BOOK REVIEW

SMART TECHNOLOGIES AND THE END(S) OF LAW

Mireille Hildebrandt

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That law and technology contest each other is not itself a new contribution to legal scholarship. However, the scope of this literature is all too frequently concerned only with questions of whether we can, or to what extent we should, regulate the complexities of our technologically infused lives. Mireille Hildebrandt's[1] book goes beyond the concerns of misuse from policy makers and regulators that too often seek to protect "without any sense of what we are protecting" (p. 130), instead embarking on a rich and considered exploration of our shifting interactions with emerging technologies and the regulatory problems therein. It is a philosophical pursuit that is as much a study of our legal lives in relation to technological artefacts, as it is a critical inquiry into the nature of modern law. In both respects, it is highly successful.

Hildebrandt's work is situated within ongoing efforts to transform our environment and our uses of technologies. As she terms it, we are entering the onli*fe* – "a new kind of world that we are still discovering" (p. 42). In a recent collection of essays concerning the "Sentient City", new media researcher Martijn de Waal writes that there comes a time in the application of new (smart) technologies when the "debate on how to apply new technologies surpasses the boundaries of the professions involved."[2] This is the inescapable context of scholarship within which Hildebrandt's book finds itself, the embrace of which provides one of the most compelling aspects of the text.

Accordingly, Hildebrandt introduces her work with a series of short narratives of "Diana's onli*fe*' world." By cleverly sidestepping the underdeveloped and frequently changing particulars of today's smart technologies, the reader is invited into an imaginary of smart futures. In this world (one that's close to an apotheosis of smart technologies), the reader's mind will turn to the circumstances of their own lives and likely themselves generate many of the discourses that are to be engaged with throughout the book. Here, the introduction acts both as a mechanism through which to sensitise those readers that are unfamiliar with the state of advanced technologies to the issues they generate, as well as provide a conceptual lens through which to anchor the in-depth analysis to follow.

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[2] M de Waal, "The Urban Culture of Sentient Cities: From an Internet of Things to a Public Sphere of Things" in M Shephard (ed) *Sentient City: Ubiquitous Computing, Architecture, and the Future of Urban Space* (Cambridge, MA: MIT Press, 2011) 190-195, at 190.

The book adopts a three part structure, beginning with Part I in which there is an exploration of the identity of smart technologies, specifically their varying levels of "smartness". Through an agential analysis of technologies (Chapter 2) from sequence-driven "determinist" algorithms to "complete agents" capable of adapting and surviving in an environment, the reader is introduced to the range of technologies we might consider smart. Within this chapter, Hildebrandt makes clear that her major preoccupation is with technologies that exhibit what she terms a "mindless agency", those capable of anticipating our behaviours (the "complete agents"). As our world is populated by these agents that are capable of reading us, we in turn must learn how to read them as we shift from using technologies to interacting with them.

In Chapter 3, the author formally introduces the concept of the onli*fe*[3] – a new space within which our encounters are mediated by the increasing capabilities of smart technologies to read, profile and anticipate our behaviours. Our expectations and perceptions of our environment are addressed as Hildebrandt challenges us to re-explore human agency in this technologically transformed environment. Importantly, this chapter introduces an idea carried throughout the text. Namely, that the affordances of the information and communication infrastructures (ICIs) of the time (such as spoken language and the written word) have long affected our ability to perceive our environment and regulate our behaviours. Thus, as we encounter "novel" ICIs, our selves and our institutions are affected and we need to respond accordingly.

In Part II, Chapter 4 begins by returning to the introductory narrative of Diana's onli*fe* world and addressing the "digital unconscious". In what the author describes as an "intermezzo", this short twelve-page chapter serves to problematise the earlier narratives, proposing a collection of open questions and speculations which lend themselves more readily to a codification of "threats" from the onli*fe* existence. Offering these issues under the categories of privacy, identity, digital sorting and the presumption of innocence, Hildebrandt is careful to avoid any identification with existing legal frameworks. Instead, her analysis operates on the premise that "we cannot assume that current legal articulations match the issues that are at stake" (p. 76), reserving comment on these articulations (past, current and forthcoming) for later chapters.

