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## Toward a General Theory on Law and Technology: Introduction

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## Symposium

### Toward a General Theory of Law and Technology:

#### Introduction

Gaia Bernstein\*

Creators of new technologies seek to signal a message of novelty and improvement. Instinctively, many of us want to endorse the message and believe that this new technology will improve our lives. There is an intuitive desire to believe that a new technology is special and unique. Consequently, regulators, judges and scholars tend to look at each new technology in isolation. For example, scholars tend to focus on the study of either communications law or the law of medical technologies, often specializing in the legal study of a specific technology, such as the Internet or genetics.<sup>1</sup> Similarly,

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\* Associate Professor of Law, Seton Hall University School of Law. First, I would like to thank my co-organizer and colleague Frank Pasquale. I also owe many thanks to Jim Chen, the instigator of this symposium. Jim Chen heard the panel I organized on the topic at the 2006 Annual Law and Society Meeting and offered us two stages. First, this symposium volume in the Minnesota Journal of Law, Science & Technology. Second, the opportunity to conduct a virtual symposium on the “The Law and Technology Theory Blog,” which he launched as part of the Jurisdynamics blog network, available at <http://techtheory.blogspot.com/>.

1. See for example, Lawrence Lessig’s writings in the area of cyberlaw, which include: LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999), LAWRENCE LESSIG, THE FUTURE OF IDEAS (2001). Also, see Lori Andrews’ writings on medical technologies, particularly on genetics, which include: LORI ANDREWS, FUTURE PERFECT: CONFRONTING DECISIONS ABOUT GENETICS (2001), Lori B. Andrews & Jordan Paradise, *Gene Patents: The Need*

legislatures often formulate special legislation to deal with specific technological threats. An example of a recent trend is legislation targeting privacy threats imposed by cell-phone cameras.<sup>2</sup>

For a brief time during the 1970s, different winds were blowing in legal academia. Lawrence Tribe in a book entitled, *Channeling Technology through Law*, discussed the “Technological Assessment” approach.<sup>3</sup> Technology assessment undertakes a broader approach to the evaluation and regulation of new technologies that does not focus on specific technologies. Yet, in the decades to follow, the legal approach to new technologies did not follow this lead, instead it remained technology-specific.

The goal of this symposium was to inquire whether the assessment and reaction to each new technology in isolation is the best mode for technology regulation or whether a broader outlook would better serve the social accommodation of new technologies. Specifically, the scholars participating in the symposium set out to inquire whether the compartmentalized mode of regulation should be replaced or supplemented by a general theory of law and technology. Such a theory would provide a generalized legal approach to the use and adoption of new technologies, specifying guidelines for approaching instances in which a new technology threatens to destabilize existing social institutes, values, and norms. For example, legislators and scholars are currently debating the suitable solution for resolving the privacy threats imposed by the incorporation of Radio Frequency Identification (RFID) systems tags into passports.<sup>4</sup> A generalized approach could provide guidelines based on prior instances in which technologies disrupted social values or on cases in which the value of privacy was threatened by new technologies.

The symposium papers examine two main issues. The first

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for *Bioethics Scrutiny and Legal Change*, 5 YALE J. HEALTH POL'Y L. & ETHICS 403 (2005).

2. See, e.g., FLA. STAT. § 810.145 (Supp. 2006); 720 ILL. COMP. STAT. 5/26-4 (Supp. 2006); WASH. REV. CODE Wash. § 9A.44.115 (2007).

3. See LAURENCE H. TRIBE, *CHANNELING TECHNOLOGY THROUGH LAW* (1973). See also Laurence H. Tribe, *Legal Frameworks for the Assessment and Control of Technology*, 9 MINERVA 243 (1971).

