

The adaptive nature of text-driven law

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Abstract

This article introduces the concept of ‘technology-driven normativities’, marking the difference between norms, at the generic level, as legitimate expectations that coordinate human interaction, and subsets of norms at specific levels, such as moral or legal norms. The article is focused on the normativity that is generated by text, fleshing out a set of relevant affordances that are crucial for text-driven law and the rule of law. This concerns the ambiguity of natural language, the resulting open texture of legal concepts, the multi-interpretability of legal norms and, finally, the contestability of their application. This leads to an assessment of legal certainty that thrives on the need to interpret, the ability to contest and the concomitant need to decide the applicability and the meaning of relevant legal norms. Legal certainty thus sustains the adaptive nature of legal norms in the face of changing circumstances, which may not be possible for code- or data-driven law. This understanding of legal certainty demonstrates the meaning of legal protection under text-driven law. A proper understanding of the legal protection that is enabled by current positive law (which is text-driven), should inform the assessment of the protection that could be offered by data- or code-driven law, as they will generate other ‘technology-driven normativities’.

Keywords: Technology-driven normativity, text-driven law, ambiguity, open texture, legal certainty, adaptiveness of positive law

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Introduction: technology-driven normativities

The idea that specific types of technologies generate specific types of normativity is neither new nor uncontroversial. Many will say that it is not the technology that is either good or bad, but those who use it for good or bad purposes. Others will say that some technologies are inherently bad, such as killer robots, whereas others, such as medication against the flu, are inherently good. Interestingly, all these answers seem to conflate normativity with morality. I would like to take a step back and differentiate between norms and moral norms (and legal norms, professional norms, etc.). A norm is a 'habit', a pattern of acting that is neither necessarily the result of a conscious decision nor mere regularity of behaviour.¹

Language usage is normative in precisely this sense; it is not just a matter of mere regularity, nor do we make deliberate decisions about how to 'use' language while speaking. There is an intuitive sense that one way of using a particular language is 'right' while others are 'wrong', though not necessarily in the moral sense of those terms. On top of that, language can be used creatively, taking the risk of digressing from the norm, as in the case of metaphorical use, joking or irony, or even poetry. The risk is that one is not understood or understood wrongly. The gain may be that new meaning is generated in the interstices of 'regular' language use. Depending on how others respond, the diversion of the norm may actually transform the norm, demonstrating that a language has a certain plasticity. The example of a language is informative because language usage (speech, discourse) and the language system (language) are clearly mutually constitutive, while taking note of the fact that people are born (or thrown) into a given language that determines their room for expressing themselves – which turns on what they can communicate.

Technologies afford specific ways of doing things. A knife affords cutting meat or attacking an enemy, requiring physical proximity (unless the knife is thrown). A pistol

affords harming or even killing an enemy at much greater distance, it creates different habits, because a society with pistols requires a very different kind of anticipation on the side of those who may be harmed than a society with only knives. The invention of the wheel again affords different ways of doing things compared to a society that has no wheel. In suggesting that specific technologies generate specific 'normativities' I am putting forward that people will form specific types of habits depending on the technologies they employ, thus reinforcing or transforming the mutual expectations people have of each other. Technologies mediate, co-constitute and regulate our relationships, our expectations and our sense of self (what kind of people we are). As Ihde frames it, 'technologies reinvent us while we invent them'.² This understanding of the normative impact of technologies is not deterministic. The question whether a technology determines or induces behaviour is an empirical question, not a metaphysical one. Depending on the design of the technology it can either induce or inhibit behaviour or enforce or preclude behaviour.³ And, most probably, there are many shades of grey here that depend both on the *material affordances* of the technology and on how it has been incorporated in the fabric of human interaction.

The question of the moral evaluation of a specific technology is not equivalent with an assessment of the 'normativities' it affords. However, to make a moral evaluation we need to assess what habits (normativities) the technology induces, enforces, inhibits or precludes, in other words, we must assess its normative affordances. To decide whether we think that developing killer robots is a good thing or a bad thing, we need to understand the normativity they may generate. This is what Kranzberg meant when he wrote: 'technology is neither good nor bad, but never neutral'.⁴

In this paper I will investigate how the technologies of the word (script and printing press) reinforce and transform the affordances of human language, in order to assess the normative affordances of text-driven information and communication infrastructures (ICIs). I will then re-

¹ Peter Winch, *The Idea of a Social Science* (Routledge & Kegan Paul 1958).

² Don Ihde, *Technology and the Lifeworld: From Garden to Earth* (Indiana University Press 1990).

³ Peter-Paul Verbeek, *What Things Do. Philosophical reflections on Technology, Agency and Design* (Pennsylvania State University Press 2005).

⁴ Melvin Kranzberg, 'Technology and History: 'Kranzberg's Laws'' (1986) 27 *Technology and Culture* 544.

late this to the idea of legal certainty as a dependency of text-driven law, highlighting the fact that legal certainty is contingent upon a specific type of ambiguity that is inherent in human language, amplified in written and printed speech, and connected with the multi-interpretability of legal norms that implies both their inherent adaptiveness and their contestability. This means that this article serves as a preliminary investigation, hoping it will act as a point of departure to test the impact of data- and code-driven legal ICIs. Metaphorically speaking, I am developing the null hypothesis against which new 'legal tech' should be tested.

