legal certainty pivotal:
  - *for law's instrumentality*
  - *For law's equal application (justice)*
- while simultaneously affording law's contestability
  - *instituting the need for an independent 'auditor' who decides the meaning of the law*
  - *neither the legislature nor the administration get to be king of their own decisions*

# Text-driven law

The technology of text forms the constitutive architecture of law-as-we-know-it:

It **affords** the following constitutional safeguards:

- Differentiation of the powers of the state
- Legislature and executive must leave final word on interpretation to the courts

These *affordances* are grounded in text's multi-interpretability and contestability

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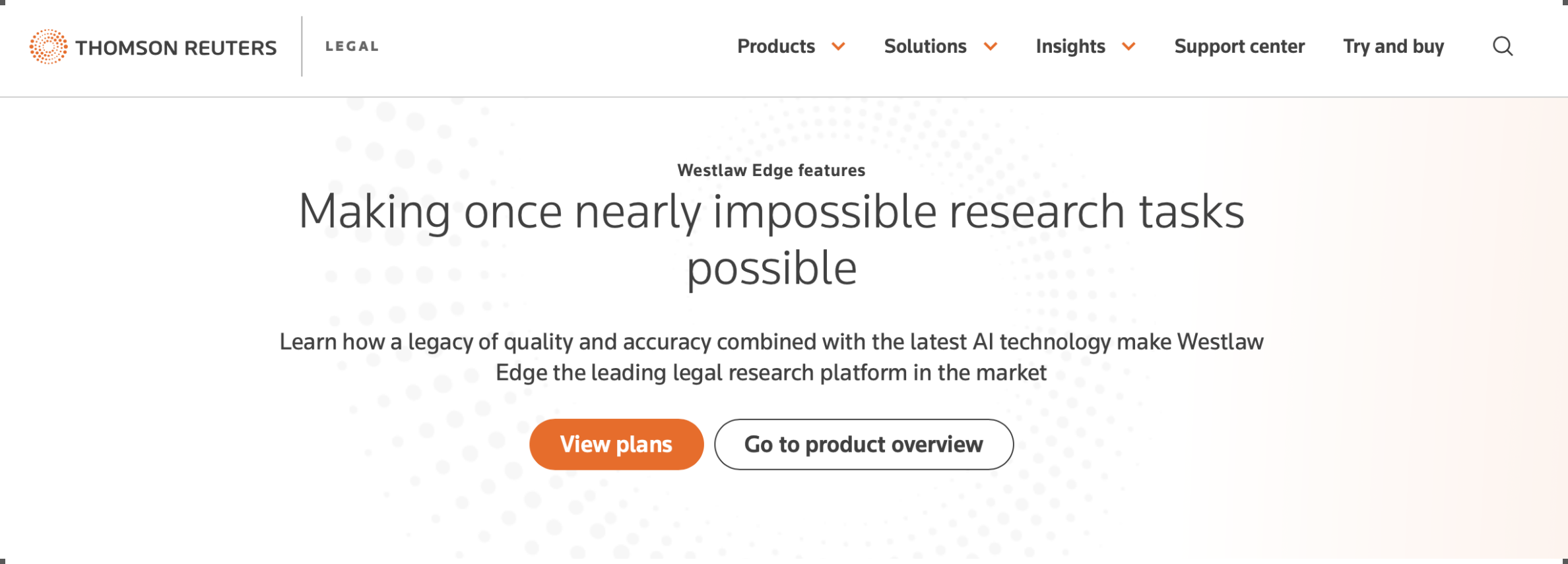
# Data driven 'law'

- This refers to data-driven legal technologies deployed in the context of law:
  - *Based on machine learning, deep learning, natural language processing*
  - *Automating and supposedly enhancing:*
    - Legal search (e.g. Westlaw Edge)
    - Prediction of judgement (e.g. Katz US, Aletras, Medvedeva)
    - e-disclosure, e-evidence, document retrieval, office management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- Litigation Analytics: Powered by the largest collection of federal and state dockets, Litigation Analytics compiles information on judges, courts, damages, attorneys, law firms, and case types to help you build the strongest case strategy across the most practice areas.
- KeyCite Overruling Risk: As an evolution of KeyCite, Overruling Risk warns you when a point of law has been implicitly undermined based on its reliance on an overruled or otherwise invalid prior decision.
- WestSearch Plus: The most advanced legal search engine, powered by artificial intelligence and built on our proprietary editorial enhancements.
- Statutes Compare & Regulations Compare: Streamline your legal research with the click of a button and instantly compare any two versions of a statute or regulation to see exactly what has changed over time.
- Jurisdictional Surveys: Speed up the creation of your survey by retrieving a customized and relevant compilation of laws across all U.S. jurisdictions on any topic.

    - https://legal.thomsonreuters.com/en/products/westlaw-edge/features

# Data driven 'law'

What could possibly go wrong here?

# Data driven 'law'

- Machine learning means:
  - *Select and curate a training data set (legal text corpora)*
  - *Use 'learner algorithms' to detect mathematical patterns in the data*
  - *Tasking the 'learner' with finding patterns that will be relevant for your case*
  - *Predicting relevance for future data,*
    - *based on statistical relationships in past data*
  - *Assuming the distribution of future data*
    - *will be similar to the distribution of historical data*

# Data driven 'law'

Three issues:

- The assumption may be wrong, you lose your case (Westlaw can't afford that)
- The assumption may be wrong, but nobody will notice (law is a complex animal)
- The assumption may be wrong, but will become true (because courts also use Westlaw?)

