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Platforms as Law

A speculative theory of coded, interfacial and environmental norms

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Abstract

This paper aims to offer a nomic (legal-spatial-political) concept of platform at the interface between modern legal theory and contemporary speculative philosophy. I argue that the 'code as law' debate has been dominated by 'legal correlationism', a theoretical framework based on the is/ought distinction in which 'code' appears as a technological fact to be regulated by legal norms. I propose an alternative approach via speculative legal theory in order to take code as law in a literal sense. I rework Carl Schmitt's notion of 'nomos' to produce a legal concept of platform that avoids correlationism. I frame both modern law and computational platforms as nomic platforms, though based on different conceptions/experiences of technics, and map out their respective operations. I discern three types of norms active in nomic platforms: coded, interfacial and environmental norms, the first two of which have been often confused, while the third remain largely unknown to legal theory. Finally, I seek to offer a set of concepts meant to render cloud platforms intelligible in nomic terms, especially those of device, application, interface and user, introducing the notion of the transdividual user as the correlate of algorithmic governance. I close by emphasising that, though it is vital to criticise platform nomics and protect the affordances of law-as-we-know-it, those efforts should be supplemented by theoretico-practical speculation about what law may become.

Keywords: computational law, code as law, platforms, algorithmic governance, speculative legal theory

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Introduction

What follows should be considered in the juridico-technological context of what we may call the platformisation of law.[1] That may be understood as a double convergent process: on one hand, the growing role of platforms such as Google, Meta, Amazon or Uber in the regulation of human (as well as nonhuman) conducts;[2] on the other, the progressive adoption of platform-like technologies in the administration of law.[3] I propose to conceive of platformisation not only as a technological and/or economic process, but as a transition in planetary juridico-political order. Design theorist Benjamin Bratton[4] has indicated that line of investigation in arguing that a new kind of 'platform sovereignty' is emerging, displacing the Westphalian system of sovereign states. Alluding to Carl Schmitt's concept of the 'nomos of the Earth',[5] Bratton calls that emerging paradigm of international order a 'nomos of the Cloud'. In a similar sense, this article takes platformisation as a subject for legal theory.

I propose to conceive of platforms as law. My goal is not to determine whether platforms are essentially good or bad, democratic or authoritarian; neither is it to (scientifically) describe what platforms *are*, or to (morally/politically) decide how they *should* be. Rather, I will build a concept of platform from legal-theoretical foundations. That effort is tied to the capacity of posing legal and political problems (e.g. concerning rights or democracy) in relation to platforms — which must be done without assuming that such problems can be simply transposed to a new technological context without due reformulation. It also does not exclude the relevance of theorising platforms from other perspectives.

I will seek to avoid the complementary mistakes of conceiving of platforms as either inherently virtuous or vicious, as well as that of perceiving them as neutral instruments, and therefore only good or bad as a consequence of human decisions. Of course, the present direction of platformisation does seem to point towards dystopian futures. With the algorithmic governance characteristic of cloud platforms, life on Earth seems to be progressively taken as the mere object of calculation, administration and governance, rather than the subject of freedom and rights as the Enlightenment promise would have it. As Achille Mbembe suggests, we may be headed not to the long-postponed realisation of universal human rights but, on the contrary, for a 'becoming-black of the world' — a process in which the condition of mere things, once restricted to the colonial subject, is extended to the whole of the human species.[6] To make things worse, our platform economy seems intrinsically committed to the acceleration of whatever patterns of production and consumption it brings under its sway, with no regard to their ecological sustainability.

1 I draw here from relatively broad and transdisciplinary definitions of platformisation, such as that offered in Thomas Poell, David Nieborg and José van Dijck, 'Platformisation' (2019) 8(4) Internet Policy Review.

2 Victoria Nash and others, 'Public Policy in the Platform Society' (2017) 9(4) Policy & Internet 368; Jonas A Schwarz, 'Platform Logic: An Interdisciplinary Approach to the Platform-Based Economy' (2017) 9(4) Policy & Internet 374.

3 COHUBICOL'S 'Typology of Legal Technologies' lists and makes browsable various projects and resources related to legal technologies, classifying the latter as code-driven and data-driven. Laurence Diver and others, 'Typology of Legal Technologies' (2022) <https://publications.cohubicol.com/typology> accessed 13 January 2022.

4 Benjamin Bratton, *The Stack: On Software and Sovereignty* (MIT Press 2015).

5 Carl Schmitt, *The Nomos of the Earth: In the International Law of the Jus Publicum Europaeum* (Telos Press 2003).

6 Achille Mbembe, 'Afrofuturisme et Devenir-Nègre du Monde' (2014) 136(4) Politique Africaine 121.

Despite such bleak prospects, I would like to insist that the convergence of law and computational technology does not entail any particular destiny. Rather, the current course of platformisation is contingent. Different futures are possible, not because humans are free to do whatever they wish with technology, but because the interplay between humanity, nature and technology has itself always been open-ended. Furthermore, given that the problems we face today (such as the consequences of technological acceleration itself and the looming climate catastrophe) are radically different from any we have faced in the past, arguably the prospect that our modes of self-governance may undergo equally radical change should not be seen as necessarily adverse.

The premise of this legal-theoretical endeavour is that, in times of rapid transformation, legal/political theory must perform not only an analytical/critical role, but also a productive/creative one. That role should be understood as inherently bound up with the devising and development of new institutions and technologies themselves.

This paper's theoretical framework consists in a re-elaboration of concepts and problems of legal theory under the influence of certain movements in contemporary thought that may be loosely grouped under the label of 'speculative theory'.[7] While their reception in the field of law is still relatively rare,[8] their contribution is particularly useful for rethinking the relation between law, technology and ecology, since they tend to question the modern partition of the realms of nature, culture and technics, as well as the consequent rift between human and nonhuman beings.[9] Speculative theory not only helps to reinstate the practice of legal-theoretical speculation (in contrast to analysis and critique), but also encourages that of speculating (in a more prosaic sense) about *what law might become* in a context of sweeping technological and ecological transitions.

In the next section I introduce the search for a legal concept of platform in the context of the 'code as law' debate. I argue that that tradition has been dominated by 'legal correlationism', a theoretical framework based on the is/ought distinction through which 'code' can only appear as a technological fact to be regulated by legal norms. As an alternative approach, I propose a form of *speculative legal theory* in which the key question is no longer how law-as-we-know-it can/should govern new technologies, but *what is law*, after all, in this context of accelerating technological (as well as ecological) transitions. Though it is vital to protect the affordances of law-as-we-know-it from rapid deterioration, I argue that it is at least equally important for legal thought to be able to speculate about the potential affordances of computational law.

7 For overviews of some of those connected movements see Levi R Bryant, Nick Srnicek and Graham Harman (eds), *The Speculative Turn: Continental Materialism and Realism* (Anamnesis, re.press 2011); Pierre Charbonnier, Gildas Salmon and Peter Skafish (eds), *Comparative Metaphysics: Ontology after Anthropology* (Rowman & Littlefield International 2017); Diana H Coole and Samantha Frost (eds), *New Materialisms: Ontology, Agency, and Politics* (Duke University Press 2010); Robin Mackay and Armen Avanessian (eds), *Accelerate: The Accelerationist Reader* (Urbanomic 2014).

8 The reception of 'new materialism' seems the most present, e.g. Margaret Davies, *Law unlimited* (Social justice, Routledge 2017).

9 Particularly influential in this sense is Bruno Latour, *We Have Never Been Modern* (Harvard University Press 1993). See also Eduardo Viveiros de Castro, *The Relative Native: Essays on Indigenous Conceptual Worlds* (HAU Books 2015). Concerning technics, see Yuk Hui, 'On Cosmotechnics: For a Renewed Relation between Technology and Nature in the Anthropocene' (2017) 21(2) Techné: Research in Philosophy and Technology 1.

In the third section I seek to define a nomic concept of platform, i.e. one constructed from the perspective of legal theory, as well as the complementary concept of a platform's environment or ground. Nomic platforms, in my definition, produce a vertically detached plane through the positing of norms and administration of constraints. I explain how modern law can be understood as a nomic platform built on a modern conception and experience of the relation between law as such, technics and nature, and how contemporary cloud platforms differ from it. I distinguish between three types of norms constitutive of nomic platforms: coded, interfacial and environmental (or ground) norms, the first two of which have been often confused in 'code as law' literature, while the third type seems to remain largely unknown to legal theory.