In Chapter 5, Hildebrandt continues to resist formal legal analysis, opting instead to carry forward the codification of issues established in the previous chapter having now been "translated into a set of threats to the substance of core values of Western democracies" (p. 16). What follows is a pairing of issues from the onli*fe* world with fundamental rights (e.g. the presumption of innocence and pre-emptive criminal profiling, discrimination and digital sorting). Largely removing established legal frameworks from the analysis allows the author to freely explore the role of privacy and its varying interpretations. Accordingly, though some readers might be expecting more critical engagement of major regulatory frameworks such as the General Data Protection Regulation (that concerns data collection and processing practices at the core of the capabilities of autonomous computing), analysis of this kind is reserved for later chapters. Instead, what is presented is a nuanced discussion that addresses questions of

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[3] This term has been adopted elsewhere, most notably in a recent collection of essays within which Hildebrandt authors a chapter. See L Floridi (ed), *The Onlife Manifesto* (Cham: Springer International Publishing, 2015).

how we should interpret these concepts within the onli*fe* world. For example, Hildebrandt rejects a notion of privacy that values only the protection of private life, opting instead to see it as a public good. We are told that in the face of pre-emptive computing, the affordances of privacy and their value to democracy are threatened. Furthermore, new decision-making mechanisms (e.g. in how a smart environment adapts) provide problems of transparency and contestability. In Chapter 6, practices of privacy remain at the core of the analysis as we are introduced to the practices of Japanese culture and tradition(s) that engage the affordances of the environment and exhibit an alternative relationship to "things" and how we encounter them. Japanese culture, we are told, has developed a different mind-set to autonomous computing and the "hybrid and nonhuman animation" that may prove valuable when building Western ideas of privacy in a world populated by agents capable of pre-emptive computing.

In Part III, the author delivers a legal perspective on the implications of smart technologies explored beforehand. In many ways this is the most satisfying part of the book, with the legal analysis having been reserved to this point enabling the reader to have been prepared by previous chapters to engage with some of the fundamental legal questions of smart technologies. Providing first an account of the concept(s) of law (Chapter 7), the co-existence and co-constituency of law and technology is explored (Chapter 8). Here, we return to the affordances of ICIs as Hildebrandt posits that the characteristics of law are an affordance of the script and printing press upon which it is built (e.g. the externalisation of legal norms by inscription). We cannot, she explains, necessarily expect that these affordances carry forward in the next ICI (that of the onli*fe* world). Hildebrandt provides a thought-provoking description of what she terms the seven "hallmarks" of modern law developed as affordances of the printing press. Addressing, for example, the externalisation, reach and complexity of law, we are engaged with a conversation about the nature of the Rule of Law more so than any given legal framework. Here, the "odd and paradoxical" (p. 183) attributes of law, such as our hesitation on the meaning of a legal precept, are highlighted and pit against the contrasting qualities (e.g. certainties, unambiguity) of computational thought. What happens to law in the onli*fe* world once re-enacted through the new ICI?

Readers expecting more in the way of legal futures may find comfort from this latter part of the book, as chapters 9 and 10 close the text by examining the value of a fundamental rights approach to the legal frameworks of data protection and privacy, and the potential for Legal Protection by Design (LPbD). Hildebrandt describes this as "a necessary re-articulation of the aims of justice, legal certainty and effectiveness in the emerging onli*fe* world" (p. 17). Though part of this chapter explores LPbD through Data Protection by Design (DPbD) and the General Data Protection Regulation proposals (before the final text was passed in April 2016), the findings remain broadly applicable. This is, she writes, neither about coercing compliance nor replacing written law. Instead, LPbD should mean "mechanisms to steer people into certain behaviours must be made visible and contestable" (p. 219). Readers familiar with the literature will find Hildebrandt's comments on the distinction between her vision of LPbD and techno-regulation of particular interest.

In sum, the depth and precision with which Hildebrandt provides her insights is uncommon and striking, making this book (as law professor Andrew Murray remarks in his rear-cover endorsement) one of the few "must reads" within the field. Its content is provocative and challenging, having an appeal that is sure to reach far beyond the field of legal scholarship to accompanying disciplines of computing, science and philosophy from which the book draws. Likewise, it is clear that Hildebrandt benefits from working between the disciplines of law and computer science, with her experience in computer science departments evident in the way in which she sensitively translates between, and explores, the separate logics of law and technology.

In her prefatory remarks, Hildebrandt states that "I have become convinced that computer science and law share a sensitivity to architecture" (p. xii). For those of us who share this view, or for those who hold an interest in any of the wide range of disciplines that are concerned with technological and regulatory development, this book will prove a challenging and exciting read.

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