ICT-driven normativities

In this paper a specific type of technology is under scrutiny, namely information and communication technologies. Contrary to what ordinary language usage suggests, ICT does not necessarily refer to digital technologies but also to the script and the printing press.⁵ Before investigating the normative affordances of writing I will first investigate those of spoken human language.

The ambiguity of human language: speech and language

Systems of signs

Two critical 20th century philosophical strands of thinking 'signs' in relation to human language are relevant here. On the one hand we have De Saussure's semiology⁶ that distinguishes between a *signifier*, the intra-linguistic reference of *signs* (a word has a specified meaning because of the way it relates to other words) and the *signified*, their extra-linguistic reference (due to its position in the web of intra-linguistic references, a word carves out a specific reference outside language, whether this concerns a token or a type). The affordances of human language (as a system) derive from the most salient characteristic of the sign (the simultaneity of signifier and signified), which is differ-

ence. A language allows its speakers to generate meaning only because each sign carves out a different intra- and extra-linguistic reference compared to all other signs. De Saussure highlighted that language can be studied along two axes: diachronic (investigating the development of intra-linguistic system of signs) and synchronic (investigating the intra-linguistic system at a given point in time). Clearly, the *use* of language (speech) inevitably transforms the intra-linguistic signifier system based on new ways of framing the extra-linguistic signified. Even De Saussure himself highlighted time and again that signifier and signified cannot be separated as they are part and parcel of the same sign. This makes semiology highly relevant for a proper understanding of what human language affords us, in terms of constraints (the given structure of the intra-systematic references) and potential (the possibility to rearrange the intra-systematic references by changing the extra-systematic references and vice versa).

...to make a moral evaluation we need to assess what habits (normativities) the technology induces, enforces, inhibits or precludes

On the other hand, we have Peirce's semiotics,⁷ which distinguishes between a *sign* (De Saussure's signifier), an *object* (De Saussure's signified) and an *interpretant* (the interpretation by an agent of the relationship between a sign and its object, which is, however, itself a sign). The triadic nature of Peirce's sign-object-interpretant highlights the networked nature of sign systems as well as their dynamics, because the interpretant links again to other signs thus potentially redefining the object it signifies. Whereas De Saussure focused all his attention of the intra-linguistic system of signifiers because he restricted his studies to the synchronic axe of language rather than the diachronic axe of language *use* and *development*, Peirce pays keen attention to the crucial role of interpretation. This also implied that this understanding of semiotics was *not mentalist* (as De Saussure's semiology with its focus on intra-linguistic

⁵ Elizabeth L Eisenstein, *The Printing Revolution in Early Modern Europe* (2nd, Cambridge University Press 2012); Walter Ong, *Orality and Literacy: The Technologizing of the Word* (Methuen 1982).

⁶ Ferdinand de Saussure, *Course in General Linguistics* (Reprint, Bloomsbury Academic 2013).

⁷ James Hoopes (ed), *Peirce on Signs: Writings on Semiotic by Charles Sanders Peirce* (University of North Carolina Press 1991).

signifiers) but grounded in the physical and embodied world of the agent (who in one stroke decides the intra- and extra-linguistic meaning of a sign, though whether it holds will depend on how other ‘users’ of the same language understand the utterance). The triadic model makes it easier to explain and assess the transformation of a given language due to the intervention of the embodied agents that must navigate a world they need to anticipate; it also resulted in Peirce’s famous pragmatist maxim that explains the crucial role of interpretation or understanding for human agents:

Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.⁸

Clearly, anticipation is core to Peircean semiotics, where anticipation refers to navigating the world as shaped by a given language, which affords its speakers to foresee how others will understand their *actions* as indicated by their *speech*.

Language and language usage as world-shaping

Semiology and semiotics paved the way for the Sapir-Whorf thesis, that highlights the constitutive nature of any given language for the shared world it creates.⁹ Though Anglo-American philosophy would rather frame this as the *influence* of language on how we think *about* the world, I believe it is important to acknowledge the world-shaping nature of language (as a given system continuously recalibrated by its use by embodied agents). The thesis does not concern thinking *about* the world but *thinking the world*. This implies steering clear from the dichotomy between a weak and a strong version of the Sapir-Whorf thesis, as both are premised on a causal understanding of the relationship between thinking and speaking. The thesis concerns, however, another more fundamental level of investigation, taking into account that notions of causality

themselves depend on the way a language frames dependencies. See Whorf’s oft-cited claim that:

Formulation of ideas is not an independent process, strictly rational in the old sense, but is part of a particular grammar, and differs, from slightly to greatly, between different grammars. We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impression which has to be organized by our minds—and this means largely by the linguistic systems in our minds.¹⁰

The Sapir-Whorf thesis confirms the semiological and semiotic insight that a vocabulary (cp. De Saussure’s sign, Peirce’s sign-object-interpretant) depends on a particular way of framing or structuring extra-linguistic reality. With Sapir-Whorf the emphasis shifts *from vocabulary to grammar*, demonstrating how such grammar constitutes a world of objects and their relationships, thus enabling us to navigate both our physical and our institutional environment.