In the fourth section I offer a basic set of concepts meant to render cloud platforms intelligible in nomic terms, especially those of *device*, *application*, *interface* and *user*. Those are reconstructions of technological concepts from the point of view of legal thought and should not be confused with their technical counterparts – though some degree of adherence on technological reality is necessary. I introduce the notion of the *transdividual user* as the mode of existence taken by human-nonhuman populations as the correlate of data-driven platforms.

Taking 'code as law' seriously

The 'code as law' debate or tradition is often considered to have a double origin in the late 1990s with Lawrence Lessig and Joel Reidenberg.[10] This origin corresponds, so to speak, to the discovery of the nomic character of computational code.[11] Lessig noted that computer code is structured like a legal norm, while dispensing with interpretation, and that interfaces regulate, but (in contrast to modern law) do it by immediately determining possible conducts, thus removing the possibility of transgression. Two key metaphors appear in Lessig's work to describe this kind of regulation: computation applies rules 'through a kind of physics' and it regulates conducts in a way similar to that of architecture.[12] Both comparisons illustrate how 'code as law' tends to remove the separation between a norm's abstract validity and its concrete efficacy, collapsing the is/ought distinction that is fundamental to the modern understanding of law.[13]

Lessig's statement that 'code is law', which of course is at the very centre of the tradition in question, certainly derives much of its force from the ontological import it has if taken literally. If computational code *is* law, even though it regulates in a physical/architectural way, this implies that law must be something other than what we think it is. Ultimately, it suggests that *we do not know what law is*.[14] The very concept of law is

[10] Julie E Cohen, 'From Lex Informatica to the Control Revolution' (2022) 36(3) Berkeley Technology Law Journal 1017. See also Lawrence Lessig, *Code: Version 2.0* (2nd ed., Basic Books 2006) and Joel R Reidenberg, 'Lex Informatica: The Formulation of Information Policy Rules through Technology' (1997) 76 Texas Law Review.

[11] In contrast to much discourse surrounding the early internet, notably John P Barlow, 'A declaration of the independence of cyberspace' (1996) <https://www.eff.org/cyberspace-independence>.

[12] Lessig (n 10), p. 82.

[13] As Diver neatly puts it, 'code becomes at once rule and reality, with the normative *ought* collapsed into the descriptive is'. Laurence Diver, 'Digisprudence: The Design of Legitimate Code' (2021) 13(2) Law, Innovation and Technology 325, p. 21.

[14] This discussion may be read as a response to Hildebrandt's keynote at the CRCL22 Conference: Hildebrandt, 'Computational "Law" on Edge' (CRCL 2022: Computational 'Law' on Edge, Vrije Universiteit Brussel, 3 November 2022) <https://www.cohubicol.com/about/conference/2022/programme> accessed 13 January 2023.

put into question not only epistemologically (what are the conditions under which we may know law), pragmatically/sociologically (what is it that counts as law in our shared language games) or interpretively (what does our tradition of interpretive practices determine as law), but ontologically (what *is* law, after all).

Yet, the 'code is law' formula has seldom been taken seriously in the very tradition it contributed to define. Code has mostly been understood (arguably in Lessig's own work) to be 'law' only metaphorically — it is *like* law in some relevant sense, but it is not *really* law.[15] This, I argue, can be understood as a consequence of a central tenet of modern legal theory, to wit, the norm/fact distinction as a methodological presupposition conditioning all possible knowledge of law as such.[16] According to that principle, regulatory technologies can only be conceived of as 'non-normative.'[17] Technology in general and computational code in particular appear then as facts (albeit 'regulative' ones), which is to say as the potential content of legal norms and object of legal regulation. I propose to call this type of approach 'legal correlationism,'[18] since, as long as it is espoused, the central problem of 'code as law' can only be how law could/should regulate code 'law' (which is not truly law) — how to make code 'comply' with law[19] or how to use it as a regulatory mediator at the service of law.[20]

What would the consequences be, though, if we committed to taking the statement that 'code is law' seriously? What if, as legal thinkers/practitioners, we took the notion that code *is law* in a proper, literal sense as a starting point, in spite of it being incompatible with our very concept of law? This would imply bracketing the fact/norm distinction as an epistemological presupposition and entering the metaphysics or ontology of law – the province of *speculative legal theory*, for which the question is no longer how law should regulate technology (or nature), but what law may become (or turn out to be) with the advancement of technological (and ecological) transformations.

From the correlationist point of view, the distinction between 'code as law' and 'law as code' deployed by authors such as Filippi and Hassan[21] is perfectly meaningful: 'law as code', though implemented computationally, is law (literally) by virtue of its source, perhaps its 'pedigree,'[22] whether it is promulgated by a legislative body or contracted by legal subjects, while 'code as law' is 'law' only figuratively. From a speculative perspective, however, the distinction becomes

[15] E.g. '[Lessig's] catchphrase — "code is law" — is shorthand for the subtler idea that code does the work of law, but does it in an architectural way'. See James Grimmelmann, 'Regulation by Software' (2005) 114(7) Yale Law Journal 1719.

[16] This can be paradigmatically observed in Hans Kelsen, *Pure Theory of Law* (University of California Press 1967).

[17] Roger Brownsword, 'In the Year 2061: From Law to Technological Management' (2015) 7(1) Law, Innovation and Technology 1.

[18] Here I allude to Meillassoux's critique of philosophical 'correlationism' — a central theme in 'speculative realism' — without the pretence of being rigorously faithful to his concept. See Quentin Meillassoux, *Après la Finitude: Essai sur la Nécessité de la Contingence* (L'ordre Philosophique, Seuil 2006); Levi R Bryant, 'Correlationism' in Peter Gratton and Paul J Ennis (eds), *The Meillassoux Dictionary* (Edinburgh University Press 2015).

[19] Roger Brownsword, 'Technological Management and the Rule of Law' (2016) 8(1) Law, Innovation and Technology 100.

[20] Reidenberg (n 10); Cohen (n 10).

[21] Primavera de Filippi and Samer Hassan, 'Blockchain Technology as a Regulatory Technology: From Code is Law to Law is Code' [2016] FM. For a discussion of 'smart contracts' as legal contracts, see Max Raskin, 'The Law of Smart Contracts' [2016] SSRN Journal.

[22] Ronald Dworkin, *Taking Rights Seriously* (Harvard University Press 1977). Cf. HLA Hart, *The Concept of Law* (2nd ed., Clarendon 1994).

less significant, since code is taken to be law in the same sense as state law. In this speculative approach, it seems most productive to understand the becoming-law of code and the becoming-code of law as two complementary, convergent sides of a same process — the technological transformation of law as such.[23]

Computational law theorists like Hildebrandt and Diver transcend what I am calling 'legal correlationism' inasmuch as they argue that technological transitions affect law's very mode of existence, to the extent that 'we should not take for granted that law-as-we-know-it will be an "affordance" of the [technologies] of data driven-agency'.[24] They go on to pose legal problems in the (immediate) context of computational technologies themselves, rather than (mediately) as problems for state law.[25] Yet they often seem to condition the legal character of computational law to the emulation of certain affordances of modern law. Computational 'law' is often referred to under scare quotes,[26] not necessarily implying that computational code is *not* law, but suggesting that the question whether it is law or not may be conditioned on its capability to reconstruct certain elements of law-as-we-know-it.[27]

I do not mean to minimise the importance of such protective concerns. It seems indeed advisable to preserve some familiar elements of our juridical apparatus; to maintain, as it were, a degree of 'recalcitrance' in relation to technological acceleration in the domain of law.[28] Nevertheless, I believe those efforts should be *supplemented* by an equally important dimension of speculation about what the alien affordances of computational law might turn out to be, even if those do not resemble anything we would presently understand as law.[29]

Platform nomics

I draw from Bratton's suggestion that platformisation may be meaningfully understood through a version of the concept of nomos.[30] If the way code regulates makes it more similar to physical architecture than to

[23] A comprehensive study of how current technological transitions are reshaping legal institutions has been accomplished by Julie E Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (Oxford University Press 2019).

