

From regulating technologies to governing society: Towards a plural, social and interactive conception of law

Michael Anthony C. Dizon

Abstract

Over the past two decades, the challenges of controlling the internet and regulating the information society have been seen through different and opposing schools of thought. At first, people with a liberal bent believed that the internet could not be regulated. This utopian view was later countered by those who held that not only could the internet be regulated but it could be regulated almost perfectly. The problem with the first view is that it falls into the trap of technological determinism (or the belief that the internet is autonomous and it cannot and should not be regulated), while the second one falls into the trap of instrumentalism (the assumption that technology is completely subject to human agency and control). This paper argues that a way out of the twin regulatory dilemmas of technological determinism and instrumentalism requires a paradigm shift in how regulation of technology is understood within computer-mediated societies. The issue of technological regulation is less about the control of technology per se and is more concerned with the governance of and participation in the information society itself. What is therefore required is an interdisciplinary socio-techno-legal approach to problems brought about by new technologies that takes account of the condition of interlegality that exists within and across transnational social networks.

I. Legal challenges of new technologies

Over the past two decades, legal scholars have tried to understand and account for the effects of new technological developments on the legal order, and what the role of law is and will be in an increasingly technological and connected society. Initial writings about law and information and communications technology (ICT) had a liberal-utopian bent and saw technologies such as the internet as having profound and positive effects on society.¹ It was widely believed that new ICTs would naturally produce greater efficiency, creativity and democracy in the inter-networked society.² Some even believed that the internet was not and could not be regulated by state governments.³ However, these utopian visions were quickly replaced by a pessimistic-realist point of view that saw technology as not inherently good, and that ICT could be manipulated by states and private interest groups to advance their own goals to the detriment of society at large.⁴ Noveck describes this technological dystopia as a

¹ See David Johnson and David Post, 'Law and Borders - the Rise of Law in Cyberspace' (1996) 48 Stan. L. Rev. 1367.

² See Yaman Akdeniz and Clive Walker, 'Virtual democracy' [1998] Public Law 489-506.

³ See John Perry Barlow, 'A Declaration of the Independence of Cyberspace' 8 February 1996 <<http://homes.eff.org/~barlow/Declaration-Final.html>> accessed 19 October 2009.

⁴ Graham Longford and Steve Patten, 'Democracy in the Age of the Internet' (2007) 56 U.N.B.L.J. 5, 6; Bert-Jaap Koops, 'Criteria for Normative Technology: The Acceptability of "Code as Law" in Light of Democratic and Constitutional Values' in R Brownsword and K Yeung (eds) *Regulating Technologies: Legal Futures, Regulatory Frames and Technological Fixes* (Hart Publishing, Oxford 2008) 158; see Christophe Geiger, 'The

'new era of information without knowledge, privacy without intimacy and networks without community'.⁵ The currently dominant view of law and ICT is the reinforcement model, which believes that ICTs offer nothing substantially new to society and that new technologies will simply be adapted or co-opted by existing political or social institutions and processes.⁶ As succinctly summarised by Dimaggio et. al.: 'As with other topics, the literature about politics on the internet has progressed through three stages: unjustifiable euphoria, abrupt and equally unjustifiable skepticism, and gradual realization that Web-based human interaction really does have unique and politically significant properties'.⁷ It should be noted though that the shifting schools of thought - from utopian to dystopian and then to reinforcement – are also nothing new. These three visions of law and technology have been brought up and debated time and again over the last 50 years and are well documented in the field of science and technology studies ('STS'). The old, circuitous debates about the relation between technology and society - between old versus new, good versus bad, anarchy against technocracy – are all part of a more elemental conflict between the opposing poles of technological determinism and instrumentalism. Technological determinism believes that technology is the single most important change in society, while instrumentalism assumes that technology is completely subject to human agency.

This paper argues that a way out of the twin regulatory dilemmas of technological determinism and instrumentalism requires a change in how the relations between law and ICT are understood within computer-mediated and enhanced societies. It is necessary to avoid the use of these theoretical dichotomies that always leads to the unhelpful and redundant dispute of determinism versus instrumentalism. This is so because the issue of technological regulation is less about the control of technology per se and should be more concerned with governance and the participation by different social actors in the global information society. The author believes that a more plural, social and interactive conception of law will be helpful in understanding the interaction between law and ICT in an

answer to the machine should not be the machine: safeguarding the private copy exception in the digital environment' (2008) 30 E.I.P.R. 121.; see Lawrence Lessig, *Code: version 2.0* (Basic Books, New York 2006); see Jonathan Zittrain, *The Future of the Internet And How to Stop It* (Yale University Press, New Haven & London 2008); see Jack Goldsmith and Tim Wu, *Who Controls the Internet?: Illusions of a Borderless World* (Oxford University Press, New York 2006).