The ambiguity of human language

One of the most salient insights one can derive from the inquiry into the role played by both language and speech is the ambiguity it necessarily generates. If a minor change in the intra-linguistic web of meaning reconstitutes the world it references, we can never be certain of the meaning of words. This does not imply a naïve voluntarism, where the creation of meaning would be a matter of arbitrary will power. On the contrary, if we frame the world in a way that prevents us from successfully navigating both physical and institutional reality, we will fail in the real world. This is why Peircean semiotics and the Sapir-Whorf thesis do not result in radical relativism; instead, they remind us of (1) the fact that language and speech always afford a reconstitution of the world we share and (2) the fact that

⁸ Hoopes (n 7) p. 169.

⁹ See for example Maria Francisca Reines and Jesse Prinz, ‘Reviving Whorf: The Return of Linguistic Relativity’ (2009) 4(6) *Philosophy Compass* 1022.

¹⁰ Benjamin Lee Whorf, ‘Science and Linguistics’ in John B Carroll (ed), *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf* (MIT Press 1964) p. 212.

such reconstitution makes a difference that makes a difference¹¹ and may lead us into e.g. climatic catastrophe or unfair treatment.

Ambiguity may be seen as a bug or a feature. It can refer to a range of uncertainties concerning the meaning of a word (lexical ambiguity) or a sentence (structural ambiguity), e.g. a metaphor or metonym (lexical) or paradox (structural), and at some point in time it may be adamant to disambiguate a word or a sentence by deciding its meaning in one way or another. In terms of Peirce this basically means to *decide the consequences of the use* of the word or sentence, e.g. to qualify the word 'Sunday' as a day of rest meaning that one does not have to go to work, or as a day similar to any other day, meaning it is up to the employer to decide whether or not one has to come to work. However, such a decision necessarily has only a temporal effect. Language usage may shift the meaning and there is no final decision that can prevent such a shift. This goes for words and sentences but also for grammar, noting that a given language may have a grammar that affords more or less ambiguity. The phrase 'regulating technology' can – grammatically speaking – refer to the process of regulating a specific object ('technology'), or to a specific subject ('technology') that is regulating. This particular ambiguity may not occur in other languages with a different conjugation of verbs and different norms for the sequence of words; in turn, other languages will entail ambiguities not occurring in English. In Japanese, for instance, the subject of a sentence is implied, there is no personal pronoun signifying the person who speaks. On top of that verbs are not conjugated depending on the subject, so 'I regulate', 'you regulate', 'they regulate' would all be the same word: *chousetsu* (as in 'regulate cell division'), *kisei* (as in 'regulate distribution in Canada'), or *seigen* (as in 'regulate fluid intake') - noting that which word is the correct translation depends on which of the meanings of 'regulate' is at stake, which hints at the ambiguity of the term 'regulate'. The absence of a personal pronoun and conjugation implies a major role for the context of the utterance, required to properly infer the meaning.

Ambiguity of human language as conditio humana

Ambiguity, however, depends on the fact that neither a language, nor its vocabulary or grammar are final, because meaning is generated in speech, which in turn depends on interaction or dialogue. In line with the insight that a given language shapes the shared world of those living within the constraints and potential of the language,¹² and the concomitant insight that utterances or speech acts sustain and transform the language,¹³ linguistic theorists such as Bakhtin have highlighted the crucial role of what he coined the 'heteroglossia' of human language usage.¹⁴ Interestingly, Bakhtin distinguishes centripetal and centrifugal forces in speech, i.e. forces working towards an imposed unitary use of a language (which thus enforces a particular framing of the world it shapes) and forces that instigate different idioms (based on individual human agency constituted in dialogue with others). For Bakhtin, 'heteroglossia' is given with the use of language, which is not defined as a relationship between a subject (human agent) and a tool (language), but as a highly dynamic mediation between individual speakers who are forever calibrating the need to express with the need to be understood. This has consequences for the nature of human language:

Language is not an abstract system of normative forms but rather a concrete heteroglot conception of the world. All words have the 'taste' of a profession, a genre, a tendency, a party, a particular work, a particular person, a generation, an age group, the day and hour. Each word tastes of the context and contexts in which it has lived its socially charged life; all words and forms are populated by intentions. Contextual overtones [generic, tendentious, individualistic] are inevitable in the word.¹⁵

Bakhtin's emphasis on individual agency as both relational (always co-constituted by the language it practices) and creative (always reinventing the idiom in a particular context and moment in time) singles out *the subversive nature*

¹¹ Gregory Bateson, *Steps to an Ecology of Mind* (Ballantine 1972).

¹² John A Lucy, 'Sapir-Whorf Hypothesis' in James D Wright (ed), *International Encyclopedia of Social and Behavioural Sciences* (2nd, Elsevier 2015).

¹³ Paul Ricoeur, 'The Model of the Text: Meaningful Action Considered as a Text' (1973) 5(1) *New Literary History* 91.

¹⁴ Mikhail M Bakhtin, *The Dialogic Imagination: Four Essays* (University of Texas Press 1981).

