THE LAWS OF TECHNOLOGY AND THE TECHNOLOGY OF LAW

Kieran Tranter[*]

This article maps responses to the question of law and technology. While there is much literature that considers law and technology, deeper connections have been under-appreciated. In particular, the general and historical dimension of the legal engagement with technology, the cultural and social mediations between law and technology, and the technology of law itself have been neglected. Through mapping where these connections have been made, the following contributions to this special issue of the *GLR* on 'The Laws of Technology and the Technology of Law' can be appreciated.

The Poverty of Law and Technology

Lawyers and legal institutions regularly face technological change. The public record is populated by numerous crisis events where a popularly conceived emerging technology called forth law to channel, regulate or prohibit anticipated technological futures. This rich history, coupled with the ever-present concern of technological change, would suggest that there is a detailed scholarly reflection on the relationship between law and technology. However, closer inspection reveals that this is not necessarily the case.

I have argued recently that much of the scholarship on law and technology manifests what I have termed the 'law and technology enterprise'.[1] This names the basic frame that structures how law and technology are usually thought, researched and written about by lawyers. At its core, it is a positivist orientation. The lawyer-scholar's task is to talk law. Cultural anxieties surrounding certain technologies can be seen as being channelled into the legal domain through lawyer-scholars identifying 'gaps' within jurisdictions. The task appears to be identification of what law there *is* and what law there *should be*. It is in this speculative moment of what should be that the positivism of the law and technology enterprise becomes particularly evident. The lawyer-scholar usually shies away from the substance of law reform. Instead, legal issues are identified and legal

[*] Senior Lecturer, Griffith Law School, Gold Coast and Managing Editor, *Griffith Law Review* (2007–11). This special issue was derived from a symposium of the same title held at the Griffith Law School, Gold Coast, 3 May 2011. I would like to thank Professor Bill MacNeil for his leadership of that symposium and also Madonna Adcock and Eddie Ngaluafe for their organisation and support.

[1] Tranter (2011).

complexities raised, but then the question remains of *what* law is deferred to policy-makers, the community or a vague and inclusive 'us'.[2]

This founding positive orientation across the vast bulk of legal scholarship on technology has produced an impoverished and under-theorised engagement of law with technology, and technology with law. In the desire to be 'practical' in their speculation, lawyer-scholars have shut off thinking, writing and significantly legislating about technology. In particular, three trajectories of law and technology have mostly been ignored. The first is in its populist focus on the future impacts of an emergent technology, where there has been a restriction on wider considerations of technology generally as well as historical perspectives. The second is that the positivist rules and gaps focus of the law and technology enterprise has not allowed exploration of the cultural and social mediations between law and technology. Third, the way in which technology seems to bring out the law as a form of technology has been ignored.

Most writing on law and technology follows populist hopes or anxieties for a specific technology. The focus has been on a specific technology within a specific moment. The volumes of cyberlaw scholarship from the mid- to late 1990s, or the similar volumes on cloning after the announcement of the birth of Dolly from the late 1990s to early 2000s, stands as testament to the tendency. Law and technology are often considered as urgently, and unprecedentedly, coming together in the present, but the focus has been the future. Through this populist focus, a double set of silos can be identified. The first is that 'technology' is rarely considered more broadly than as a specific technological thing. Cyberlaw considered the growth of ICT in the late 1990s and projected an ICT future whose legality needed thinking about in the then present.[3] The cloning literature considered Dolly the herald of future human cloning for therapies and reproduction that needed prohibiting and regulating.[4] Rarely were both considered together as two contemporary technological crisis events challenging existing forms of law, ethics and governance.[5] This piecemeal, issue-specific – indeed, case by case – thinking about law and technology has produced a piecemeal, issue-specific set of knowledges about law and technology. The connections, the wider picture, the similar challenges, the richness that can come from a wider purview of law and technology have not been forthcoming. Even with Laurence H Tribe's work on law and technology generally from the early 1970s as a foundation,[6] this direction of a 'general theory of law and technology'[7] has

2 Tranter (2011), p 69.

3 Price (2001).

4 Tranter (2010).

5 Bennett Moses (2008).

6 Tribe (1973).

7 Bernstein (2007).

only recently begun to be pursued by scholars like Art Cockfield,[8] Lyria Bennett Moses[9] and Roger Brownsword.[10]

