

'Introductory Address: Legal Technologies and the Rule of Law'

In this introductory position paper, I will argue that lawyers must come to terms with the advent of a rich variety of legal technologies and define a series of challenges that today's position papers aim to identify and address. Before doing so, I address the question of what it means to discuss the future of computational law and how that relates to the Rule of Law. This, in turn, raises the question of whether there could be something like 'a computational Rule of Law', or whether that would be a bridge too far because the Rule of Law does not lend itself to computation. In that case, how would the integration of computational technologies into legal practice relate to a non-computational Rule of Law? The answer to that question will structure the challenges I see for the uptake of legal technologies, resulting in a research agenda that should enable, guide and restrict the design, deployment and use of legal technologies with an eye to the future of law.

The future of computational law

CRCL23's position papers have been invited under the general heading of 'The Future of Computational Law'. This raises the question of how we should understand computational law and whether such a thing could or should have a future.

Computational law and effect on legal effect

I propose that for something to be called 'computational law', *legal effect must be attributed* to the output of a computational system, for instance when legislation is written in computer code that is given *force of law*, or when a computational prediction of judgments determines the outcome of court cases or even the validity of a contract (based on a clause that stipulates this). This should be distinguished from the deployment of legal technologies by human decision-makers or advisors, for instance using a legal search engine to find relevant case law, drafting legislation in computer code while only attributing legal effect to its natural language version or resolving backlog of court applications by prioritising some with the help of such prediction.¹ In the case of computational law, the legal effect *becomes dependent on* computational systems, whereas in the case of 'mere' deployment of legal technologies, the legal effect depends on a human decision-maker. In the latter case we need to dig a bit deeper to unearth how these technologies *influence* legal effect. Such 'effect on legal effect' may be due, for instance, to automation bias, to the fact that prioritising certain types of cases implies de-prioritising other types of cases (without human intervention) and to massive dependence by courts, law firms, public administration and legislatures on systems that extrapolate inferred patterns from past data or execute software code defined in the past. As explained in our Research Study on Text-Driven Law,² the nature of legal effect is neither logical nor causal, it is what in terms of speech act theory is called a performative effect. The influence of legal technologies on legal effect, however, may be causal (or, in terms of speech act theory, perlocutionary).

¹ On the notion of legal effect as a touchstone for distinguishing different types of legal technologies, see Laurence Diver and others, 'The Typology of Legal Technologies' (COHUBICOL, 2022) <<https://publications.cohubicol.com/typology/>> accessed 9 January 2023, and section 3.4.2 in Laurence Diver and others, 'Research Study on Text-Driven Law' (2023) <<https://publications.cohubicol.com/assets/uploads/cohubicol-research-study-on-text-driven-law-final.pdf>> accessed 5 November 2023.

² See notably chapter 4 in Diver and others, 'Research Study on Text-Driven Law' (n 1).

My guess is that whereas China has invested in computational law in the above sense, giving legal effect to computational legal technologies,³ most ‘Western’ jurisdictions seem to reject this.⁴ Instead, legislators, courts and other legal practitioners will assume that legal technologies are meant to serve as efficient and effective tools to achieve goals set by those who design, deploy or use them, not to replace human decision making. This entails a clear task for computational legal technologies, namely that of enhancing the efficiency and effectiveness of the legal process. This, however, takes for granted that ends are independent of the means to achieve them. Actually, means often reconfigure the ends they are meant to achieve,⁵ for instance when framing the law in terms of efficiency and effectiveness results in prioritizing what is countable over what counts. This puts supposedly quantifiable ‘interests’ or ‘assets’ in the same basket as more qualitative dimensions of the law, like ‘values’ and ‘norms’, while also ignoring the many qualitative decisions that must be taken before legal norms, decisions and relationships can be quantified (i.e. datified and/or codified).⁶ By way of example, we could imagine that drafting legislation in code, even if the output of that code has no legal effect, will affect the drafting and/or the interpretation of the natural language version of the legislation that does have legal effect. Rules as Code is often ‘sold’ based on the idea that drafting or translation of legislation in computer code will provide new insights into potentially contradictory or ambiguous legal norms,⁷ basically advocating that the legislature should learn from – and perhaps restrict itself to – what computer code can handle. This is a clear example of such software having an ‘effect on legal effect’ without itself having force of law.

My conclusion is that computational law (defined as positive law where legal effect is attributed to the output of computational systems) has no future in constitutional democracies, but that its less sensational twin (defined as positive law where legal technologies frame, reconfigure and redefine legal effect) may nevertheless recreate the future of law.