4. For an overview of the topic, see, Elec. Privacy Info. Ctr., *Radio Frequency Identification (RFID) Systems*, <http://www.epic.org/privacy/rfid> (last updated Apr. 13, 2007).

meta-theme is why would it be desirable to develop and utilize a general theory of law and technology? What weaknesses in the current system warrant a turn to a more generalized approach? The significance of justifying the need for an adoption of a general theory of law and technology stems (at least partly) from concerns about the dangers that could accompany the implementation of such a generalized approach. The developed guidelines could be used to reach decisions at an early stage of the diffusion of a new technology. At that point, the potential of a new technology is often partly unknown. Use of general principles derived from the regulation of previous technologies could stifle technologies from reaching their full potential. Consequently, it was imperative to explore at the outset whether the limitations of the current system warrant an effort to formulate general principles that could at least supplement the existing system.

The second meta-theme is what should be the form of a general theory of law and technology? The development of a comprehensive general theory of law and technology could only occur over time. The purpose of the inquiry within the framework of this symposium was to highlight potential approaches to the formulation of such a theory. A general theory of law and technology could adopt broader or narrower principles, that is principles that are applicable to all technologies, or guidelines that differentiate between categories of technologies or technological controversies involving destabilizations of different social values. Further, different perceptions of human nature and of its relationship to technology could produce different theories of law and technology. The array of proposals developed by the symposium's participants underscore the richness of the subject as a future research topic and the important decisions that will need to be made in order to formulate a general theory.

Two of the participating scholars: Lyria Bennett Moses and Daniel Gifford address the first symposium meta-theme—is there a need for a general theory of law and technology? Both scholars underscore the importance of a generalized approach to the study of the interactions between law and technology.

Lyria Bennett Moses defines technology as that which overcomes the physical. She highlighted the uniqueness of technological change, arguing that its distinctiveness explains the need for a separate theorization of its relationship to law. Particularly, Bennett Moses justifies the need for the development of a separate theory of law and technology by

showing the ways in which (i) technological change differs from social change; and (ii) changes in technological knowledge are distinguished from transformations in other forms of knowledge.<sup>5</sup>

Daniel Gifford demonstrates the importance of a generalized view of law and technology by illuminating the clearer vision derived from a broader look at the interactions between law and technology. Gifford focuses on the interactions between intellectual property law and technology. By looking beyond specific doctrines and technologies he provides a description of the interactions between intellectual property laws and competition laws. Further, using this broader outlook Gifford identifies existing gaps and failures in law and market interactions.<sup>6</sup>

Andrea Matwyshyn and Kieran Tranter address both meta-themes. They derive their view of what a theory of law and technology should look like from their analysis of the weaknesses of the prevailing compartmentalized approach.

Andrea Matwyshyn reviews three of the key techno-legal debates of the last decade. She demonstrates that the compartmentalized approach, which focuses on a specific technology or legal issue, fails to resolve questions as to whether a new technology was special or whether a current regulatory regime could be applied to a new innovation. Further, Matwyshyn argues that compartmentalization obstructs the discussion of users' perceptions and development. She offers a generalized approach to technological controversies that focuses on human development. Specifically, she suggests that a non-linear view of development should replace the currently used linear approach. While a linear approach presumes homogeneity in consumer population regarding individuals' sophistication and comfort level with technology, a non-linear approach accounts for the effects of the environment. Through the case study of the Children's Online Privacy Protection Act (COPPA) she illustrates the shortcomings of a regulatory approach driven by linear assumptions about development.<sup>7</sup>

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5. Lyria Bennett Moses, *Why Have a Theory of Law and Technological Change*, 8 MINN. J. L. SCI. & TECH. 589 (2007).

6. Daniel Gifford, *Law and Technology: Interactions and Relationship*, 8 MINN. J. L. SCI. & TECH. 571 (2007).

7. Andrea Matwyshyn, *Technology, Commerce, Development, Identity*, 8 MINN. J. L. SCI. & TECH. 515 (2007)

Kieran Tranter argues that much of law and technology scholarship articulates elements of the Frankenstein myth. The myth features the rational scientist as too preoccupied with techniques to consider the wider context of his illicit creation and consequently the produced monster (and technology) is presented as external to humanity. Yet, Tranter explains that at the same time, the invocation of law to save society involves the re-inscription of the Frankenstein myth. Law is considered technological, a discourse about techniques and effectiveness and the human becomes a mere animal. Tranter suggests that the Frankenstein myth should be replaced with a view that situates technology within being. Specifically, he suggests two alternative approaches that could enrich the study of law and technology. The first proposal is a historical project that would involve a detailed study of networks that manifest in particular technologies and specific moments of law-making. The second approach is a focus on the sophistication of contemporary culture and its relationship to the development of a highly dynamic technological life.<sup>8</sup>