¹⁵ Mikhail M Bakhtin, 'Unitary Language (1934-5)' in Lucy Burke (ed), *The Routledge Language and Cultural Theory Reader* (Routledge 2000) p. 278.

of speech and human agency. Knowing the background of Bakhtin's concerns (Soviet rule), his understanding of language has implications for the politics implied in the mutually constitutive nature of language and speech. One could relate this to Arendt's concept of 'natality' that highlights our ability to create new meaning and to act (make a difference) in the world by way of speech, which for Arendt is core to her concept of action (as opposed to labour and work), which in turn defines the space of politics.¹⁶ One could also relate this to recent work by Kruks, who develops a political theory based on Simone de Beauvoir's *The Ethics of Ambiguity*, highlighting the agonistic tension that is core to the human condition, arguing that:

irresolvable antinomies are constitutive of human existence and that these extend from the ontological to the ethical and the political.¹⁷

This connects with the work of Mouffe on the agonistic nature of a viable democracy,¹⁸ and Radbruch's analysis of law in terms of its antinomian goals.¹⁹ Finally, the idea that human agency is constituted by an agonistic tension has been argued by Plessner in his seminal introduction to philosophical anthropology *Levels of Organic Life and the Human*.²⁰ He refers to what he calls the ex-centric positionality of human animals, based on their ability to take a second- and third-person perspective on the self, thus constituting the grammatical first-person singular (and plural).

The normative affordances of text-driven ICIs

From orality to script

Interestingly, neither semiology nor semiotics pays much attention to the shift from spoken to written speech. The French terminology distinguishes *parole* (speech) and *langue* (language system) as two sides of the same coin:

langage (language). A sign can refer to a word or sentence that is either spoken or written. Peirce did not restrict his semiotics to human language, but he introduced the concept of a symbol, which is relevant to human language. In Peircean semiotics a *symbol* is a sign whose reference is not based on similarity to the object, meaning that the sign is in some sense an arbitrary 'thing' that is thereby in principle open to being connected with any object. This broadens the scope of the interpretant, as this is not constraint by e.g. isomorphism between sign and object. In this section I will focus on the implications of moving from spoken to written speech, qualifying text as a type of speech, i.e. written speech or printed speech. The implications I am after concern the normative affordances of 'written and printed speech' (often coined discourse), compared to 'spoken speech' (usually called speech), investigating what new habits (normativity) this has triggered.

The most salient analysis of the move from orality to script has been made by Ricoeur,²¹ who has characterized this shift as *a distantiation in time and space* between (1) author and text (as the text may survive the author and be read in faraway geographical space), (2) text and reader (the text may have preceded the existence of the reader and originate from a faraway geographical space), (3) author and reader (who may never meet and live in radically different times or geographical spaces), and (4) text and meaning (the decontextualization inherent in the previous distantiations implies subtle and not so subtle shifts in the meaning of the text). As recounted in other work,²² this distantiation is afforded if not imposed by the material inscription, fixation, externalization, and objectification of human thought, which co-constitute the distantiation. Ricoeur emphasized that text may assume a life of its own, surviving its author as well as any actual reader, speaking in the absence of the author, reaching beyond the context in which it was conceived. Written text has thus enabled de- and re-contextualization, long before the cross-contextual sharing of personal data in Big Data Space. Taking words

¹⁶ Hannah Arendt, *The Human Condition* (University Press of Chicago 1958).

¹⁷ Sonia Kruks, *Simone de Beauvoir and the Politics of Ambiguity* (Oxford University Press 2012) p. 7.

¹⁸ Chantal Mouffe, *The Democratic Paradox* (Verso 2000).

¹⁹ Gustav Radbruch, 'Legal Philosophy' in *The Legal Philosophies of Lask, Radbruch, and Dabin* (Harvard University Press 2014).

²⁰ Helmuth Plessner and JM Bernstein, *Levels of Organic Life and the Human: An Introduction to Philosophical Anthropology* (1st, Fordham University Press 2019); Mireille Hildebrandt, 'The Artificial Intelligence of European Union Law' (2020) 21(1) German Law Journal 74.

²¹ Ricoeur (n 13).

²² Mireille Hildebrandt, *Smart Technologies and the End(s) of Law. Novel Entanglements of Law and Technology* (Edward Elgar 2015) p. 48.

out of context in fact invited the emergence of abstract thought,²³ thinking beyond ostensive reference, that is, the reference to what is present, to what can be pointed at. Text allows the author to point out what cannot be pointed at.

From handwritten to printed text

Ricoeur spoke of the script in a generic way, not distinguishing the era of the scribe and the handwritten manuscript from the era of the book, the printing press and the publisher. Others have investigated more specifically, the transitions associated with the shift from the era of orality to that of the handwritten manuscript.²⁴ They highlight the technological character of the script, its materiality and the implications of inscribing numbers and letters for how societies self-organize. These investigations are core to the domains of media studies, cultural anthropology, comparative law, and cultural and social theory. They help to understand the scale and scope of societies without the script and how the emergence of larger polities was made possible by the greater reach of written text as compared to speech. *Rule by text* is a clever cybernetic, as it affords a particular type of remote control over a population via a class of scribes that buffer between ruler and ruled (neither of whom know to read and write).