⁵ Beth Simone Noveck, 'Paradoxical Partners: Electronic Communication and Electronic Democracy' (2000) 7 *Democratization* 18, 34.

⁶ Philip Agre, 'Real-Time Politics: The Internet and the Political Process' (2002) 18 *The Information Society* 311, 316-317; Longford and Patten (n 4) 9.

⁷ Paul DiMaggio, Eszter Hargittai, W. Russel Neuman and John Robinson, 'Social Implications of the Internet' (2001) 27 *Annual Review of Sociology* 307, 319.

increasingly technological and juridified society.⁸ What is therefore required is an interdisciplinary socio-techno-legal approach to the challenges and issues brought about by new technologies that takes account of the condition of legal pluralism that exists within and across the transnational, digital networked environment. This paper will explain how the concept of legal pluralism can be a valuable analytical tool in advancing an interdisciplinary and integrated approach in studying the laws of the global inter-networked society.

II. Plural legality

There is clearly a need to go beyond the problematic and severely limited dichotomy of technological determinism and instrumentalism. Technological determinism is based on two main premises: '(1) that the technological base of a society is the fundamental condition affecting all patterns of social existence and (2) that changes in technology are the single most important source of change in society'.⁹ The problem with technological determinism is that it fails to take into account the 'limitations of the technology itself, social adaptation of technology, or problems inherent in the vision itself'.¹⁰ On the other hand, instrumentalism is the belief that technology is always subject to the supremacy of human agency, and that technology can simply be manipulated by state governments to achieve certain desired ends. It holds the view that 'technology is a simple tool - an instrument of the social, political, or economic group or individual that chooses to develop or use a certain technology'¹¹ and that 'technology is completely neutral, solely serving the intended purposes held for it by its users'.¹² Instrumentalism has similarly been criticized for failing to take into account the fact that technology is 'embedded in larger social processes'¹³ and new technologies are often adapted or co-opted within the organizational or social fields in which they are introduced – especially by those who hold dominant positions in society.¹⁴ Feenberg categorises these competing determinist and instrumentalist arguments into either the substantive and instrumental theories of technology.¹⁵ The problem with using these top-down theories and

⁸ See Jacques Ellul, *The Technological Society* (Vintage Books, New York 1964); see Gunther Teubner, *Juridification of social spheres: a comparative analysis in the areas of labor, corporate, antitrust, and social welfare law* (De Gruyter, Berlin 1987); see Andrew Feenberg, *Critical Theory of Technology* (Oxford University Press, Oxford 1991) 4.

⁹ Langdon Winner, *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought* (MIT Press, Massachusetts 1977) 76.

¹⁰ Margaret Elliot and Walt Scacchi, 'Mobilization of software developers: the free software movement' (2008) 21 *Information Technology & People* 4, 9-10.

¹¹ Arthur Cockfield and Jason Pridmore, 'A Synthetic Theory of Law and Technology' (2007) 8 *Minn. J. L. Sci. & Tech.* 475, 479.

¹² Cockfield and Pridmore (n 11) 480.

¹³ Agre (n 6) 315.

¹⁴ Agre (n 6) 315.

¹⁵ Feenberg (n 8) 5-8.

dichotomies is that they fail to capture and explain the complexity, multiplicity and plurality – in other words, the general messiness – of the interactions between law and ICT. It is the author's view that it is not enough to superficially change the label of dichotomy with the more acceptable term 'dialectic' nor advocate for the proverbial middle ground. What is urgently required is to go beyond these binary oppositions and monolithic theories and adopt a more plural, social and interactive approach to legal studies. This hybrid and interdisciplinary approach to law and ICT may prove valuable in gaining a better understanding of what regulation and governance means within the context of the networked environment.

1. Beyond code is law

A good starting point for a more plural conception of law in relation to ICT is Lessig's four modalities of regulation. For Lessig, regulation is the sum of the interactions between four distinct but interdependent modalities that constrain behavior, namely - law, social norms, the market and architecture.¹⁶ His pronouncement that 'code is law'¹⁷ is a recognition that there are other laws besides state law that regulates and affects people's behaviours, and that other normative orders such as technical architecture are equally deserving to be called 'law' in their own right. As a result, technical codes are also the proper subjects of legal study. Lessig even considers a state's constitution, which is considered the supreme law of the state, to be a form of technology - 'an architecture, not just a legal text but a way of life - that structures and constrains social and legal power, to the end of protecting fundamental values'.¹⁸ A social actor, therefore, is not only subject to the influence of state law, but also other normative orders such as social norms, economic factors and software code.