A computational Rule of Law?

Having concluded that computational law has no future in constitutional democracies, it may seem that the question of a computational Rule of Law can be skipped. That would, however, be overly optimistic. To begin with, the Rule of Law should not be understood in terms of either a deductive or an inductive system of abstract legal rules, which would instead refer to a rule by (not of) law. Such a rule by law implies the instrumentalization of the law by whoever enacts or deploys it. Instead, the Rule of Law

³ Changqing Shi, Tania Sourdin and Bin Li, ‘The Smart Court – A New Pathway to Justice in China?’ (2021) 12 4 <<https://iacajournal.org/articles/10.36745/ijca.367>> accessed 5 November 2023. See also (forthcoming 2024): Zhenbin Zuo, ‘Automated Law Enforcement: An Assessment of China’s Social Credit Systems (SCS) Using Interview Evidence from Shanghai’ [2024] *Journal for Cross-Disciplinary Research in Computational Law (CRCL)*. The underpinning assumptions on ‘legal mathematics’ can be found here: Ji Weidong, ‘The Domain of Computational Law’ (2022) 10 *Peking University Law Journal* 109 <<https://doi.org/10.1080/20517483.2023.2171593>> accessed 5 November 2023.

⁴ Even the *Financial Times* finds this highly unlikely, Chris Tart-Roberts, “AI Unlikely to Replace Lawyers but Instead Enhance Their Service” *Financial Times Advisor* <<https://www.ftadviser.com/opinion/2023/08/04/ai-unlikely-to-replace-lawyers-but-instead-enhance-their-service/>> accessed 5 November 2023. Though Susskind admits this could be part of law’s future, see Richard Susskind and Richard Susskind, *Tomorrow’s Lawyers: An Introduction to Your Future* (Third Edition, Oxford University Press 2023), at 174.

⁵ John Dewey, ‘The Logic of Judgments of Practice Chapter 14’ in John Dewey (ed), *Essays in Experimental Logic* (University of Chicago 1916).

⁶ PN Meessen, ‘On Normative Arrows and Comparing Tax Automation Systems’, *Proceedings of the Nineteenth International Conference on Artificial Intelligence and Law* (Association for Computing Machinery 2023) <<https://dl.acm.org/doi/10.1145/3594536.3595160>> accessed 8 November 2023.

⁷ Matthew Waddington, ‘Rules as Code’ (2020) 37 *Law in Context. A Socio-legal Journal* 179 <<https://journals.latrobe.edu.au/index.php/law-in-context/article/view/134>> accessed 2 February 2021.

involves three interrelated elements. The first element concerns the institutionalisation of checks and balances or countervailing powers meant to constrain the powers of the state. The second element involves the contestability of legal decisions in a court of law that is independent from both the legislature and public administration (building on the first element). The third element relates to the fact that the meaning of legal norms is not decided by the legislature that enacted them but by an independent court, to prevent arbitrary decision-making (building on both the first and the second element). This conception of the Rule of Law goes back to Montesquieu's countervailing powers,⁸ and aligns with Waldron's⁹ and Radbruch's¹⁰ understanding of the constitutional role of law in constitutional democracies.

Those not familiar with the idea of the Rule of Law may think of it as an ideal whereby rules enacted by the legislature are executed without exception, either by way of compliance (by legal subjects) or by way of enforcement (by public administration, including police and courts). It seems to me that the latter ideal of the Rule of Law underlies many of the claims made for RaC, prediction of judgement and even legal search, as they appear to be based on the idea that the Rule of Law refers to closing the gap between rules and their execution. From the perspective of legal theory and legal philosophy, this is the inverse of what the Rule of Law stands for; this gap is precisely what protects us against arbitrary decision-making by those in power. Without it, the legislature or public administration would be the judge in their own case, enabling arbitrary decision-making. Under the Rule of Law, the decision on the meaning of the law, that is its application and interpretation, is with an independent third party, being the judiciary. Gapless law thus refers to the Rule by Law and invites computational legalism.¹¹

I will take the argument one step further and argue that both law and the Rule of Law are fundamentally incomputable, as they thrive on human judgement, when deciding the selection, application and thus the interpretation of the relevant law. Judgement, in turn, requires a specific kind of discretion.¹² Discretion, in this context, should not be framed as equivalent with arbitrariness but as a normative space, 'ruled' by the principles implied in the relevant legal domain, by applicable constitutional norms and by the human rights framework, with an eye to the real world issue that is at stake. In his seminal work on the promise of artificial intelligence, computer scientist and philosopher Brian C. Smith explains the difference between calculation and judgment, thus highlighting the limitations of current computing systems.¹³ Philosopher Mazviita Chirimuuta has followed up on that by referring to Kant's explanation of the chasm between a rule and its application,¹⁴ a theme revisited by

⁸ KM Schoenfeld, 'Rex, Lex et Judex: Montesquieu and La Bouche de La Loi Revisited' (2008) 4 *European Constitutional Law Review* 274.