This opens to the second silo through which the populist focus has limited law and technology. Not only has technology generally not been considered, but the past of law and technology has frequently been ignored. Too often, the lawyer-scholar writes about technology only with speculative eyes for the future. What has not be considered is that law has a long, deep and complex *past* engagement with technology.[11] As such, much law and technology scholarship seems flat. Issues and concerns that have been considered by generations past are rediscovered and presented as new. The excitement and concern of the internet in early cyberlaw as something beyond the jurisdiction of state law mirrors similar anxieties that space lawyers wrote about in the immediate aftermath of Sputnik, yet whatever lessons could be seen in the process whereby outer space became legalised were not considered by cyberlawyers in their debates on the jurdification of cyberspace.[12] While there are a small number of scholars who pursue the history of law and technology,[13] the future-focused positivism of the law and technology mainstream means consideration of a historical perspective has been limited.

The idea of a legal history – or, more precisely, histories – of law and technology opens to the second way of considering law and technology that has not been encouraged. Technology and law interact within human doing. Culture/society is the place where law and technology meet. However, the positivism of the law and technology enterprise has not presented a sophisticated lens through which the social and cultural mediations of law and technology can be appreciated. Instead, the focus has been on the old legal science of finding and commenting on the law that *is*. How technology calls law, or how law calls technology, or how the controls of law and technology influence and/or are confounded by human doing in the world have not been considered by legal scholars. In short, there has yet to be a strong interdisciplinary tradition of law and technology. That is not to say that there are not scholars who have begun to draw upon regulatory theory,[14] criminology,[15] technology studies,[16] science fiction criticism[17] and social

8 Cockfield (2005); Cockfield and Pridmore (2007).

9 Bennett Moses (2003, 2007a, 2007b)

10 Brownsword (2008a, 2009).

11 Mandel (2007).

12 Beebe (1999).

13 Yu (2006); Bernstein (2004); Sherman and Bently (1999); Dworkin (1996); Tranter (2005).

14 See, for example, Brownsword (2008b); Brownsword and Somsen (2009), pp 4–48; see also Demissie (2010); De Hert and Erika (2010).

15 Bowling et al (2008).

research[18] to gain better understandings of the relationship between law, technology and culture/society, in order not only to better understand and regulate technology but also to conceive of technology as regulation.[19]

Since Lawrence Lessig's *Code*,[20] the idea that control, order and regulation are integral to technology itself has become a basic point within law and technology scholarship. Hardwired, or potentially hardwired, into technological things are use limits. What has not been appreciated widely is that the vision of law emerging from the law and technology enterprise is law as an instrument of public policy. It is a malleable law, capable in its plasticity of regulating technological futures. It is a law that can be made, unmade and changed. It is a law that can establish new rights, institutions and property, and also a law that can change or destroy existing rights, institutions and property.[21] What can be seen is that the law called forth by technology is too often a technologicalised form of law.[22] The predominant theory of law in the orthodox scholarship is instrumental and sovereign. At a fundamental level, law is conceived as a process, a machine that can be deployed. This creates a series of under-thought dimensions for law and technology. The foremost is the suitability of law as technology to deal with technology. From this, a whole set of complications can be identified – ranging from the essential technicity of the contemporary West to the politics, ethics and correspondence to the real of a vision of law as technology.

Richer Explorations of Law and Technology

It is in this context of the poverty of law and technology that the contributions to this symposium all address several of these under-made connections and silences in thinking about law and technology. Lyria Bennett Moses, Art Cockfield and Kieran Tranter continue their explorations of a 'general theory of law and technology' through seeing connections across technologies and across time.

Bennett Moses draws upon her earlier scholarship on law and technology, but turns her focus to the technicality of institutional law

---

16 See, for example, Cockfield (2005) (using macro-accounts of society and technology from technology studies); Bernstein (2006) (using studies of technology diffusion); Mandel (2005) (using sociological data on public attitudes to technologies); Tranter (2010) (using media analysis on cloning and stem cell research in Australia).