[24] Mireille Hildebrandt, 'Law as Information in the Era of Data-Driven Agency' (2016) 79(1) The Modern Law Review 1, p. 3. Hildebrandt uses the acronym 'ICTI', meaning 'information and communication technological infrastructure'.

[25] Hildebrandt does this in terms of 'legal protection by design'. See Mireille Hildebrandt, 'Saved by Design?: The Case of Legal Protection by Design' (2017) 11(3) Nanoethics 307. Diver proposes what he calls 'digisprudence', arguing that 'reliance on positive law to achieve "compliance by design" is, by itself, insufficient'. See Laurence Diver, 'Digisprudence: The Design of Legitimate Code' (2021) 13(2) Law, Innovation and Technology 325, p. 2.

[26] Mireille Hildebrandt, 'Data-Driven Prediction of Judgment: Law's New Mode of Existence?' [2019] SSRN Journal, p. 2. Indeed the title of the conference in which this article was presented, as well as Hildebrandt's homonymous keynote both read 'Computational "Law" on Edge' (n 14).

[27] The phrase is very telling, since it expresses at once the familiarity of law's modern mode of existence and how it is cognitively and operationally based on a set of epistemic presuppositions that condition *a priori* what may be known as law.

[28] Antoinette Rouvroy, 'Epilogue: Technological Mediation, and Human Agency as Recalcitrance' in Mireille Hildebrandt and Antoinette Rouvroy (eds), *Law, Human Agency and Autonomic Computing: The Philosophy of Law meets the Philosophy of Technology* (Routledge 2011); Antoinette Rouvroy and Thomas Berns, 'Gouvernementalité Algorithmique et Perspectives d'Émancipation' (2013) 177(1) Réseaux 163.

[29] My theoretical attitude in this respect is partly inspired by the trend within contemporary speculative theory known as 'accelerationism'. See especially Reza Negarestani, 'The Labor of the Inhuman' in Mackay and Avanessian (n 7).

[30] Bratton (n 4).

modern law, the Schmittian concept allows for thinking legally/politically about code architectures. It makes sense that an architecture/design thinker interested in the problem of planetary order would find that concept useful. However, not being primarily a legal thinker, Bratton is not concerned with developing a legal theory of platforms, and neither does he follow the implications of Schmitt's concept of nomos very far.[31] In this section, I will seek to offer a nomic concept of platform by partially/selectively drawing from Schmitt.[32]

Schmitt emphasises that the ancient sense of 'nomos' he claims to recover should not be understood as opposed to *physis*.[33] Consequently, even if computational interfaces regulate conducts 'through a kind of physics' and therefore don't fit the modern concept of law, they may still be thought nomically. The distinctions between norm and fact, validity and efficacy, law and governance/administration are hence not necessarily operative or distributed in the same manner.

Lessig writes that 'a locked door is not a command "do not enter" backed up by the threat of punishment by the state', but 'a physical constraint on the liberty of someone to enter some space.'[34] Schmitt, in contrast, describes the emergence of a nomic order through the development of simple technologies such as doors, fences and bridges: a door (though it does not link an abstract norm to a coercive sanction) concretely expresses a norm according to which one may not pass; a bridge expresses a permission to move across a gap; a fence expresses the limits of a territorial claim.[35] If modern legal thought reduces law to the form of abstract norms, a nomic order is primarily constituted of *concrete norms*, while normative abstraction appears as a secondary development. Even if Lessig is right that code is closer to architecture than to law, nomic thought allows us to think code architectures in legal terms.

By picturing law as instantiated in concrete objects, nomic thought conceives of it not only as necessarily *spatialised* but as inherently *spatialising*: no law but spatially determined; no space but nomically determined.[36] Bratton's use of Schmitt frames platformisation as a reorientation of the spatial order of international law.[37] In contrast to the horizontal division of the surface of the earth into mutually exclusive territories, the nomic concept of platform allows for the vertical overlap of different legal orders. The

[31] Indeed, if his position in relation to Schmitt was already critical in *The Stack*, Bratton has since distanced himself more emphatically from any residual Schmittianism, chiefly through sharp criticism of major contemporary Schmittian Giorgio Agamben. See Benjamin Bratton, *The Revenge of the Real: Politics for a Post-pandemic World* (Verso 2021).

[32] While Schmitt is largely recognised as one of the most important legal/political thinkers of the 20th century, any engagement with his work should not only remind the reader of his unrepentant Nazism and racism, but also take cautious theoretical measures to avoid the pitfalls of a thought that is deeply bound up with its author's politics. To explicitly address those problems here, however, would be to depart too much from this paper's object. Nevertheless, I seek to operate the necessary departures and twists to avoid said pitfalls. For extended discussion of my uses of Schmitt in the interface between law, technology and ecology, see José Antonio Magalhães, 'Tecnomia e Demogramática: Direito e Técnica no Nomos das Plataformas' (Doctoral thesis, Pontifícia Universidade Católica do Rio de Janeiro 2021).

[33] Schmitt, *The Nomos of the Earth* (n 5).

[34] Lessig (n 10), p. 82.

[35] Schmitt, *The Nomos of the Earth* (n 5).

[36] The relation between law and space has been emphasised in the recent movement in speculative legal thought called 'spatial law'. See Andreas Philippopoulos-Mihalopoulos, *Spatial Justice: Body, Lawscape, Atmosphere* (Routledge 2015).

[37] Bratton, *The Stack* (n 4).

monopoly of power over territory and population essential to modern sovereign states is relativised.

Finally, if from the point of view of legal correlationism the conceptual presuppositions of modern law appear as universal criteria for identifying instances of what may be known as law, any concept of nomos is contingent on historical and geographical coordinates constituted and maintained as a concrete order. A concept of law is always inseparable from a spatial 'orientation,' as well as an 'epoch' and — I add, drawing from Hui[38] — a conception and experience of technics. For those reasons, speculative nomics becomes key precisely at those junctures when/where the spatiotemporal coordinates constitutive of a nomic order start to break down under the sway of a crisis, whether political, technological, ecological or else.

For the reasons above, a nomic concept of platform must be at once legal and spatial. This is no problem, since spatiality is inherent to the most basic idea of a platform and, consequently, to most derived concepts, such as architectural, technological, political or economic platforms:[39] a platform is a detached horizontal plane, a plane that differs vertically in relation to another plane, whether determined relatively (another platform) or absolutely (the ground). In nomic platforms, a difference of level is produced in nomic terms, or, more specifically, through the institution of norms and enforcement of constraints. As I will try to show, a nomic concept of platform can meaningfully describe both modern law as a platform and computational platforms as law, exposing both similarities and differences between the two.

[38] Schmitt does not explicitly focus on the relation of nomos and technics, despite the role of technical objects in his narrative of the emergence on nomos. It is, however, possible to draw that relation by reading him alongside Yuk Hui, *The Question Concerning Technology in China: An Essay in Cosmotechnics* (Mono vol 003, Urbanomic 2016). For Schmitt's views on modern law and technology, see 'The Age of Neutralizations and Depoliticizations' in Carl Schmitt, *The Concept of the Political* (Expanded ed., University of Chicago Press 2007).

[39] Cf. Tarleton Gillespie, 'The Politics of 'Platforms'' (2010) 12(3) New Media & Society 347. Gillespie's early intervention is a keystone in academic debate about platforms as political entities. His discussion, however, is largely focused on *discursive* strategies linked to the word 'platform', rather than the concrete dimension of law/politics that is central in nomic thought. When he deals with how platforms themselves exert power, his focus is on the problem of speech moderation. See e.g. Tarleton Gillespie, 'Platforms are not Intermediaries' (2018) 2(2) Georgetown Law Technology Review 198. In this sense, I would argue that my approach differs from his in a way analogous to how the so-called 'speculative turn' differs from the 'linguistic turn' in philosophy.