⁹ Jeremy Waldron, 'The Rule of Law' in Edward N Zalta (ed), *The Stanford Encyclopedia of Philosophy* (Summer 2020, Metaphysics Research Lab, Stanford University 2020) <<https://plato.stanford.edu/archives/sum2020/entries/rule-of-law/>> accessed 16 August 2022.

¹⁰ Mireille Hildebrandt, 'Radbruch's Rechtsstaat and Schmitt's Legal Order: Legalism, Legality, and the Institution of Law' (2015) 2 *Critical Analysis of Law* <<http://cal.library.utoronto.ca/index.php/cal/article/view/22514>> accessed 24 March 2015.

¹¹ Laurence Diver, 'Computational Legalism and the Affordance of Delay in Law' (2022) 1 *Journal of Cross-disciplinary Research in Computational Law* <<https://journalcrcl.org/crcl/article/view/3>> accessed 27 November 2022.

¹² M Hildebrandt, 'New Animism in Policing: Re-Animating the Rule of Law?' in Ben Bradford and others (eds), *The SAGE Handbook of Global Policing* (SAGE Publications Ltd 2016); Ronald Dworkin, *Taking Rights Seriously* (Fifth Printing edition, Harvard University Press 1978).

¹³ Brian Cantwell Smith, *The Promise of Artificial Intelligence: Reckoning and Judgment* (The MIT Press 2019).

¹⁴ Mazviita Chirimuuta, 'Rules, Judgment and Mechanisation' (2023) 1 *Journal of Cross-disciplinary Research in Computational Law* <<https://journalcrcl.org/crcl/article/view/22>> accessed 10 November 2023.

the patron saint of rule-following, Wittgenstein, highlighting that rule-following is never only an exercise in logic but a matter of 'doing things with words', partaking in a language game, against the backdrop of a specific life form (context, practice, habitat, culture).¹⁵ This means that the application of any legal norm cannot be 'calculated' as if it concerns a stand-alone rule and should not only be understood in terms of its 'literal meaning' and its place within the relevant legislative framework or common law domain, but also in terms of the dynamic incomputable tenets of constitutional democracy and the Rule of Law.

The challenge then, will be to ensure that the design (by developers), deployment (by lawyers) and use (by those subject to law) of computational legal technologies does not disable the Rule of Law.

Legal protection as the protection of the incomputable self

In other work I have advocated the relational and ecological nature of human agency, thus grounding the need for and the right to privacy. The title of the article was 'privacy as the protection of the incomputable self'¹⁶ and though the right to privacy is a specific instance of such protection, I would now frame this as part of a wider acknowledgement that the protection afforded by law in constitutional democracies will soon come to depend on respect for the incomputable nature of human agency.

This does not entail that counting must be countered indiscriminately. On the contrary, in many instances the protection of our incomputability will come to depend on advanced computations, for instance to uncover hidden patterns of surveillance and/or discrimination. To explain this paradoxical turn, let me assert three insights into the nature of computation in relation to the real world:

1. What matters is not computable
2. It can, however, be made computable
3. This can be done in different ways and this difference makes a difference

What matters is our ability to navigate the real world in real life. In the context of law, this concerns justice, legitimate expectations, instrumentality (not to be confused with instrumentalism) and an environment that is sufficiently stable to enable us to act (which is not possible without reasonable foreseeability). These are all matters 'in flux', prone to changing circumstances and the dynamics of a shared normative understanding. These matters do not follow the laws of mathematics or logic and they do not depend on causality but on the ambiguous, generative and performative nature of human language use. The incomputability that is inherent in such 'flux' does not, however, preclude anyone from turning our language use into 'behavioural data' that affords computational manipulation. The point will be to acknowledge that modelling language-use based on 'language behaviours' as training data implies a translation from real world and real life to necessarily historical data, since we cannot train an algorithm on future data. The same goes for attempts to translate legal norms into computer code; there is no way that the two can be isomorphic as the meaning of natural language (the stuff legal norms are made of) is in constant flux whereas computer code is stuck with the moment it was written.