Several of the symposium's participants focus exclusively on the second meta-theme—proposing a potential form for a theory of law and technology. The approaches differ in their level of generality. Gregory Mandel, Arthur Cockfield and Jason Pridmore suggest a theory that is applicable to all technologies, while Gaia Bernstein and Frank Pasquale undertake a relatively narrower approach. Gaia Bernstein suggests principles that apply to categories of technologies according to their technological characteristics. Frank Pasquale differentiates between technologies based on their societal impact; focusing on technologies that destabilize equality.

Gregory Mandel proposes general guidelines for interactions between law and technology that can be applied across a broad spectrum of technologies. Mandel focuses on insights derived from historical and current technologies, and proposed three main guidelines. First, Mandel suggests that using preexisting legal categories by analogizing the function of a new technology to that of an older technology is not workable. Instead, he proposes focusing on the rationale behind the categorization system to determine whether an analogy is

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8. Kieran Tranter, *Nomology, Ontology and Phenomenology of Law and Technology*, 8 MINN. J. L. SCI. & TECH. 449 (2007).

relevant. Second, he warns that decision-makers should beware of being blinded by a technology. They should look beyond the technology at stake and focus on the legal issues. Finally, Mandel cautions that future disputes are often unforeseen and, therefore, decision-makers should remain cognizant of the limits of their knowledge.<sup>9</sup>

Arthur Cockfield and Jason Pridmore offer a synthetic theory of law and technology, which combines instrumental theories that treat technology as a neutral tool and substantive theories that emphasize the control that technology can exert over individuals. Cockfield and Pridmore propose that a synthetic theory of law and technology should first consider whether technological change threatens a traditional interest that the law seeks to protect. If traditionally protected legal interests are threatened, legal analysis should adopt a more contextual approach that is less deferential to doctrinal analysis.<sup>10</sup>

Gaia Bernstein suggests that focusing on the technological characteristics that influence a technology's diffusion—its social adoption process—could provide fine-tuned policy guidelines that differentiate between categories of technologies. Bernstein relies on two case studies involving genetic discrimination and collection of personal information on the Internet. Both cases concern a problematic relationship between privacy and diffusion. Bernstein shows that two goals could be achieved by focusing on diffusion characteristics. First, the identification of the diffusion characteristics that made a technology susceptible to the problem could be useful in predicting in advance which technologies are likely to fall prey to similar controversies. Second, understanding the role of diffusion characteristics could serve to formulate policy guidelines, contributing not only to resolving the controversies at hand, but also future disputes involving similar technologies.

Frank Pasquale focuses on technologies that destabilize the value of equality. Pasquale argues that despite common belief that technological advances enhance equality, in fact, many technologies actually enhance social strife. He proposes that the law should not cripple the development of these

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9. Gregory Mandel, *History Lessons for a General Theory of Law and Technology*, 8 MINN. J. L. SCI. & TECH. 551 (2007).

10. Arthur Cockfield & Jason Pridmore, *A Synthetic Theory of Law and Technology*, 8 MINN. J. L. SCI. & TECH. 474 (2007).

equality-threatening technologies. However, he suggests that inequality enhancement should be a quality of technology salient enough to lead to some systematic prescriptions for legal intervention.<sup>11</sup>

The primary objective of this symposium was to commence a dialogue on the topic of a general theory of law and technology within the community of law and technology scholars. This symposium only revealed the tip of the iceberg of an important issue that warrants further attention. Much research remains to be done and many debates are yet to be had. It is my hope that this symposium provides the impetus for a continued conversation.

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11. Frank Pasquale, *Technology, Competition and Values*, 8 MINN. J. L. SCI. & TECH. 607 (2007).