Similar work has been done concerning the transition from manuscript to printed text. Eisenstein's *The Printing Revolution in Early Modern Europe* traces the proliferation of identical copies of an original text, as afforded by the printing press, and explains how this induced an unprecedented process of rationalization and systemization, invoked by the need to save readers from being flooded by an overdose of printed materials.²⁵ This transition brought about a further distantiation (both in space and time) and triggered the rise of large, bureaucratically organised states with an increasingly prominent role for public administration. The 18th and 19th century saw the rise of a rational government based on written policies that were meant to achieve a variety of societal goals (cf. the *Polizeiwissenschaft*²⁶). Such rationalist government is closely connected with the

dissemination of printed text that enabled rulers to steer a large cohort of civil servants by way of *standards* for the behaviour of subjects, which they should *monitor*, and by way of measures they should engage to *modify* the behaviour of subjects whenever standards were being violated (cybernetics avant la lettre). Without a 'unified text' that is easily disseminated in the form of identical copies (something quite impossible in the case of handwritten manuscripts) this rationalist bureaucratic government could not have developed. This is one of the normative affordances of text-driven ICT: it allows the scaling of government by way of a very particular remote control.

The nature of legal certainty and the rule of law

The implications of text-driven normativity for the law

In the previous section I have discussed the role played by human languages as sign systems and their instantiation in the form of language usage and speech acts. This resulted in a discussion of the ambiguity that is inherent in language usage or speech. Based on this, having looked more specifically into the use of written and printed speech, it should be clear that 'text speech' simultaneously enhances and reduces ambiguity as compared to 'oral speech', as text unifies the signifiers but widens the 'interpretive community' in time and space.

This has consequences for the nature of legal norms that are contingent upon text-driven ICIs that in turn thrive on externalisation (external to the face-to-face situation of the speech act), fixation (the inscription in 'hardware'), unification (especially with the printing press multiple copies of the text are identical) and proliferation (it becomes far more easy to disseminate many identical copies of an externalised, unified text). Due to the ambiguity inherent in human language, text-driven ICIs generate a specific type

²³ James Gleick, *The Information. A History, A Theory, A Flood* (Pantheon 2010).

²⁴ Jack Goody, *The Logic of Writing and the Organization of Society* (Cambridge University Press 1986); Jack Goody and Ian Watt, 'The Consequences of Literacy' (1963) 5(3) *Comparative Studies in Society and History* 304; Ong (n 5).

²⁵ Eisenstein (n 5).

²⁶ Mireille Hildebrandt, 'Governance, Governmentality, Police and Justice: A New Science of Police' (2008) 2 *Buffalo Law Review* 557.

of *multi-interpretability* that in turn generates a specific type of contestability.²⁷ In the next section I will elaborate the critical importance of this specific affordance of text-driven ICIs, as it anchors some of the core tenets of the rule of law – that cannot be taken for granted when other ICIs take over.

Modern positive law – or law-as-we-know-it – can be understood as an ordered system of written and unwritten legal norms (including both rules and principles). As legal normativity thus builds on the affordances of a text-driven ICI, we need to inquire into the implications of these affordances for legal protection. I will do this by investigating how these affordances relate to the nature of legal norms and to what lawyers call ‘legal effect’ and ‘legal certainty’.

The nature of legal norms

Legal norms can be distinguished as either rules or principles, where rules either apply or do not apply and principles are norms that help to decide which one of conflicting rules applies and guides their interpretation in case of doubt. Principles are unwritten in that they form what Dworkin has called the implied philosophy of the law, they safeguard the moral integrity of the law, which is both more and less than logical consistency.²⁸ By acknowledging the role of implied but unwritten principles Dworkin also highlights the role of legal norms in the case that legal rules do not apply, or in the case that legal rules are vague, leaving more room for interpretation. In the U.S. this refers to the difference between rules (less flexible) and standards (more flexible). In either case (gaps in legislation or a broad space for interpretation) legal norms leave room for discretion (intended or unintended). Such discretion, according to Dworkin, does not allow for arbitrary action or decision-making. Instead it requires that we develop the kind of practical wisdom that builds on experience rather than logic, while taking into account what choice of action

fits with the *implied philosophy* of the relevant legal domain.²⁹ Principles have a moral connotation, where they demand that legitimate trust is rewarded, equal cases are treated equally, or e.g. demand that a morally unacceptable outcome of the application of a legal rule precludes its application. The implied philosophy of the law therefore translates to the *inner morality of the law* that prevails within the context of the rule of law.³⁰

Legal norms do not describe the regularity of behaviour, they are not about how people will probably behave, but about how they are legitimately expected to behave. The legitimacy here does not refer to one’s personal morality but to the legitimacy offered by the rule of law. Legal norms inform human interaction as they instigate mutual expectations of the kind of behaviour that is appropriate, befitting or acceptable from a legal point of view. This brings us close to Wittgenstein’s concept of *rule following*,³¹ and to Hart’s *internal aspect of rules*.³² What matters here is a sense of obligation, though not necessarily in the moral sense. In our case what matters is a sense of being bound to obey valid legal norms, based on the understanding that this also applies to other members of the same jurisdiction. As Raz would say, there is an *exclusionary reason* for those subject to the law to follow legal rules.³³ This exclusionary reason basically states that people do not need to find or develop a justification for abiding by the law; they are bound to obey the applicable legal norm as part of the legal architecture they are subject to. In other words, they have a second order reason (the law must be obeyed) to buy into the first order reason (a specific legal norm must be followed). This relieves people from having to find good reasons for following each and every legal norm that applies to them.