17 Tranter (2007a); Travis (2011).

18 For example, Caudill used interviews with scientists and other stakeholders involved in pollution controversies: Caudill and Curley (2009); Caudill (2009). Caudill also uses textual analysis in examining 'sociotechnical' arguments in tobacco litigation. See Caudill (2005). See also Murphy (2009), who also draws upon ethnography of women involved in artificial reproduction.

19 Koops (2008); Hildebrandt (2008).

20 Lessig (1999).

21 Tranter (2011), pp 69–70.

22 Tranter (2007b).

change. While most law and technology scholarship writes with a law reform agenda, the actual mechanisms and institutions whereby calls for law in technology's wake become transmuted into law has yet to be considered. Bennett Moses presents the first jurisdiction-wide survey of these mechanisms in Australia, beginning the process of thinking and reforming the vehicles of law reform.

Cockfield also continues his existing studies, with a focus on the diverse technologies that circulate around the concept of privacy. Cockfield establishes how piecemeal single-technology laws can be seen as inadequate to maintain community expectations of privacy in the digital and surveillance-orientated Western information state. As an alternative, he examines as a case study the recent reference document of the Office of the Privacy Commissioner of Canada, which sets out a technique for the elements of the Canadian information state to balance privacy against other priorities.

Tranter continues his dissection of the poverty of law and technology scholarship by focusing on three past law and technology literatures. He identifies a fundamental place for science fiction images, narrative and tropes in the imagining of space, IVF and virtual world futures. Notwithstanding the textual emphases on being practical within these literatures, they can be seen as transmitting science fiction – particularly space opera, dystopian science fiction and cyberpunk – into law. He suggests that these three sub-genres have a conservative commonality in projecting the desirability of the nature/culture divide. As an alternative, he offers a reading of Octavia E Butler's *Xenogenesis* trilogy as an alternative myth-form for the mediation of law and technology.

It is this fragility of the nature/culture divide within the contemporary West that can be seen within the contributions of Charles Lawson, Karen O'Connell and Jennifer Chandler. In pursuing what can be seen as interdisciplinary law and technology scholarship, each draws upon technology studies to position technology as radically mediating the established nature/culture divide to show that law does not necessarily need to catch up in a doctrinal sense, but that law *and* technology continually remake becoming. The horizons of the future and the lived of the present change through the creative interactions of law and technology.

Lawson considers the juridification of becoming through a focus on the legal techniques that are allowing biotechnology entities to retain ownership and control of what he calls the 'nature future' of seeds. For Lawson, deployment of contract in various ways by intellectual property owners has allowed a capturing. These instruments project the owner's control beyond the traditional statutory rights, allowing enduring monopolistic exploitation over a biological nature future.

O'Connell pursues the shaky nature/culture of the brain/mind. Reviewing recent technological changes that are allowing the once 'black box' of the brain to be regarded as a readable neuro-chemical system, she considers two rival contemporary alternatives: the 'controlled brain' and the 'open brain'. Her strong preference is for the open brain, a brain that is

embodied and embedded, a becoming entity and not the de-corporal chemically manipulated controlled brain. Armed with these conceptions, she sees how the Australian *Disability Discrimination Act 1992* (Cth) and its operation are complicated by what can be seen as its twin embrace of the open and controlled model. While much in the Act suggests an 'open brain' ideal of embedded identity, it also enacts a control model of norm/deviant with the expectation that 'deviant' functioning and behaviour should be technically mitigated.

O'Connell's contribution mirrors the nature/culture exploration of Jennifer Chandler. Like the movement from black box to open brain, Chandler considers the technical interventions that are challenging the rational, autonomous consenting agent of biomedical ethics. Through considering the ways that economic, social/cultural and legal networks render the use and adoption of certain technologies 'obligatory', Chandler constructs a much more embedded, cybernetic image of the agent of biomedical ethics. Her work posits a more complex technologically mediated figure at the nexus of law and medicine.

The technical keeps refiguring in the contributions discussed so far. Bennett Moses and Cockfield consider the technology of law at the moment of law and technology – Bennett Moses the technical mechanism of law reform and Cockfield the administrative 'software' for enhanced privacy in the decision-making of the information state. Tranter considers the technical role of law literature in transmuting science fiction futures into law; Lawson's focus is entirely the technical instruments through which biotech is coming to own becoming; O'Connell's is on the understandings of the brain that have become technically possible and how that technically mediated knowledge manifests and explains the technical operation of Australian discrimination law; while Chandler reboots the agent of biomedical ethics as not the old, naturally free, consenting patient, but the technically programmed, obliged cyborg. It is this focus on technicity and law that is explored by Joseph Pugliese, James Parker, Richard Mohr and Francesco Contini, and Megan Richardson and Marc Trabsky. Each contribution explores the technicity of law, the ramifications of the technical substrata of law and the legal substrata of technology.