# Data driven 'law'

Three further issues:

- Data-driven search mistakes statistical correlations for legal arguments?
- Data-driven law enables to game the system (e.g. adversarial ML)?
- Data-driven search reinforces past decisions thus halting the development of law?

# Data driven 'law'

The technology of machine learning informs innovative legal methods (search, prediction):

Does it **afford** the constitutional safeguards of text-driven technologies?

- Differentiation of the powers of the state
  - *These new legal methods afford speed, automation, efficiency*
  - *This may align the judiciary with public administration as an executive power*
- Legislature and executive must leave final word on interpretation to the courts
  - *The interpretation is done by way of mathematical methodologies*
  - *This reduces argumentation to calculation*

These *affordances* are grounded in MLs opacity, dependence on proxies and inherent bias

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# Code driven 'law'

- This refers to code-driven legal technologies deployed in the context of law:
  - *Expressing or translating legislation or regulation in computer code*
  - *Automating and supposedly enhancing:*
    - Legal search
    - Interoperability of law
    - Legal certainty
    - Decision making
    - Execution (in case of blockchain)

# BLOCKCHAIN CODE AS ANTITRUST

*Thibault Schrepel*† *& Vitalik Buterin*††

## ABSTRACT

In this article, we show that blockchain may supplement antitrust law, especially in situations where the rule of law does not fully apply. Against this background, we detail what needs to be done for blockchain and antitrust to achieve greater decentralization, together, from both a technical and legal standpoint.


# Rules as Code (RaC)

RaC is an emerging concept in public sector innovation, which is rethinking a core function of government: rulemaking.

## What is RaC?

RaC proposes to create an official, machine-consumable version of some types of government rules, to exist alongside the existing natural language counterpart. This involves the use and integration of technology, but also a reimagining of the processes and methods currently used to create government rules. In this way, RaC is 'the process of drafting rules in legislation, regulation, and policy in machine-consumable languages (code) so they can be read and used by computers' and thus also represents a new approach to rulemaking (de Sousa, 2019). It is this latter interpretation of RaC that many public sector innovators (from across the world) view as possessing significant potential for governments.


# Rules as Code

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## Abstract

"Rules as Code" is a label adopted by people in governments working on the idea of encoding (or just marking up) legislation while it is being drafted, so that the logic of the resulting legislation can be "read" (and checked) by a computer, to improve the manner in which legislation is produced and the way in which it is available digitally. The idea is currently attracting attention in the legal community, particularly on the question of whether it will lead to automation replacing human interpretation of the law. This note briefly describes Rules as Code, at least as conceived by a legislative drafter. It argues that this conception of Rules as Code does not have the over-reaching ambitions that it may sometimes appear to harbour, and in particular does not trespass into removing key interpretative functions.

RaC

- Marking up legislation: adding metadata to make it machine-consumable
- Legislative drafting: foreseeing potential conflicts, avoiding unintended ambiguity
- Not necessarily intended to automate legal enforcement or ADM by public agencies
- Providing APIs to nevertheless develop programs for execution

Blockchain

- Using public nonpermissioned blockchain to enable smart contracts
  - *Hoping to solve lack of trust between parties from different jurisdictions*
  - *Thanks to the automated execution of the contract*
- Using private permissioned blockchain to enable smart regulation

# Code driven 'law'

What could possibly go wrong here?

# Code driven 'law'

RaC types of technologies afford:

- Collaboration between developers and policy makers during drafting of legislation
- Using declarative logic programming languages to represent the law
- Extending mark-up languages to enable search, interoperability and comparative research
- Enabling machines to understand controlled natural language,
    - Enabling policy makers and lawyers to write law in code by themselves
- Encoding and visualising the logical structure of the law
    - Taking note of defeasible logic and the deontological nature of law
- Providing transparency about legislative intent while
    - Offering explanations in case of automated decision making

# Code driven 'law'

Blockchain types of technologies afford:

- Control over the infrastructure (the constitution) by core developers
- Depending on the consensus mechanisms: high energy usage, attacks
- Fully automated execution despite incorrect input from off-chain resources
- Fully automated execution despite changing circumstances that invalidate the performance, compliance or enforcement

- This type of 'law' requires trust in the software and trust in those developing and maintaining it; it does not afford trustless transactions
- The construction and maintainance of the infrastructure is centralised

# Code driven 'law'

Three issues:

- Displacing the role of interpretation, depending on how it is implemented (smart regulation)
- Major maintenance costs and risks, both in the case of open source and proprietary code
- Affording automation of enforcement (by public administration) or compliance (by corporations)

# Code driven 'law'

Three further issues:

- How does code-driven 'law' deal with interpretation and discretion (who get to decide what and how)?
- Could code-driven 'law' enable new ways to game the system?
- Could code-driven 'law' scale the past while freezing the future by banking on 'framers intent' or even 'developers intent'?

# Code driven 'law'

The technology of programming informs innovative legal methods (RaC, smart regulation):

Does it **afford** the constitutional safeguards of text-driven technologies?

- Differentiation of the powers of the state
  - *These new legal methods afford speed, automation, efficiency*
  - *This may align the legislature with public administration as an executive power*
- Legislature and executive must leave final word on interpretation to the courts
  - *The interpretation may done by those who disambiguate and formalise the law*
  - *This could reduce adversarial argumentation to monological reasoning*

These *affordances* are grounded in the formalisation required by computer code

# What's up?

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# End(s) of Law