¹⁵ GEM Anscombe, 'On Brute Facts' (1958) 18 *Analysis* 69 <<https://www.jstor.org/stable/3326788>> accessed 28 March 2021; M Hildebrandt, 'Text-Driven Jurisdiction in Cyberspace' in Micheál Ó Floinn and others (eds), *Transformations in Criminal Jurisdiction: Extraterritoriality and Enforcement* (Hart Publishing 2023).

¹⁶ Mireille Hildebrandt, 'Privacy as Protection of the Incomputable Self: From Agnostic to Agonistic Machine Learning' (2019) 20 *Theoretical Inquiries in Law* <<http://www7.tau.ac.il/ojs/index.php/til/article/view/1622>> accessed 4 February 2019.

Having asserted that, on the one hand, what matters is not computable, while, on the other hand, it can be made computable, should prime us for the third insight: making real world and real life states/events/objects computable can necessarily be done in different ways. Much depends on the ends for which matters are made computable and much depends on the means deployed, admitting that means often reconfigure the ends (as indicated above). We need to detect the many upstream design decisions that impact downstream legal protection, whether affecting the substance of fundamental rights or more generally the attribution of legal effect.

Finally, legal protection in constitutional democracies aims to protect individuals against being overruled, humiliated, disempowered or deceived by big players, such as the state, corporations or tech platforms that are run by corporations while developing state-like functions within their transnational remit.¹⁷ Upon detecting the impact of dedicated design decisions involved in specific types of legal technologies, lawyers and developers should collaborate to investigate such downstream impact in more detail, carefully scrutinising how the claimed functionalities relate to those that can be substantiated, while digging into reasonably foreseeable 'misuse', 'side-effects' or more generally unintended affordances. For this, a Typology of Legal Technologies was developed by a team of lawyers and computer scientists, offering a method and a mindset to evaluate such unintended affordances.¹⁸

Today, a star line-up of leading academics working in the domain of legal technologies, computational law or AI and law, will share their position on the future of this domain. Below, I group the challenges they detect and address in terms of (1) the collaboration between lawyers and developers, (2) ensuring access to justice while automating the law and (3) the transformation of legal education, based on the panels we have foreseen on the first day of CRCL23. The grouping is not meant to be mutually exclusive, all themes run through all the papers and all the sessions. Nevertheless, it is important to make distinctions and table crossovers.

Challenges for the integration of legal technologies into legal practice

1. How should lawyers and developers collaborate? (Lawsky, Kapoor, Henderson & Narayanan)

Lawyers and developers have a different disciplinary background and serve different professional goals. As law defines the architecture of constitutional democracies, and legal technologies aim to serve the law, the collaboration should be based on a proper understanding of law and the Rule of Law.¹⁹ It may be tempting for computer scientists and developers to look at the law as a set of text corpora that offer training data for myriad NLP technologies, or to look at the law as a set of deductive rules that can be expressed in various types of logic and/or programming languages to produce executable code. But law is neither a set of text corpora nor a set of deductive rules. It is both more and less, or rather something entirely different.

¹⁷ On the power of big tech platforms that control global mobile infrastructure Tatiana Duarte, 'Google and Apple Exposure Notifications System: Exposure Notifications or Notified Exposures?' in Agnieszka Gryszczyńska and others (eds), *Privacy Technologies and Policy* (Springer International Publishing 2022).

¹⁸ Diver and others (n 1).

¹⁹ For instance, by unearthing the normative decisions that are inherent in formalisation, as in Sarah Lawsky, 'Form as Formalization' <<http://hdl.handle.net/1811/91835>> accessed 9 November 2023.

On top of that, issues such as data leakage,²⁰ concept drift or a mistaken assumption of isomorphism between legal norms and their computational translation could be hidden under the carpet when initiating a collaboration.

What conditions must be fulfilled for such a collaboration to be genuinely productive, sustaining instead of eroding the Rule of Law? What critical computational training must be given in the academic study of the law and what training would be required in the context of professional legal training? Should developers of legal technologies subscribe to a charter like that of practising lawyers, committing themselves to uphold the integrity of legal practice under the Rule of Law?