Pugliese maps the 'indissociable relation between law, technology and human subjects'[23] in a specific techno-legal moment: the US program of drone killings in the 'war on terror'. Pugliese shows that the technicity of drones combines with the technical necessities of the law of war to achieve parentheses – a bracketing off in time, space and responsibility for the taking of life, for the drones, satellites, control stations and the US-based human 'pilots'. Yet for Pugliese the total ensemble of a killing entity arching across half the globe suggests prosthetics – a cyborg entity where, notwithstanding states of technical lags and exceptions, the human and technology and law are coexistent. In a fundamental challenge to the instrumentality that defines the usual discourses of law and technology, Pugliese's proposed frame of the

[23] See Pugliese, p 956 of this issue.

prosthetics of law allows law and technology to be seen more clearly as intertwining constitutes of the biopolitical West. Pugliese's reprogramming of how to see and think the law and technology interface, on the intertwining, coexistent constitutes of law, technology and life, can also be seen in Parker's contribution.

Parker maps sound – precisely, the functions and technological mediations in the International Criminal Tribunal for Rwanda trial of musician Simon Bikindi. Bikindi's trial prioritised sound – it was alleged that Bikindi's music and singing incited genocide – and as such provides a clear moment for what Parker terms 'acoustic jurisprudence'. Through a series of focused engagements with sound, technology and law in the trial, from the soundscape of the court and the fragmented, technical invasiveness of listening alone but together of simultaneous translation, Parker suggests that justice has a tempo and rhythm, and specifically international war crimes tribunals sound stilted, flat and delayed. Parker's connecting the practice of law with its technological substrate via sound exposes a hitherto silence in law and technology. Like Pugliese, his mapping provides another rich direction for the future of law and technology studies.

The indissociable relations of law and technology of Pugliese and Parker are also evident in Mohr's and Contini's contribution. Like Parker, their focus is the technical substratum of the court process and the changes and challenges to agency occurring through the technical migration of these processes from the paper and analogue to the electronic and digital. They examine three case studies: the English system 'Money Claim Online'; the Italian 'Trial Online'; and the Australian speed camera infringement system. Each study revels a complexity of law and technology. The English system reveals the functionality of broad authority and the technical grafting of the system on an existing private process for identification of persons and money transfer. The Italian system shows the trap of over-legalising and over-technicity, and the Australian system demonstrates that its convenience masks its formal legality behind the illusions of a civil bill. Each potentially disrupts the established mechanics of notice and identity that allow agency in the place of law. In their contribution, Mohr and Contini emphasise the assemblages of law, technology and the social.

Richardson and Trabsky return to *Victoria Park Racing and Recreation Grounds Company Ltd v Taylor*.[24] The 1930s case from the High Court of Australia represents a key moment in the juridification of radio. Concerned with the attempt of racecourse owners to prohibit radio stations from broadcasting horse races without permission where the radio stations were observing the race from neighbouring properties, the return of Richardson and Trabsky connects both with the history of law and technology and the technicity of law. Faced with a novel situation, the court was split – not only regarding the final decision, but also about the appropriate judicial technique to be applied. Ultimately, the majority resisted calls for judicial legislation, leaving a space both for private agreement between parties and the

[24] *Victoria Park Racing and Recreation Grounds Company Ltd v Taylor* (1937) 58 CLR 479.

mechanisms of the regulatory state (both of which happened). Modernity with its modest technical role for the judiciary was affirmed. The minority, interestingly, both looked backwards to a more, pre-modern common law perspective as the culture of the community and forward to the policy-orientated techniques of judicial innovation of the more contemporary, possibly 'post-modern' court.[25] The moment that law was called to decide technology, the technicity of law became prioritised.