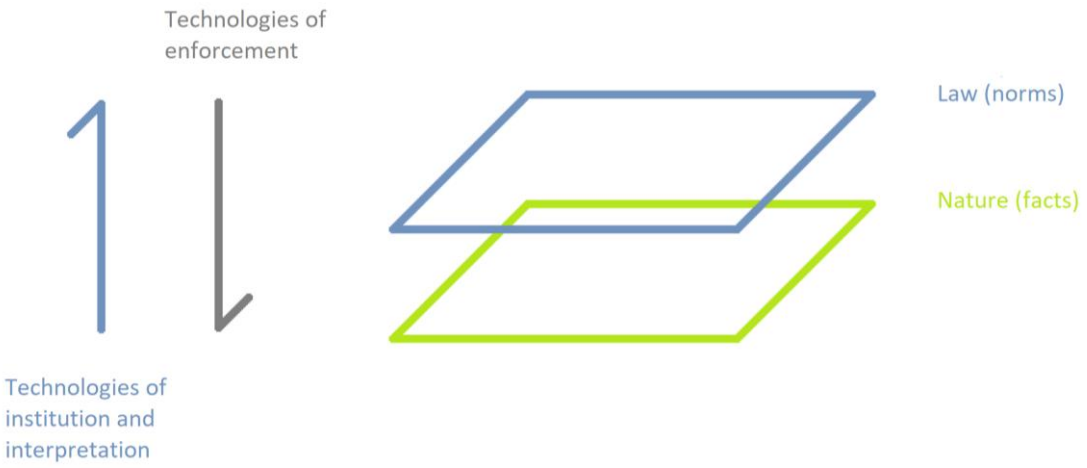

Figure 1. Modern law as a platform

Modern law is, I argue, a nomic platform, though different from cloud platforms in many ways. Late positivists like Kelsen and Hart emphasise that law is not only about commands and prohibitions, but also — and just as importantly — a plane on which normative capabilities (e.g. acquiring property, getting married, promulgating laws) are made available to potential legal persons.[40] The modern legal subject/person should indeed be understood as constituting itself in ascending to that plane.

The modern nomic platform is produced and sustained as such by a complex technological apparatus involving not only the printing press,[41] but also technologies of legal production (e.g. parliaments), administration (state bureaucracy), enforcement (police, correctional facilities) and interpretation (all the shared hermeneutical procedures that provide a degree of technicality, albeit limited to a judge's work). All those modern legal technologies constitute what we might take as the paradigmatic modern nomic device.

Any nomic platform is associated not only to certain legal technologies, but to a conception and an experience of technics that both emanate from those technologies and coagulate in them.[42] In the case of modern law, the corresponding conception of technics tends to be one in which technologies appear as efficacious means through which nature can be made into an instrument for human, normative ends.[43] By positioning technics at the interface between nature and culture, operationalising the parallel series of causality/freedom, efficacy/legitimacy, thing/person and so on, the modern deployment of technics affords law's detachment as a normative platform, as well as

[40] Kelsen (n 16); Hart (n 22). Cf. John Austin, *The Province of Jurisprudence Determined* (Cambridge University Press 1995).

[41] Laurence Diver and others, 'Research Study on Text-driven Law' (2023) <https://publications.cohubicol.com/research-studies/text-driven-law/chapter-1/> accessed 13 January 2023; Hildebrandt, 'Data-Driven Prediction of Judgment' (n 26).

[42] Yuk Hui, 'Cosmotechnics as Cosmopolitics' [2017] E-flux 1; Hui, 'On Cosmotechnics' (n 9); Hui, *The Question Concerning Technology in China* (n 38).

[43] This has been notably argued by Martin Heidegger, *The Question Concerning Technology: And Other Essays* (Garland 1977). In a similar but broader sense see Robert C Scharff and Val Dusek, 'The Historical Background: Introduction' in Robert C Scharff and Val Dusek (eds), *Philosophy of Technology: The Technological Condition. An Anthology* (Wiley Blackwell 2014).

its efficacious implementation on the factual plane of nature.

The plane of law is produced and maintained as distinct from that of nature through techniques of institution and interpretation largely based on natural language, writing and the printing press. This has led Hildebrandt to define modern law as 'text-driven law' in contrast to 'code-driven' and 'data-driven' computational law.[44] Still, I would argue that, for as long as abstract norms have existed, law has always been, in a fundamental sense, code-driven. Since the earliest examples of legal codes, norms were expressed in the form of simple 'if, then' algorithms, in contrast to the narrative character of mythical law. Legal codes usually seek to avoid ambiguity, making law as unproblematically applicable as possible.[45] From the development of good-enough (though imperfect) technologies of coding and decoding derives the possibility — fictional as it may be — of conceiving of a legal order as a structured system of 'oughts'.

While techniques of institution and interpretation warrant, as it were, transit from the plane of facts to that of norms, the opposite route is operated through technologies of implementation such as policing and correctional techniques. Those technologies provide abstract legal norms with the coercive efficacy without which they could not be known as law.[46] They link the (normative) platform back to the (natural) ground from which it had been separated, consolidating a disjunctive synthesis.

In Schmitt's nomos of fences and bridges, legal norms are *concrete and uncoded*. That kind of law is 'of the earth' since there is no (or minimal) detachment between the plane of lived experience and that of law. Law is not (or is minimally) abstracted from the very territory and form of life that it governs. In modern law, by contrast, norms are *abstract and coded*. Coding through language and text make it possible to institute norms as general, abstract 'oughts', while modern technologies of interpretation and enforcement bridge the gap between general norms and particular facts. Finally, in the 'nomos of the cloud', law becomes *concrete and coded*. Norms are interfacially embedded in technical objects, but those interfaces are produced through the implementation of coded norms, which abstract them from any fixed spatial location.

A legal theory of computational platforms must, therefore, distinguish between two types of norms: 1) *coded norms* or *programs* and 2) *interfacial norms*. The first are expressed through computer languages. They are ineffective in themselves, since their efficacy depends on their implementation by a computational device. Interfacial norms, in turn, both enable and constrain conducts immediately at the level of the platform. They are, however, the *mediate* product of the implementation of coded norms. The difference and relation between those two types of norms define computational platforms. To affirm that code regulates conducts 'immediately', as is common in the 'code as law' literature, seems thus to elide an important distinction.

[44] Hildebrandt, 'Data-Driven Prediction of Judgment' (n 26).

[45] There are, of course, exceptions to this rule, and Hildebrandt importantly points out that the interpretive character of text-driven law has made it possible for some of its main affordances to be developed, such as values and principles. Mireille Hildebrandt, 'Privacy as Protection of the Incomputable Self: From Agnostic to Agonistic Machine Learning' (2019) 20(1) Theoretical Inquiries in Law 83. See also Laurence Diver, 'Computational Legalism and the Affordance of Delay in Law' (2020) 1(1) Journal of Cross-Disciplinary Research in Computational Law.

[46] Kelsen (n 16).

Finally, while coded and interfacial norms are constitutive of computational or code-driven platforms in general, there is a third kind of norms that is key when it comes to data-driven platforms,[47] which establish a recursive relation with their environment through algorithmic governance.[48] I propose to call them *environmental norms* or *ground norms* since, rather than constituting part of a platform's nomic architecture, those norms are *mined* from the platform's environment/ground.[49]

The operation of algorithmic governance may be divided into three phases: 1) the massive acquisition of data; 2) the extraction of a diagram of statistical correlations from those data and 3) the use of the resulting diagram in order to act effectively upon users' conducts.[50] The first phase is a matter of sensing. It draws from the ubiquity of user interfaces resulting from the proliferation of mobile devices and technical developments such as the 'internet of things', 'smart cities', and augmented and virtual reality to produce massive amounts of data from the platform's environment/ground. The second phase corresponds to the drawing of statistical correlations based on the accumulated data, typically through technologies of machine learning and (so-called) artificial intelligence. This results in a diagram expressing virtualities of the platform's environment.[51] Finally, as a third phase, algorithmic governance platforms draw from that diagram to effectively act on their users' actions, modulating the actualisation (or not) of potential conducts in the platform's environment.