2. How to ensure access to justice while automating the law? (Byron, Merigoux, Sartor)

Could it be that some legal norms are algorithmic in and of themselves, inviting automation in a way that enhances legal certainty, contestability and transparency, while such automation would be beneficial for those subject to law in terms of the speed, foreseeability and reliability of correct application?²¹ Should we qualify this as an enhanced access to justice?²²

However, if the automation of the law, whether code- or data-driven or both, *de facto* narrows the gap between a rule and its application, how could this ensure access to justice? To what extent will this restrict access to justice to what a legislature or public administration considers conducive to their understanding of the public interest? If we define access to justice in terms of the ability to contest decisions on legal grounds,²³ we need to resist its redefinition as ‘logging into a platform, filling in some data to then obtaining a supposedly meaningful prediction of how the law applies’. If contestability reduces the efficiency and effectiveness of legal automation, automation will probably reduce the contestability of automated decisions. Would this not be counter to the Rule of Law, which instead requires additional safeguards when scaling the application of the law?

3. Rethinking legal education (Bennett Moses, Bex and Pasquale & Malgieri)

There should be no doubt about the need to prepare both students and practitioners of law for the new methodologies that are being developed and deployed in the context of legal practice.²⁴ This will

²⁰ See the seminal work of Masha Medvedeva, Martijn Wieling and Michel Vols, ‘Rethinking the Field of Automatic Prediction of Court Decisions’ [2022] *Artificial Intelligence and Law* <<https://doi.org/10.1007/s10506-021-09306-3>> accessed 21 March 2022, and more recently Masha Medvedeva and Pauline McBride, ‘Legal Judgment Prediction: If You Are Going to Do It, Do It Right’, *Proceedings of the Natural Legal Language Processing Workshop 2023* (2023). On similar concerns outside the domain of law: Sayash Kapoor and Arvind Narayanan, ‘Leakage and the Reproducibility Crisis in ML-Based Science’ (arXiv, 14 July 2022) <<http://arxiv.org/abs/2207.07048>> accessed 28 August 2022.

²¹ Denis Merigoux, Nicolas Chataing and Jonathan Protzenko, ‘Catala: A Programming Language for the Law’ (2021) 5 *Proceedings of the ACM on Programming Languages* 77:1 <<https://doi.org/10.1145/3473582>> accessed 2 February 2022.

²² Natalie Byrom, ‘Digital Justice: HMCTS Data Strategy and Delivering Access to Justice Report and Recommendations’ (The Legal Education Foundation 2019) <<https://thelegaleducationfoundation.org/articles/the-legal-education-foundation-is-today-publishing-a-blueprint-for-digital-justice>>.

²³ Which raises the question of the role of using legal technologies to predict the argumentation structure of a specific type of case law, as in Piera Santin and others, ‘Argumentation Structure Prediction in CJEU Decisions on Fiscal State Aid’, *Proceedings of the Nineteenth International Conference on Artificial Intelligence and Law* (ACM 2023) <<https://dl.acm.org/doi/10.1145/3594536.3595174>> accessed 9 November 2023.

²⁴ A mere look at the kind of investment made in legal technologies should convince anyone that the study of law must pay keen attention to the importation of new methodologies, see e.g. Miriam Rozen, ‘Six Champions of

require keen attention to the different assumptions that underlie the methodologies of computer science and software engineering, compared to those of law. It will be key to make the various methodologies of the legal sciences and the methods involved in the practice of law more explicit, to prevent the colonisation of law and the study of law by disciplinary practices based on maxims that do not align with those of legal practice and may run counter to the institutionalisation of the Rule of Law.²⁵ Instead of seeing the incomputability of legal norms as a bug that must be repaired, legal scholarship should invest in explicating and demonstrating why and how this incomputability is a feature that safeguards legal protection. However, simultaneously, legal education and professional legal training should prepare law students and legal practitioners for the integration of myriad legal technologies, by demonstrating under what conditions their design and deployment can contribute to legal certainty, justice and to the instrumentality of the law in a way that does not overrule its contestability.²⁶ This should safeguard that 'natural persons' count as human beings in the era of computational law.

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²⁵ Monika Zalnieriute, Lyria Bennett Moses and George Williams, 'The Rule of Law "By Design"?' (2021) 95 *Tulane Law Review* 1063 <<https://www.tulanelawreview.org/pub/volume95/issue5/the-rule-of-law-by-design>> accessed 9 November 2023.

²⁶ For instance by combining narrative and rational theory in the argumentation theory, as in Floris J Bex, 'The Hybrid Theory of Stories and Arguments Applied to the Simonshaven Case' (2020) 12 *Topics in Cognitive Science* 1152. And by switching the burden of proof regarding the legitimacy of legal technologies, as in Gianclaudio Malgieri and Frank Pasquale, 'From Transparency to Justification: Toward Ex Ante Accountability for AI' (3 May 2022) <<https://papers.ssrn.com/abstract=4099657>> accessed 9 November 2023.

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