Lessig's four modalities of regulation are not completely new since other scholars have written about different social forces affecting people and societies.¹⁹ For example, Wiener states that regulation in its broadest sense is not 'a single kind of rule or strategy... In

¹⁶ Lessig (n 4) 121 and 123-124.

¹⁷ Lessig (n 4) 5.

¹⁸ Lessig (n 4) 4.

¹⁹ See Sally Falk Moore, 'Law and Social Change: The Semi-Autonomous Social Field as an Appropriate Subject of Study' (1973) 7 *Law & Society Review* 719, 719; see Jacques Ellul, 'The Technological Order' (1962) 3 *Technology and Culture* 394; see Andrew Feenberg, 'Escaping the Iron Cage, or, Subversive Rationalization and Democratic Theory' in R Schomberg (ed), *Democratizing Technology: Theory and Practice of Deliberative Technology Policy* (International Centre for Human and Public Affairs, The Netherlands 1999) 1; see Joel Reidenberg, 'Lex Informatica: The Formulation of Information Policy Rules Through Technology' (1997-1998) 76 *Tex. L. Rev.* 553; see Richard Sclove, 'Design Criteria and Political Strategies for Democratizing Technology' in R Schomberg (ed), *Democratizing Technology: Theory and Practice of Deliberative Technology Policy* (International Centre for Human and Public Affairs, The Netherlands 1999) 19.

reality, just as there are many different types of technologies, there are many different types of regulations. Different regulatory instruments... can have very different effects on technological change and other important consequences'.²⁰ Similarly, Feenberg, sees technology 'as a kind of social "legislation" affecting every aspect of our lives'.²¹ Software code indeed has a significant influence on society. Longford eruditely explains the regulatory power of code:

.... there is a *politics of code*; in so far as Internet architectures and software code *legislate* questions regarding how the Internet and the web are used, by whom and under what conditions.²²

.... As our daily lives are increasingly dependent upon, mediated through and enmeshed in the circuits of digital networks and computerized databases... we become subject to the terms and conditions of existence and action as laid down by code.²³

In any case, what is truly remarkable about Lessig's idea of 'code is law' is not what he said but the timing of when he said it. The truism of 'code is law' really struck a nerve because, in the digital age, software code is undoubtedly law and, in some cases, may even trump formal state law.²⁴ For example, Moore believes that 'Legislation is often passed with the intention of altering the going social arrangement in specified ways. The social arrangements are often effectively stronger than the new laws'.²⁵ 'Code is law' makes real sense to people who are living in an increasingly technologised society where computer architecture clearly has a significant impact and exerts a profound influence on people's behaviours. Lessig was not saying something new but what he was saying was palpably true for most people for the first time because of new and changing social conditions brought about by advances in technology. His statement would not have had the same impact if it were uttered at a time when the internet or computers were still not an ubiquitous part of people's everyday lives.

However, despite the potential of Lessig's four modalities of regulation, there has been a marked tendency on the part of people using his construct to still fall into the all too tempting trap of instrumentalism by believing that law and software code can be utilized by state governments as an uber form of techno-social engineering to control people's

²⁰ Jonathan Wiener, 'The regulation of technology, and the technology of regulation' (2004) 26 *Technology in Society* 483, 484.

²¹ Feenberg (n 8) 5.

²² Graham Longford, 'Pedagogies of Digital Citizenship and the Politics of Code' (2005) 9 *Techne* 68, 68.

²³ Longford (n 22) 71.

²⁴ John Griffiths, 'What is Legal Pluralism' (1986) 24 *J. Legal Pluralism & Unofficial L.* 2, 30.

²⁵ Moore (n 19) 723.

behaviours and influence other normative orders.²⁶ There is a common belief that the mere promulgation of normative rules through software code is an effective means for controlling social behaviour and that these techno-legal interventions will produce the desired results in accordance with the envisioned plans or designs.²⁷ However, the results of techno-legal interventions have proven to be unpredictable and uncontrollable. According to Weiner, there is a serious problem with a regulatory-interventionist approach to new technologies because

Regulation is treated as if it comes in one type and has only one effect on technology, like an engine transmission that can shift into only forward or reverse. In reality, just as there are many different types of technologies, there are many different types of regulations. Different regulatory instruments... can have very different effects on technological change and other important consequences.²⁸

This is true because those who are working under the instrumentalist-utopian mindset fail not only to consider the social embeddedness of technology, but the unpredictability and ambivalence of technology as well.²⁹ There is no way to reasonably predict how new technologies or technological regulations will affect society or how people will react to those changes. State regulators often neglect to take into account the important social dimension of law. What is therefore needed is a more actor-oriented and empirically-grounded approach to the study of law and ICT. This approach is less about seeing law and technology as a means for the state to regulate behaviour, but how plural legal orders (e.g., state law and computer code) influence the behaviour of but similarly arise from the interactions amongst diverse state and non-state actors belonging to different social fields. A more plural and social conception of law requires seeing social actors as being active subjects rather than merely passive objects of law and technology.