The norms immediately relevant here are neither abstract norms expressed through code, nor concrete norms impressed on interfaces; they are embedded either in actual or virtual (potential) uses in a milieu. For example, before Uber, the conduct of paying for car rides existed in societies both actually (e.g. taxi rides) and virtually. Uber emerges by both overtaking part of the rides previously done by taxis and actualising potential rides that would not otherwise happen. The potential for dancing in countless ways has always existed in human bodies, but a specific kind of dance

47 Drawing from Hildebrandt, I define code-driven platforms as platforms that constitute themselves as such through the use of computational code, and data-driven platforms as those characterised by the use of 'big data' and machine learning techniques. Mireille Hildebrandt, *Law for Computer Scientists and Other Folk* (Oxford University Press 2020). Note that my conceptions of 'code-driven law' and 'data-driven law' may be more expansive/speculative than Hildebrandt's, as she uses those concepts to discuss legal technologies more directly linked to law-as-we-know-it, such as machine-applicable law and algorithmic prediction of legal judgment.

48 John Danaher and others, 'Algorithmic Governance: Developing a Research Agenda through the Power of Collective Intelligence' (2017) 4(2) Big Data & Society 205395171772655; Christian Katzenbach and Lena Ulbricht, 'Algorithmic governance' (2019) 8(4) Internet Policy Review; Ignas Kalpokas, *Algorithmic Governance: Politics and Law in the Post-Human Era* (Palgrave Pivot 2019); Rouvroy and Berns (n 28); Antoinette Rouvroy and Bernard Stiegler, 'Le Régime de Vérité Numérique' [2015] socio 113; Karen Yeung, 'Algorithmic Regulation: A Critical Interrogation' (2018) 12(4) Regulation & Governance 505; Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford University Press 2019).

49 I refer to a platform's 'environment' or 'ground' interchangeably, even though the connotations of those two words are different, because platforms take their environment *as ground*. While the expression 'environmental norms' suggests ecological concerns, 'ground norms' plays with/off the tension between Kelsen's *Grundnorm* and Schmitt's 'nomos of the Earth'.

50 Rouvroy and Berns (n 28).

51 Manuel DeLanda, 'Deleuze, Diagrams, and the Genesis of Form' [1988] ANY; Jakub Zdebik, *Deleuze and the Diagram: Aesthetic Threads in Visual Organization* (Continuum 2012). Diagrams express virtualities, i.e. 'potentials', or that which is *to come* (which may or may not come to be). Especially, the virtual should not be equated with the digital or contrasted to the real. Gilles Deleuze, *Difference and Repetition* (Continuum 2001); Manuel DeLanda, *Intensive Science and Virtual Philosophy* (Bloomsbury Academic 2013).

began to be actualised much more frequently with the advent of TikTok, and so on.

Note that, in contrast to modern law, here the difference between platform and ground is not operated through the fact/norm bifurcation. On one hand, the coded and interfacial norms that constitute a platform constrain conducts as 'a kind of physics' so that platform devices, though normative, are also akin to nature. On the other, environmental norms are extracted from the platform's environment — they are 'from the ground', in a Schmittian sense, even though they are (quite unschmittianly) unearthed from their original location.

and discouraging aberrant ones) in the sociotechnical milieu considered *as a whole*.[53] Rather, algorithmic governance makes it possible to modulate singular conducts according to singular norms, which allows for the affirmation of difference.[54]

At this point, it may already be clear that cloud nomics is irreducible to the Schmittian 'nomos of the Earth', which is strongly tied to the drawing of fixed spatial borders, locality, homogeneity and exclusivity. Ground norms can be considered 'Schmittian' in that they exist virtually/intensively as an 'inner measure' within the environment/ground, even before they are actualised and coagulated in artifacts (whether crops

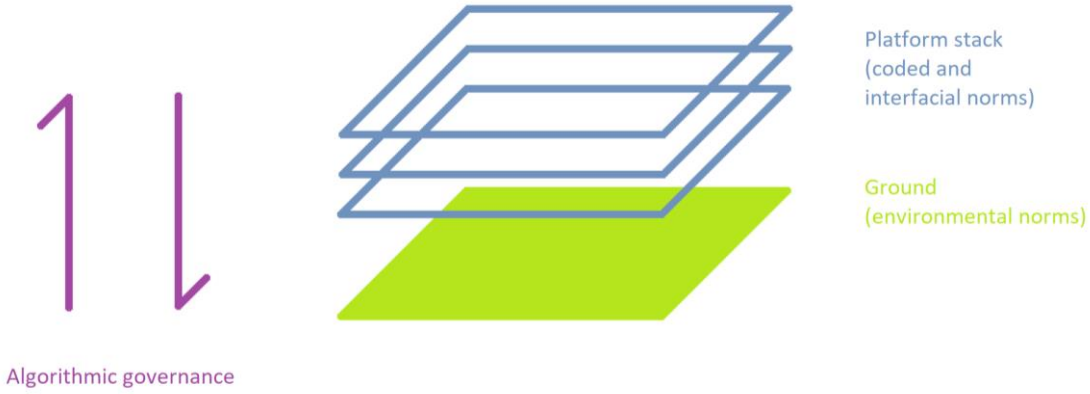

Figure 2. Cloud platforms as law

Regulation through environmental norms may be called '*modulation*', in contrast to the *application* of coded norms and *norming/moulding* through interfacial norms.[52] It differs, however, from the '*normalisation*' that was characteristic of modern governmentality in that algorithmic governance does not require homogenising conducts (by instigating 'normal' ones

or user interfaces) as concrete/interfacial norms.[55] However, inasmuch as the Schmittian concept implies the establishment of a localised order corresponding closely to an 'authentic' form of life and the drawing of borders, cloud nomics departs from Schmitt. Here Deleuze and Guattari's reworking of nomos becomes much more pertinent, which considers

[52] Gilles Deleuze, 'Postscript on the Societies of Control' (1992) 59 October 3.

[53] Michel Foucault, *Sécurité, Territoire, Population: Cours au Collège de France (1977-1978)* (2016).

[54] As a result, data-driven platforms tend to implement 'precisely tailored directives specifying exactly what is permissible in every unique situation'. Anthony J Casey and Anthony Niblett, 'Self-driving laws' (2016) 66(4) University of Toronto Law Journal 429, 430.

[55] Schmitt, *The Nomos of the Earth* (n 5), p. 42.

it as primarily linked not to the striation of space characteristic of sedentary agriculture, but to the distribution of animal singularities on a smooth space associated to nomadic grazing.[56] Indeed, Foucault argues that pastoral power, which is not exerted on a fixed territory by a transcendent authority, but on a moving population by an immanent caretaker, and which does not govern the general or the particular, but at once to the multiple and the singular, is where one should look for the origins of what he calls 'governmentality'.[57]

Applications, interfaces and users

In this section, I will seek to construct a basic set of nomic concepts corresponding to the particularities of cloud platforms, and therefore relatively alien to modern legal thought. Despite being obviously analogous to the technological concepts with which they share their names, they should not be confused with them. They are rather reconstructions of those technological concepts through the conceptual materials of legal theory, with the aim of making it possible to nomically analyse cloud platforms.

Code-driven platforms may be conceived of as nomic devices constituted of a double articulation connecting, on one hand, coded norms as a form of expression, corresponding to 'software', and, on the other, organised matters as a form of content, or 'hardware'.[58] Modern law too is a device in this sense. Its 'software' consists in 'oughts' coded through natural language, and its 'hardware' in an assemblage including recording and archiving technologies, courts and prisons, guns and vehicles, as well as, more recently, computational technologies – though the latter already signal the becoming-computational of law. Through the norm/fact binary, modern law seeks to emancipate its expression from its content in a way that differs from the operation of code-driven platforms.

The hardware dimension of computational platforms emerges from a complex material process of planetary scale, involving the extraction and transportation of various mineral and energy resources, the global distribution of labour and countless other elements.[59] In the case of data-driven platforms, device hardware should not be understood only at the level of individual/localised objects such as personal computers, mobile devices and 'smart' appliances, but also of the distributed networks that they form through the internet.[60] The organisation of hardware as form of content can only be understood in connection to the parallel development of software as form of expression, consisting in the coding of functions as coded norms or programs, i.e. a series of commands addressed to computational machines.