The fact that people are expected to obey the law, simply because it is the law, is core to the law. Not only, however, in the sense that it obliges those subject to the law to act in accordance with the law, but also in the sense that a legal

²⁷ Ihde (n 2); Pierre Lévy, *Les technologies de l’intelligence. L’avenir de la pensée à l’ère informatique* (La Découverte 1990); Ricoeur (n 13).

²⁸ Ronald Dworkin, *Law’s Empire* (Fontana 1991).

²⁹ Ronald Dworkin, *Taking Rights Seriously* (5th, Harvard University Press 1978).

³⁰ Lon L Fuller, *The Morality of Law* (Revised, Yale University Press 1969).

³¹ Charles Taylor, ‘To Follow a Rule’ in Charles Taylor (ed), *Philosophical Arguments* (Harvard University Press 1995).

³² H L A Hart, *The Concept of Law* (Clarendon Press 1994).

³³ William A Edmundson, ‘Rethinking Exclusionary Reasons: A Second Edition of Joseph Raz’s ‘Practical Reason and Norms’ (1993) 12(3) *Law and Philosophy* 329.

norm that cannot be disobeyed does not qualify as a legal norm.³⁴ This has led Brownsword to the conclusion that computational systems that disable non-compliance cannot qualify as part of the law, but should be seen instead as ‘technological management’.³⁵ The duty to obey the law assumes that one can choose to violate a legal norm, e.g. in pursuing one’s own interest, out of negligence or due to a conflict between one’s moral compass and one’s legal obligation. This possibility does not deny the duty to obey to law; it is its precondition.

The force of law: ‘legal effect’

Speech act theory highlights that when people speak out, they are not necessarily describing a reality (propositional logic) but may actually be in the process of creating a reality. To understand this, we can differentiate between brute facts (such as a stone, a table, a building) and institutional facts (such as a marriage, a university, or a contract of sale).³⁶ Institutional facts are created by *speech acts* that have a *performative effect*: they institute what they refer to. What they refer to comes into existence through the reference. Whether this is the case does not depend on brute force but on subsequent language usage by others. If everyone acts as if two people are married, the declaration that they are married turns out to have performative effect: they are actually married.

The notion of performative effect also derives from the work of Butler,³⁷ who underpins the idea that qualifying a person as a specific kind of person (e.g. male or female) is more than describing a given fact. It entails that from this moment onwards the person ‘counts as’ that kind of person, while the speech act actually *institutes the fact* of being either male or female (or, depending on the way the language developed, more fluid notions of gender). Obviously, this performative effect is not generated by a single person reshaping the world to fit their own preferences. The effect will depend on others following the same rules of language and thus qualifying brute or institutional facts in similar manners. Note that we are back to semi-

ology and semiotics, and the tension between language as a given system of intra-linguistic references and speech as a way to use those intra-linguistic references to *shape* an extra-linguistic reference. Remember that getting the link between intra- and extra-linguistic references right is what determines the extent to which we can successfully navigate our physical and institutional world. The idea of the performative effect of speech acts does not imply that anything goes but demonstrates the space for change and for novel qualifications. It shows how this depends on both human interaction and the mutual expectations raised by being thrown into a specific language domain.

The point here is that what lawyers call *legal effect* operates at precisely this level. It is not equivalent with the brute force of the monopoly of violence, nor with a mechanical application of deontological rules. Legal effect refers to the performative effect that positive law attributes whenever specified legal conditions apply. For instance, if I steal, I become punishable; if I engage in the processing of personal data in a way that violates the General Data Protection Regulation, the processing is unlawful, and I can be ordered to abstain from further processing by a court of law. Legal effect means that a certain action, state of affairs or condition counts as ‘lawful’, as a ‘tort’, as a ‘criminal offence’, or e.g. as ‘my property’, resulting in ‘the state having no right to stop me from acting that way’, in ‘a duty to pay compensation’, in me being ‘punishable’, or e.g. in ‘the legal power to sell’ the property. These ‘effects’ are not ‘caused’ or ‘influenced’ by certain legal conditions being fulfilled; they are *attributed*. And this attribution is part of a specific ‘language game’, as Wittgenstein would have it.³⁸ Legal effect depends on the symbolic level of a language that carves out meaning in the pragmatist sense: anticipating what consequences the use of the concept, sentence, or, in this case, the rule will have. And this consequence is the performative effect of a speech act, not the causal effect of a physical behaviour.

³⁴ Roger Brownsword, ‘Neither East Nor West, is Mid-West Best?’ (2006) 3(1) SCRIPT-ed 15.

³⁵ Roger Brownsword, ‘Technological management and the Rule of Law’ (2016) 8(1) Law, Innovation and Technology 100.

³⁶ John L Austin, *How To Do Things With Words* (2nd, Harvard University Press 1975); John Searle, *The Construction of Social Reality* (The Free Press 1995); Winch (n 1).