Postscript

This issue of the *Griffith Law Review* marks an end to my period as Managing Editor. For five years, I have had the privilege of contributing to the theoretical, critical, responsible and creative knowledge about law and legal phenomena. In this time, the *Review* has grown substantially both in size and also, I would like to think, quality and impact. Both the number of manuscripts received and the rejection rates have increased dramatically. I do like to think that the award of A* in the 2010 ERA exercise by the Australian Research Council – the highest rank for any journal, demarking it as a leading international journal in the field – was strong external validation of the *Review*'s strength and reputation that has grown over the years.

These successes are because of the strong team of people who have contributed to the *Review*. Foremost, Hayley Valiantis as the Administrator of the *Review* has done a stellar job in growing the journal. The technical side of editing and publishing a journal is complex and changing, and Hayley has done a fabulous job of owning and working these changes. This issue also marks the end of Hayley's role as Administrator, and I farewell her with the sure knowledge that the sense of commitment and innovation that she has shown as Administrator will ensure her success in the future.

I would also like to thank Sue Jarvis, the *Review*'s long-serving Production Editor, and thank her for her patience with me in learning about publishing as a publisher and not just an author. I would also like to thank the various leaders of the Griffith Law School over the past years – Rob McQueen, Paula Baron and Richard Johnstone – for their support in the role, and the many members of the International Editorial Board who have advised and assisted.

I would also like to thank my long-serving colleagues amongst the Academic Editors who have been with me and the *Review* for the past five years – Afshin A-Khavari, Alan Ardill, Kylie Burns, Karen Schultz, Bronwyn Statham and Roshan de Silva Wijeyerantne – for their work, comments and support.

I wish the incoming management team of Bill MacNeil, Tim Peters and Ed Mussawir the very best wishes for the future of the *Review*, and I look forward to the future contribution that the *Review* can make to *thinking differently* and *different thinking* about law.

---

[25] Tranter (1998).

References

Secondary Sources

Barton Beebe (1999) 'Law's Empire and the Final Frontier: Legalizing the Future in the Earlyorpus Juris Spatialis' 108 *Yale Law Journal* 1737.

Lyria Bennett Moses (2003) 'Adapting the Law to Technological Change: A Comparison of Common Law and Legislation' 26 *University of New South Wales Law Journal* 394.

Lyria Bennett Moses (2007a) 'The Legal Landscape Following Technological Change: Paths to Adaption' 27 *Bulletin of Science, Technology and Society* 408.

Lyria Bennett Moses (2007b) 'Recurring Dilemmas: The Law's Race to Keep Up with Technological Change' 7 *Journal of Law, Technology and Policy* 239.

Lyria Bennett Moses (2008) 'The Application of Property Law in New Contexts: From Cells to Cyberspace' 30 *Sydney Law Review* 639.

Gaia Bernstein (2004) 'Accommodating Technological Innovation: Identity, Genetic Testing and the Internet' 57 *Vanderbilt Law Review* 965.

Gaia Bernstein (2006) 'The Paradoxes of Technological Diffusion: Genetic Discrimination and Internet Privacy' 39 *Connecticut Law Review* 241.

Gaia Bernstein (2007) 'Towards a General Theory of Law and Technology' 8 *Minnesota Journal of Law, Science and Technology* 441.

Ben Bowling et al (2008) 'Crime Control Technologies: Towards an Analytical Framework and Research Agenda', in Roger Brownsword and Karen Yeung (eds), *Regulating Technologies: Legal Futures, Regulatory Frames and Technological Fixes*, Hart.

Roger Brownsword (2008a) *Rights, Regulation and the Technological Revolution*, Oxford University Press.

Roger Brownsword (2008b) 'So What Does the World Need Now? Reflections on Regulating Technologies', in Roger Brownsword and Karen Yeung (eds), *Regulating Technologies: Legal Futures, Regulatory Frames and Technological Fixes*, Hart.

Roger Brownsword (2009) 'Regulating Human Enhancement: Things Can Only Get Better?' 1 *Law, Innovation and Technology* 125.

Roger Brownsword and Hans Somsen (2009) 'Law, Innovation and Technology: Before We Fast Forward – A Forum for Debate' 1 *Law, Innovation and Technology* 1.

David S Caudill (2005) '"Sociotechnical" Arguments in Scientific Discourse: Expert Depositions in Tobacco Litigation' 24 *Review of Litigation* 1.