Code-driven platforms are structured as layered stacks in which programming languages of lower levels determine the rules for the coding of higher-level languages. At the bottom of the stack, norms expressed in a machine language operate in close

56 Gilles Deleuze and Félix Guattari, *Mille Plateaux: Capitalisme et Schizophrénie II* (Critique, Les Éditions de Minuit 1980).

57 Foucault (n 53).

58 Deleuze and Guattari (n 56); Gilles Deleuze, *Foucault* (Les Éditions de Minuit 2013).

59 Bratton (n 4); Jussi Parikka, *A Geology of Media* (Electronic mediations volume 46, University of Minnesota Press 2015); Kate Crawford, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence* (Yale University Press 2021).

60 Carlos A Scolari, Juan M Aguado and Claudio Feij, 'Mobile Media: Towards a Definition and Taxonomy of Contents and Applications' (2012) 6(2) International Journal of Interactive Mobile Technologies 29; Samuel Greengard, *The Internet of Things* (MIT Press 2015).

conformity to the material form of the hardware, taking electrical impulses as their content. On top of this basic language, progressive abstract languages are constructed using the functions afforded by lower-level languages as building blocks. At each further level of the stack, the multiple potentials of matter and energy are traded off for the affordance of certain functions (as opposed to any other ones). Every afforded function on a relatively higher level corresponds to the efficacious implementation of norms on a relatively lower level, all the way from machine languages to user-directed applications.[61]

The relation between any two contiguous levels of a platform stack may be called an interface. On its upper levels, two types of interfaces are of particular importance: application programming interfaces, which afford the development of applications by complementors, and user interfaces, which suggest finalised functions to users as concrete norms.[62]

Thus, on the top levels of a platform stack, conducts are afforded to users by applications and offered to them through user interfaces. Applications are programs/software made purely of coded norms, even though their implementation depends on hardware. User interfaces result from the implementation of applications. They express interfacial norms in a manner that is intuitive to potential users. In order to be effective, user interfaces must to some extent conform to the potential user's world and form of life, while also opening this world to previously unavailable possibilities.[63]

Here the homonymy between 'applications' and the 'application' of norms by the subjects of modern law is not meaningless. When users use an application to perform certain conducts, they apply norms of conduct. This is not to say, however, that the way norms are applied, or the kinds of norms applied, is the same in both contexts. While in modern law coded norms are applied in subject's conducts, the coded norms that constitute applications are only applied by computational devices. That computational implementation produces user interfaces, which in turn norm/mould users' conducts, so that the norms applied by users do not correspond to the coded norms that constitute applications as such.

Applications, thus, have a *double implementation*. They are not only implemented by the platforms' hardware, but also by users brought forth from the platform's environment/ground. When a user makes a TikTok video, not only must the platform implement all the computations required by that function, but also the user implements TikTok through the conduct of 'making a video'. They apply norms of conduct that are either inscribed in the application's user interface (pressing 'record'; using editing tools) or implied as ground norms in the platform's environment (dancing to a trending pop music hit). Thus, applications articulate two different and co-dependent modes of implementation — what we may call a *technical* or

61 See 'high-level language', 'low-level language', 'machine code' in A. Butterfield and G.E. Ngondi, *A Dictionary of Computer Science* (7th ed., Oxford University Press 2016).

62 Poell, Nieborg and van Dijck (n 1). Also relevant especially in the interface between the Web (or 'Web 1.0) and data-driven platforms (or 'Web 2.0) is the concept of protocol. See Alexander R Galloway, *Protocol: How Control Exists after Decentralization* (Leonardo, MIT 2004).

63 The details of an application's computational implementation remain hidden to users, while the nature of afforded functions is signalled to them through user interface design techniques. For media-theoretical treatments of interfaces see Bratton, *The Stack* (n 4); Alexander R Galloway, *The Interface Effect* (Polity 2012).

computational implementation, on one hand, and an *environmental implementation*, on the other. Applications work to actualise conducts in the platform's environment by producing, through a system of coded norms, a good enough fit between interfacial norms offered to users and environmental norms implemented from the ground up.

As an effect of the double implementation of applications, users should be understood as interfacial entities emerging in the intersection between a platform and its environment. As such, a user has two faces, a *user-expression* and a *user-content*. The former is constituted of coded norms and interfacial norms at the level of the application and its user interfaces; the latter consists in an organisation of matters resulting from an encounter between virtualities of the environment and affordances interfacially offered by the application. The program/interface articulation of the user-expression summons user-contents with specific traits from the environment.

In this way, platform applications exert a subtle kind of power over users.[64] The notion of 'use' should not be read, therefore, as implying the instrumental subordination of applications as means to users' ends, as the modern conception of technics would have it. We might say that users do not *use* applications but *enter into use* with them – they are used by applications at least as much as applications use them. This way of governing, also referred to (perhaps more broadly) as 'control' and 'modulation', may be adequately called '*suggestion*' (etymologically 'management from below') in that it sets up the interfacial conditions for norms to be applied 'from the ground up.'

Note that, contrary to what is implied in our everyday use of the word, users do not coincide with pre-given human individuals, whether normative persons or biological bodies. It would be methodologically unwarranted to take such entities for granted, since the individual itself is the correlate and product of spatiotemporally contingent devices such as modern law or disciplinary institutions.[65] Applications do not apply norms on pre-formed bodies (like modern law), nor do they *form* individual bodies (like disciplines). Rather, they *divide minds according to various functions* and *disorganise bodies* in order to constitute what we might consider as a different kind of mind and a different kind of body, existing on a different scale from that of the human individual.

As a human individual becomes a user of various platforms, each platform tends to take charge of the specific kinds of conducts they afford. An individual may take rides on Uber, book accommodation on AirBnB and watch videos on TikTok. For TikTok, however, the conduct of watching a video does not become meaningful/useful in the context of all other conducts performed (whether on other platforms or in 'real life') by the same individual, but of a series analogous and related conducts by different individuals: what other videos did people who watched/liked this video also watch/like? In this sense, the environmental correlate of a platform application is not an integral individual, but a series of *dividuals*, i.e. disjoint aspects of what would otherwise form an individual.[66] Those aspects are abstracted from individual bodies and re-grouped

[64] Shreeharsh Kelkar, 'Engineering a Platform: The Construction of Interfaces, Users, Organizational Roles, and the Division of Labor' (2018) 20(7) New Media & Society 2629, p. 2631.

[65] In Foucauldian terms, every paradigm of governance constitutes its 'correlate' or 'plane of reference'. Michel Foucault, *Naissance de la Biopolitique: Cours au Collège de France (1978-1979)* (Hautes études, Seuil; Gallimard: Seuil 2004).

[66] Deleuze, 'Postscript on the Societies of Control' (n 52).

along a series passing through many such bodies. In this sense, we may define two modes of existence of users belonging to different scales: the *dividual user*, at the scale of particular uses of applications, and the *transdividual user* — resulting from a series of dividuals — at the scale of the platform.

Finally, as Bratton has emphasised, platforms are not only 'agnostic to the user's formal legal identity', but also to whether 'users' are human or not, either biologically or socially.[67] For a platform, it matters little whether some user-content corresponds to a human, a robot, a smart fridge or a jaguar being tracked by an environmentalist organisation. All of them produce data. Moreover, since platforms do not operate on the basis of the fact/norm distinction, they are virtually amenable to govern sociotechnical/environmental processes in ways entirely indifferent to 'human-centric' concerns. As is often feared, this does seem to augur dystopian futures — at least for humans. Yet, given the role arguably played by anthropocentrism in the advent of our techno-ecological predicament, there doesn't seem to be much reason to see a non-anthropocentric nomic paradigm as any more of a threat than a promise.

If platformisation is indeed an ongoing (and not necessarily reversible) nomic transition, we might as well seek to drive that process towards positive aims, seeing it not only as a risk, but also as an opportunity for vital and urgent interventions. By this I do not mean that we should not be attentive to risks, or that there are no elements of our present legal/political institutions and concepts that we may want (and, to some extent, be able) to maintain. My claim is simply that protective/critical strategies may not be sufficient – even for their own aims – unless combined with a parallel effort of speculative thought and practice.