³⁷ Judith Butler, *Giving an Account of Oneself* (Fordham University Press 2005).

³⁸ Ludwig Wittgenstein, *Philosophical investigations: the German text, with a revised English translation* (GEM Anscombe tr, Blackwell 2003).

Facing data-driven and code-driven technologies in law

Legal certainty, legality and the rule of law

In his doctoral thesis, Diver develops the notion of *computational legalism*, building on the difference between legalism and legality.³⁹ In *Smart Technologies and the End(s) of Law* I have described *legalism* as what you get when you rank legal certainty above justice and purposiveness, instead of framing all three as antinomian goals of the law (which aligns with *legality*).⁴⁰ In this final section I will briefly argue that legal certainty, provided it is understood as an element of legality, resists codification in the computational sense, thus ruling out computational legalism. Based on the previous section, it should be clear that this particular interpretation of legal certainty cannot be taken for granted, as a new discourse on law could easily align ‘legal certainty’ with the kind of computational legalism Diver refers to.⁴¹ Law may develop into a different kind of ‘language game’ (as Wittgenstein demonstrates for other discourses), eliminating the kind of legal protection that is offered by the ambiguity, multi-interpretability and contestability of natural language.

Clearly, the concept of legal certainty arose in the context of the increased multi-interpretability that is inherent in the ICI of printed text and the concomitant imposition of legal rules (whether by way of legislation in continental Europe or by way of case-based reasoning in common law traditions). As such rules are written down and ‘gain’ the force of law (capable of attributing ‘legal effect’), their interpretation becomes crucial for all those who need to navigate the real world, which is to a large extent institutional and dependent on legal constructs (such as contract, property, tort, criminal offence, individual rights and standing in a court of law). Where the meaning of valid legal rules is unclear, it becomes more difficult to navigate the institutional space we inhabit, and since rules expressed in language are inherently multi-interpretable, we

invented mechanisms to achieve closure. One such mechanism is the decision of a court that decides the meaning by specifying the legal effect, depending on relevant circumstances. Courts thus provide legal certainty, though even the courts cannot alter the adaptive nature of human language. This means they must take into account changing circumstances and anticipate that the same rule in a new environment may be ineffective as to the goals it aimed to protect.

Legal certainty must therefore be understood as offering room for argumentation and contestation, before providing closure,⁴² noting such closure depends on performative speech acts that must be reiterated to remain in force. For the same reason, the importance of the *positivity of law* that decides the validity of legal norms must not be confused with legal positivism that ranks law’s positivity above its ability to achieve justice and its instrumentality in achieving policy objectives.⁴³ And again, for the same reason, legality must not be confused with legalism.

Closure

The rule of law, understood as an institution ensuring that nobody is above the law, while offering sufficient foreseeability as well as contestability, requires legal norms that build on the open texture of natural language, avoiding both the over- and under-inclusiveness of disambiguated computer code. For now, that means we should foster the adaptive nature of text-driven law before exchanging it for the code-driven nature of computational law. It also means that we should welcome computational technologies that contribute to challenging legalism, authoritarian rule by law and arbitrary rule by those in power. I hope this journal will contribute both to the preservation of text-driven law and to computational technologies capable of challenging unwarranted legalism.

³⁹ Laurence Edward Diver, ‘Digisprudence: The Affordance of Legitimacy in Code-as-Law’ (PhD thesis, University of Edinburgh School of Law 2019).

⁴⁰ Hildebrandt, *Smart Technologies and the End(s) of Law. Novel Entanglements of Law and Technology* (n 22) ch. 7.

⁴¹ See for example Paul Lippe, Daniel Martin Katz, and Dan Jackson, ‘Legal by Design: A New Paradigm for Handling Complexity in Banking Regulation and Elsewhere in Law’ (2015) 93(4) *Oregon Law Review* 833.

⁴² Jeremy Waldron, ‘The Rule of Law and the Importance of Procedure’ (2011) 50 *Nomos* 3.

⁴³ Mireille Hildebrandt, ‘Radbruch’s Rechtsstaat and Schmitt’s Legal Order: Legalism, Legality, and the Institution of Law’ (2015) 2(1) *Critical Analysis of Law* 42.

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A reply: Codification can (but need not) limit the flexibility of language

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What is the role of text in the law, and what are its implications for how computational systems might impact the law? These are the key questions explored in this article, which provides a principled analysis of the role of language in legal discourse embedded in the active practices of those interpreting and applying the law, the impact of written text on the dissemination and application of legal rules and principles, and the importance of ambiguity, multi-interpretability, and contestability of legal text.

From the standpoint of an AI researcher working on developing communication mechanisms for artificial agents that need to coordinate their activities, I fully agree with the author's pragmatist perspective on the semantics of language, which coincides with widely held views in my own research community that view language as action. In the simplified setting of simulated worlds with a much narrower range of social interactions, we investigate computational mechanisms to align divergent individual interpretations, reason about semantic ambiguity and evolutionary changes in meaning, and, ultimately solve a problem of coexistence among members of a society through the use of communication. As the author points out, legal systems in human society involve many similar processes, albeit at a much higher level of complexity.