David S Caudill (2009) 'Legal Responses to Body Burdens: Discourses on Low-Dose Toxicity' 18 *Griffith Law Review* 259.

David S Caudill and Donald E Curley (2009) 'Strategic Idealization of Science to Oppose Environmental Regulation: A Case Study of Five TMDL Controversies' 51 *Kansas Law Review* 251.

Arthur J Cockfield (2005) 'Towards a Law and Technology Theory' 30 *Manitoba Law Journal* 382.

Arthur J Cockfield and Jason Pridmore (2007) 'A Synthetic Theory of Law and Technology' 8 *Minnesota Journal of Law, Science and Technology* 475.

Paul De Hert and Ellyne Erika (2010) 'The Law and Ethics of Belgian Biobanking: A Reversal for the Logic of Regulation' 2 *Law, Innovation and Technology* 27.

Hailemichael Teshome Demissie (2010) 'Is Beneficent Regulation the New Better Regulation? Nano-Regulation in the Wake of the "New Better Regulation" Movement' 2 *Law, Innovation and Technology* 115.

Roger B Dworkin (1996) *Limits: The Role of the Law in Bioethical Decision Making*, Indiana University Press.

Mireille Hildebrandt (2008) 'A Vision of Ambient Law', in Roger Brownsword and Karen Yeung (eds), *Regulating Technologies: Legal Futures, Regulatory Frames and Technological Fixes*, Hart.

Bert-Jaap Koops (2008) 'Criteria for Normative Technology: The Acceptability of "Code as Law" in Light of Democratic and Constitutional Values', in Roger Brownsword and Karen Yeung (eds), *Regulating Technologies: Legal Futures, Regulatory Frames and Technological Fixes*, Hart.

Lawrence Lessig (1999) *Code and Other Laws of Cyberspace*, Basic Books.

Gregory N Mandel (2005) 'Technology Wars: The Failure of Democratic Discourse' 11 *Michigan Telecommunications and Technology Law Review* 117.

Gregory N Mandel (2007) 'History Lessons for a General Theory of Law and Technology' 8 *Minnesota Journal of Law, Science and Technology* 551.

Thérèse Murphy (2009) 'The Texture of Reproductive Choice: Law, Enthnography, and Reproductive Technologies', in Thérèse Murphy (ed), *New Technologies and Human Rights*, Oxford University Press.

Monroe E Price (2001) 'The Newness of New Technology' 22 *Cardozo Law Review* 1885.

Brad Sherman and Lionel Bently (1999) *The Making of Modern Intellectual Property Law: The British Experience, 1760–1911*, Cambridge University Press.

Kieran Tranter (1998) 'Waltzing Matilda: A Semiotic Reading of *Wik*' 16 *Law and Context* 49.

Kieran Tranter (2005) '"The History of the Haste-Wagons": The *Motor Car Act 1909* (Vic), Emergent Technology and the Call for Law' 29 *Melbourne University Law Review* 843.

Kieran Tranter (2007a) '"Frakking Toasters" and Jurisprudences of Technology: The Exception, the Subject and Techné in *Battlestar Galactica*' 19 *Law and Literature* 45.

Kieran Tranter (2007b) 'Nomology, Ontology and Phenomenology of Law and Technology' 8 *Minnesota Journal of Law, Science and Technology* 449.

Kieran Tranter (2010) 'Biotechnology, Media and Law-Making: Lessons from the Cloning and Stem Cell Controversy in Australia 1997–2002' 2 *Law, Innovation and Technology* 51.

Kieran Tranter (2011) 'The Law and Technology Enterprise: Uncovering the Template to Legal Scholarship on Technology' 3 *Law, Innovation and Technology* 31.

Mitchell Travis (2011) 'Making Space: Law and Science Fiction' 23 *Law and Literature* 241.

Laurence H Tribe (1973) 'Technology Assessment and the Fourth Discontinuity: The Limits of Instrumental Rationality' 46 *Southern California Law Review* 616.

Peter K Yu (2006) 'Of Monks, Medieval Scribes, and Middlemen' *Michigan State Law Review* 1.

Case

Victoria Park Racing and Recreation Grounds Company Ltd v Taylor (1937) 58 CLR 479