Concluding remarks

Dominant cloud platforms today seem to combine their characteristic spatial orientation (the production of a vertical difference between planes) to a particular temporal orientation, to wit, a linear future progression along which the frequency and intensity of whatever conducts generate value for the platform in question shall be accelerated. Those conducts tend to be primarily those afforded by the platform to its users, since those generate the immediately-appropriable data needed by the platforms' operation, and secondarily various conducts of consumption, as data mined from the former kind of conducts is marshalled in the advertisement of products and services. Perhaps as a consequence, those platforms seem to have become accelerators of social inequality, hate crime, political violence, epistemic disfunction, mental illness and many other ills, while appearing inherently blind to the question of the ecological sustainability of the modes of life they reproduce. But are those essential characteristics of data-driven platforms, or are they contingent to their combination with other elements? Could we imagine a different 'nomos of the cloud' that would still be based on data-driven technologies, but without producing similar results?

In her recent book *EcoLaw: Legality, life, and the normativity of nature*, speculative legal theorist Margaret Davies shows how nonhuman ecosystems may be understood as entangled systems of legal norms.[68] Kirsten Anker has been making similar points drawing from indigenous thought and the anthropology of

[67] Bratton (n 4), p. 175.

[68] Margaret Davies, *Ecolaw: Legality, Life, and the Normativity of Nature* (Routledge 2022).

nonhumans.[69] A problem remains, however, as to how to integrate human and nonhuman nomic orders; how to create legal systems that are sensitive and adaptive to ecological normativity, rather than taking 'nature' as a mere object of legal protection or 'recognizing' it as a legal person. Could cloud nomics have a role in such an effort? If data-driven platforms operate by mapping hybrid (human-nonhuman) nomic networks inherent to their environment and then using coded and interfacial norms to modulate conducts according to the resulting diagram, could similar procedures be used to promote some kind of harmonisation of sociotechnical and ecological orders?

Supposing that is a potential of cloud platforms, why is it so different from what we actually experience and expect? Some suggest that the decisive problem is capitalism, in which case the alternative might involve moving away from the private domain into that of the public and/or the common and building socialist/communist platforms.[70] Others argue that today's cloud platforms are pervaded by a Western/modern/colonial conception/experience of technics that is inherently instrumentalist, in which case it may be necessary to promote what Hui has called 'technodiversity' in platform nomics.[71] Those two hypotheses, though they tend to map onto cosmopolitical divergences both along and across the left/right political spectrum, may not necessarily be incompatible.

Finally, one may come to the conclusion that there is something essential about the platform as a nomic orientation (perhaps vertical differentiation is inherently oppressive), or about data-driven platforms in particular (perhaps data extraction is essentially exploitative), which should be avoided or overcome. In that case, it may be important to ask to which extent pulling back from platformisation is still viable and whether it would be possible to strategically navigate a transition *through* platform nomics into a different nomic paradigm. I doubt that any of those questions can be answered from a purely theoretical standpoint, which is why I argue speculative legal theory should ideally be pursued in connection to concrete nomic experimentation.

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[69] Kirsten Anker, 'Law As … Forest: Eco-logic, Stories and Spirits in Indigenous Jurisprudence' (2017) 21 Law Text Culture 191.

[70] For critiques of platform capitalism, see Nick Srnicek, *Platform Capitalism* (Polity 2017); Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (PublicAffairs 2019). Regarding socialist/communist alternatives, see James Muldoon, *Platform Socialism: How to Reclaim our Digital Future from Big Tech* (Pluto Press 2022); Joss Hands, 'Platform Communism' (2013) 14 Culture Machine 1; Tiziana Terranova, 'Red Stack Attack!' in Robin Mackay and Armen Avanessian (eds), *Accelerate: The Accelerationist Reader* (Urbanomic 2014).

[71] Yuk Hui, *Recursivity and Contingency* (Rowman & Littlefield International 2019); Yuk Hui, 'For a Planetary Thinking' (2020) 114 E-flux 1; Yuk Hui, 'Machine and Ecology' (2020) 25(4) Angelaki 54.

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A reply to the author

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Disliking is a quite universal emotion. However, Facebook decided not to program a dislike button because, according to its founder Mark Zuckerberg, 'we don't want to turn Facebook into a forum where people are voting up or down on people's posts. That doesn't seem like the kind of community we want to create.'[1] As Zuckerberg also admitted, underlying this and countless other similar decisions is the ruling capacity of successful platform companies:

> every day, platforms like Facebook have to make trade-offs on important social values — between free expression and safety, privacy and law enforcement, and between creating open systems and locking down data.[2]

In 'Platforms as law' José Antonio Magalhães offers a theorization of this ruling power. Here, I briefly present a critique of his theorization, aimed at strengthening the author's ultimate goal: to render digital platforms intelligible in both legal and spatial terms.

Magalhães's legal theory of computational platforms is integrated by three complementary and interconnected types of norm. Coded norms are defined as applied algorithms running on computational devices. Interfacial norms refer to concrete — expected and actual — behaviours in the platforms. Environmental or ground norms are context specific, and do not imply a normalization because the singularization resulting from the construction of a digital twin comprises tailored norms. Environmental norms do not aim to uniformize but modulate each behaviour albeit they are presented as if they were neutral outcomes of crunched data — machine learning predictions curating behaviours — without human intervention.

This concretization of the idea of platforms' ruling power certainly advances our understanding of platforms, however reducing rules to norms is problematic, because platforms, more than norming, are *formatting* agents. They format society, and even set standards. In the words of Koopman, who builds on Foucault:[3]

> The more important difference between standards and norms is that the latter encourage conformity to averages (signaled by Foucault's double use of norm, connoting both what is socially encouraged but also what is statistically average along a normal curve), whereas the former invite, and create the very possibility for, adherence to new specifications. Formats (including standard formats) do not produce with an eye to

[1] Barbara Speed, '"A cursed project": a short history of the Facebook "like" button' *New Statesman* (9 October 2015) <https://www.newstatesman.com/science-tech/2015/10/cursed-project-short-history-facebook-button> accessed 18 September 2023.

[2] Mark Zuckerberg, 'Big Tech needs more regulation' *Financial Times* (16 February 2020) <https://www.ft.com/content/602ec7ec-4f18-11ea-95a0-43d18ec715f5?segmentId=b0d7e653-3467-12ab-c0f0-77e4424cdb4c> accessed 18 September 2023.

[3] Colin Koopman, *How We Became Our Data* (University of Chicago Press 2019), p. 162.

> averaging, but rather produce with an eye to specified designs to which we become fixed.

Having a predefined set of buttons to express our emotions on Facebook, to stick with the previous example, is precisely a *specified design to which we become fixed*. The fact that we can only express emotions in predesigned limited ways on social media platforms is best described not as normalization, but instead as fastening, understood as a constraining formatting process. Formatting is a power relation. We accept the format imposed by Facebook to join its controlled space. Paraphrasing Zuckerberg, to be part of his *community*.

Against this backdrop, what Magalhães dubs coded norms are not norms, but a quite peculiar type of rule that underpins the formatting of our behaviours: algorithms. Both arithmetic calculations and step-by-step procedures used for problem solving can be defined as algorithms. While it seems that today machines took over the responsibility of calculating and solving such problems, in fact, what we witness is a division of labour in which a minority codes while the majority is ruled by black boxed algorithms. We are disciplined by the computers we use, or more accurately by what they are prepared to dis/enable us to do, while we remain ignorant of algorithms. I know that if I click on the 'print' button this document will be printed, but I ignore how this happens.

In this way the algorithms that rule inside digital platforms are 'the model of the thinnest rules of all' and, by their pervasive occupation of space, these 'thin rules in turn became the model of all rules.'[4] By contrast, thick rules had historically provided us with more tools for action because they comprised information on how to apply them — examples, exceptions, caveats, models — and they often left space for discretion;[5] thick rules empower those applying them while thin rules are imposed with a narrow space of contestation.