The article seems to suggest that computational systems used in a legal context may pose a threat to the future of text-driven law, due to their excessive reliance on static 'codification' and rigid interpretation of legal text. To assess this suggestion, it is important to consider new 'legal tech' tools from three different points of view.

The first one follows on from my remarks above, and is simply the argument that there is a deep awareness of the plasticity of language and its importance in the world of AI research. Though we are still far from using such advanced

techniques in practical applications legal professionals would use, there is a growing body of work that seeks to advance them, and I would posit that while the article is rightly concerned about the impact of current technologies in practice, this is a problem that can be addressed in principle.

The second one is based on a rather straightforward seeming, but important point, which is that computational tools used in a legal context, at least the ones I presume the author mostly refers to, consume and produce text themselves. There are of course great differences between computer-generated and human-generated text in that it is not the result of human but algorithmic reasoning (which may often be just based on pattern recognition, statistical prediction, or other forms of algorithmic manipulation), but it is important to recognise that human experts and laypersons interacting with such systems will also communicate with it, albeit in far more limited and formal ways. This means that — again, in principle — users can be very much aware of the capabilities (and non-human character) of these systems and adjust their expectations accordingly to make the best possible use of these tools. Nonetheless, I agree with the authors' remarks that technologies have, in themselves, the capacity to create emergent norms, and there are many well-documented cases of the detrimental effects that can be brought about when we rely too much on computational tools in many domains.

The third and final viewpoint is one that focuses on institutions and their power. In practice, while the meaning of legal text evolves in a bottom-up way through many iterations of interpretation, critique, and debate to which many legal experts, and commentators contribute, the nature of the law is also heavily shaped through top-down processes of creating and imposing rules, principles, and procedures through institutions that are also 'technologies' used by

modern societies. The article acknowledges this aspect, referring to text as a 'clever cybernetic', but I believe there is a parallel here to computational technologies that is worth investigating. In both cases, there is clearly a risk that their normative diverges from the collective views and interests of those affected by them — but an optimistic view might suggest that data-driven technologies could, at least if used carefully, empower stakeholders in terms of transparency and accountability.

While these arguments are deliberately biased towards a 'techno-utopian' view, their purpose is primarily to ex-

amine some of the points raised by the article in order to generate more debate. With increasing (and, in many ways, rather uncontrolled) use of advanced ICT tools in the law, whether we will be able to put them to beneficial use is still an open question, and I believe this journal will play a vital role in bringing different disciplines together to influence this debate. This article has definitely set a high bar for future contributions by providing a conceptual framework that provides an important foundation for future scientific exchange on the wider subject.

Author's response: Normative alterity

Mireille Hildebrandt

The point of the article is that text-driven institutions such as law generate another type of normativity, or normative alterity, compared to code- and data-driven applications such as 'legal technologies'. This normative alterity is related to the formalisation that is inherent in computational law. Data-driven (machine learning) tools may indeed generate the opposite of a rigid interpretation, due to their claimed ability to personalise the application of the law to an unprecedented level.¹ Nevertheless, the article argues that the flexibility of such data-driven systems differs from the adaptiveness of text-driven law, which is bounded by the requirement of legal certainty and kept in check by affordances specific to text-driven infrastructures, notably understandability, transparency and contestability.

This relates to the first viewpoint taken by the replier, who finds that normative alterity is not necessarily a problem because, whereas human language may be intractable now, in theory it is not incomputable so at some point the problem can be solved. I wonder whether the computability of language is not an assumption that begs the question. Even if true, this would not entail that the computational rendering of human language is equivalent with human language, as a simulation is not what is simulated, and a model is not what is modelled. And what if the same 'thing' can be made computable in different ways, depending on the purpose; what if there is not one — universally

valid — right way of computing the same speech act? How could those subject to computational law contest choices made by developers that make a difference?

The replier's second point of view suggests that legal technologies will be producing human language. This, I believe, is a fallacy. Though these systems may generate words, sentences, paragraphs, and successfully imitate genre, mood and expertise, they will not understand anything. This is not different for NLP systems that consume and produce text. Even GPT-3 has no inkling of the meaning of its utterances,² because other than humans it does not navigate a physical and an institutional world, has no intent, does not care, cannot suffer and has nothing to lose. The output of these systems is not language but a simulation thereof.

In his final argument, the replier rightly asserts that both legal institutions and computational technologies function as cybernetic tools, while both run the risk of imposing normative frameworks that diverge from 'the collective views and interests of those affected by them'. This raises a shared concern: how to inscribe checks and balances into computational architectures similar to those between legislature, public administration and courts, that are not merely 'a clever cybernetic', but also safeguard the countervailing powers afforded by their text-driven nature?

¹ Paul Lippe, Daniel Martin Katz, and Dan Jackson, 'Legal by Design: A New Paradigm for Handling Complexity in Banking Regulation and Elsewhere in Law' (2015) 93(4) *Oregon Law Review* 833.

² Gary Marcus and Ernest Davies, 'GPT-3, Bloviator: OpenAI's Language Generator Has No Idea What It's Talking About' (MIT Technology Review 2020) (<https://www.technologyreview.com/2020/08/22/1007539/gpt3-openai-language-generator-artificial-intelligence-ai-opinion/>) accessed 17 September 2020.