Anxiety peaks, as we operate according to rules that we did not design, whose step-by-step operation we ignore, and which change at an incredibly fast speed. When we finally master an app, an automatic update modifies all its settings. And the control exercised by the ruler is also more effective, as the chances of being challenged shrink with the speed at which algorithms are drastically updated.[6]

For both Magalhães and Daston, contemporary algorithms ignore their context; a feature that probably led the former to suggest that digital platforms as law also implied ground norms. However, with the introduction of large language models — such as the code powering ChatGPT — into our everyday lives, we may be witnessing a new stage in the development of algorithms. With these thin rules the frontier between the algorithm and the context blurs. Generative artificial intelligence chatbots like ChatGPT are algorithms that interact with the environment; they learn to act within it, making even more artificial the distinction between a digital and a non-digital world.

I find another discrepancy with Magalhães's contribution, concerning precisely how useful it is to speak of a clearcut separation of (layered) spaces, between digital and non-digital and among digital platforms themselves. For him, platforms are layers:

> a platform is a detached horizontal plane, a plane that differs vertically in relation to

[4] Lorraine Daston, *Rules: A Short History of What We Live By* (Princeton University Press 2022), p. 84.

[5] Ibid p. 56.

[6] Ibid p. 270.

> another plane, whether determined relatively (another platform) or absolutely (the ground).

Magalhães builds on Bratton's stack to create a three-dimensional space in which states and different types of platforms co-exist and overlap:

> [i]n contrast to the horizontal division of the surface of the earth into mutually exclusive territories, the nomic concept of platform allows for the vertical overlap of different legal orders. The monopoly of power over territory and population essential to modern sovereign states is relativised.

This recognition could have been a window to explore the interplay between platform rulers and states, but Magalhães focuses on the platform as a detached entity, without exploring the mutual constitution and entanglements among platforms and between platforms and those sovereign states whose power over territory and population is put into question. The latter is only stated, without any further development.

Nonetheless, if digital platforms overlap, among them and with states' spatial and legal scopes, what follows is a need to conceptualize how this unfolds, altering the nature of each platform as law. The idea of overlapping legal orders driven by platformization needs to be understood together with its resulting disorder and conflict. The connection among *horizontal planes* is constitutive of the planes themselves.

Think of the interplay between Uber and Google. The former cannot operate without the latter. It depends on Google for accessing maps and geolocalization, which are essential for its operations. Google formats Uber by providing the algorithms that define the paths to be followed by its drivers. For Uber, Google Maps is a black box, a thin rule with which it complies in order to further impose its own rules — coded, interfacial and environmental norms according to Magalhães — to its drivers and clients.

This constitutive interplay is even more apparent when we focus on cloud platforms. 'Platforms as Law' uses the term 'cloud platform' to refer to every digital platform. The choice enables Magalhães to make an indirect reference to Carl Schmitt's *nomos of the Earth* and *nomos of the sea*, but it also generates a major confusion because the term cloud has a specific meaning in relation to platforms. It denotes only a handful of the most powerful platform corporations: Amazon, Microsoft and Google, which concentrate 65% of the cloud computing market.[7] Almost all platforms — and thousands of other organizations — run their business on at least one of these giants' clouds, accepting their thin rules. And it is not only non-cloud platforms that depend on cloud providers to exist; Big Tech clouds are also interconnected, so that their clients can interoperate between them. They are not relatively detached planes.

Once we move beyond the idea of detached horizontal planes, the relativization of state sovereignty that Magalhães points out further unfolds, as platform companies, particularly Big Tech, not only aim to rule by code and data inside their own *horizontal planes* and those of other digital platforms, but also seek to expand their ruling arm to overtake what were previously seen as state prerogatives. Big Tech CEOs' attempts to steer generative artificial intelligence

[7] Cecilia Rikap and Bengt-Åke Lundvall, *The Digital Innovation Race: Conceptualizing the Emerging New World Order* (Palgrave Macmillan 2021).

regulations[8] gives testament to this practice, further blurring the vertical differentiation of planes. Fully grasping how platforms are law therefore requires re-thinking corporate and political power.

All in all, in spite of my critiques (or perhaps precisely because the text inspired them), I see Magalhães's 'Platforms as Law' as a bold piece that goes beyond simplistic understandings of platforms. It challenges us to create *thicker* theorizations of a complex world that is evolving at an extraordinary pace.

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[8] See for instance George Hammond, 'Top tech companies form group seeking to control AI' *Financial Times* (26 July 2023) <https://www.ft.com/content/709f4375-83bf-4037-878d-964d1ead8858> accessed 18 September 2023.

A response from the author

José Antonio Magalhães

This rejoinder may take a curious form, as I agree with most of Cecilia Rikap's positions in her reply to my article, but disagree with most claims she explicitly or implicitly attributes to me. In what follows I will argue that many of her criticisms stem from confusions — probably caused by our differing disciplinary backgrounds, the compressed form of the article and my limited capacity for clarity. In any case, those apparent misunderstandings give me the opportunity to clarify my article's meaning.

I will recapitulate the concepts of coded, interfacial and environmental norms, and then address the question of entanglements between what I call cloud platforms[1] and other nomic devices, such as states.

When it comes to coded, interfacial and environmental norms, Rikap's disagreements with me seem mostly verbal rather than conceptual. For instance, she writes that what I call coded norms are 'not norms but a quite peculiar type of rule: algorithms'. My concept of norm, however, is broader than my concept of rule, which makes 'reducing rules to norms' impossible. Quite on the contrary, I fault modern legal theory for *reducing norms to rules*, thus excluding interfacial and environmental norms from legal thought. I also do not think algorithms are such peculiar rules — in my article I argue that 'text-driven' legal norms are 'if, then' algorithms like 'code driven' norms, though not automated.

When it comes to interfacial norms, they are not exactly 'concrete behaviours in the platforms'. Rather, they are norms concretely expressed in platforms' interfaces, so that they *norm* or *mould* behaviours that are afforded to users. Indeed, they both afford/invite conduct and specify/fix how such conduct is performed through design. Rikap argues that platforms 'more than norming, [they] are formatting agents', but, since what she means by 'formatting' seems to coincide with what I mean by 'norming', conceptually we agree. I do not oppose talk of 'formatting'/'standardization', even though I prefer 'norming'/'moulding'. My only reservation would be that to define platforms in terms of interfacial norming risks downplaying the role of environmental norms.

Finally, Rikap writes that environmental norms are 'presented as if they were the neutral outcomes of crunched data'. That was not my intent, as I define those norms as immanent to platforms' environment/ground (hence the name), and precisely *not* the result of algorithmic cognition. In this sense they are not the outcome, but the *income*, as it were, of data-driven governance. The *critical* (Kantian) disclaimer that platforms have no unbiased access to environmental norms does not preclude *speculative* legal theory from theorising them.

The most surprising misunderstanding in Rikap's response, however, is expressed in her assertion that,

[1] Rikap is of course right that there is a much stricter sense of 'cloud platforms' that is crucial in many contexts. Still, since 'almost every platform […] runs its business in at least one of those giant clouds', I believe my use of the term is still legitimate.

when I define platforms in general as 'vertically detached planes', I imply that data-driven platforms 'only aim to rule by code and data inside their horizontal planes'. Quite on the contrary, the bulk of my article seeks to theorise how platforms nomically interact with their environment/ground, and would make no sense otherwise. Detachment, in this context, does not imply the absence of a relation to the ground, but is precisely *the form of that relation*: a relation of vertical difference without which the spatial idea of a platform is itself meaningless/inconceivable.

I do agree that it is necessary to further explore 'the mutual constitution and entanglements among platforms and between platforms and [...] sovereign states'. The reason I did not do that is because (1) the scope of my article is already quite compressed, and (2) I doubt that any general answers can be given to the question of how platforms and states are nomically entangled. Such a question, though vital, could only be approached by taking concrete, situated assemblages of platforms, states and/or other nomic devices and mapping out the flow of norms in that singular zone. We may call that kind of mapping a 'nomography'.

I do hope that the concepts I offered become useful precisely in that kind of 'nomographic' context — not as *a priori* categories to be simply applied to cases, but so that the singularity of each case transforms the concepts themselves, forcing them to vary and thus generating new comparative paradigms, which may then be deployed in further cases, and so on.

Finally, since Rikap herself has two very useful and important books mapping precisely those kinds of entanglements — though more from the point of view of political economy and innovation studies than from that of law — I feel that a similar undertaking from my part may not be so urgent.