2. Legal pluralism

The concept of legal pluralism is very helpful in re-imagining a more plural and social conception of law. Legal pluralism is described 'as that state of affairs, for any social field, in which behaviour pursuant to more than one legal order occurs'.³⁰ Simply put, it is 'the presence in a social field of more than one legal order'.³¹ Legal pluralism is seen as a critical

²⁶ Griffiths (n 24) 33; see Lessig (n 4) 6, 127 and 130; see Reidenberg (n 19) 556, 569, 586 and 588.

²⁷ Dora Kostakopoulou, 'Floating sovereignty: a pathology or a necessary means of state evolution?' (2002) 22 O.J.L.S. 135, 138; see Jeff A. King, 'The pervasiveness of polycentricity' [2008] Public Law Spring, 101-124; see Reidenberg (n 19) 556, 569, 586 and 588.

²⁸ Wiener (n 20) 484.

²⁹ Andrew Feenberg, 'The Ambivalence of Technology' (1990) 33 Sociological Perspectives 35; Winner (n 9) 74; Ellul (n 19) 395; see Feenberg (n 8) 42-43.

³⁰ Griffiths (n 24) 2.

³¹ Griffiths (n 24) 1.

response to the ideology of legal centralism that inextricably binds law to the structures and processes of the modern nation-state.³² Legal centralism is the belief that

law is and should be the law of the state, uniform for all persons, exclusive of all other law, and administered by a single set of state institutions. To that extent other, lesser normative orderings, such as the church, the family, the voluntary association and the economic organization exist, they ought to be and in fact are hierarchically subordinate to the law and institutions of the state.³³

Legal pluralism then is the process of deconstructing the '[state] law-centeredness of traditional studies of legal phenomena' by examining 'the extent to which other forms of regulation outside of [state] law constitute law'.³⁴

The field sites of early works relating to legal pluralism were in the colonial setting where social scientists studied how local, customary or indigenous laws existed with or struggled against the 'civilised' laws brought and imposed by Western colonisers.³⁵ This early form of so-called weak, juristic and classical legal pluralism³⁶ was later criticized for being too state-centred.³⁷ Over the years, the conscious adoption of a more empirical and non-state-centred approach to the study of legal phenomena both in the colonial context and the experiences of developed countries gave rise to what is now referred to as strong, deep or new legal pluralism.³⁸ The concept of legal pluralism has broadened from the 'relations between colonized and colonizer to relations between dominant groups and subordinate groups, such as religious, ethnic, or cultural minorities, immigrant groups, and unofficial forms of ordering located in social networks or institutions'.³⁹ According to Griffiths, this new approach 'recognises that legal pluralism exists in all societies, that is, that there are multiple forms of ordering that pertain to members of a society that are not necessarily dependent upon the state for recognition of their authority'.⁴⁰ As Merry further states,

The new legal pluralism moves away from questions about the effect of law on society or even the effect of society on law toward conceptualizing a more complex and interactive relationship between official and unofficial forms of ordering. Instead of mutual influences between two separate entities, this

³² Griffiths (n 24) 1.

³³ Griffiths (n 24) 3-4.

³⁴ Sally Engle Merry, 'Legal Pluralism' (1988) 22 *Law & Society Review* 869, 874 and 889.

³⁵ See Anne Griffiths, 'Legal Pluralism' in R Banakar and M Travers (eds), *An Introduction to Law and Social Theory* (Hart, Oxford 2002) 290-291; see Merry (n 34) 874.

³⁶ Griffiths (n 35) 290; Merry (n 34) 871 and 872.

³⁷ See Griffiths (n 35) 292-293; see Merry (n 34) 869.

³⁸ Merry (n 34) 872; Griffiths (n 35) 302.

³⁹ Merry (n 34) 872.

⁴⁰ Griffiths (n 35) 302; see Merry (n 34) 873.

perspective sees plural forms of ordering as participating in the same social field.⁴¹

The strong or descriptive form of legal pluralism adopts a more 'social science perspective that embraces law as an empirical state of affairs'.⁴² This paper subscribes to the idea of strong legal pluralism and any subsequent reference to the term 'legal pluralism' pertains to this form.

An important related concept to legal pluralism is the idea of the 'semi-autonomous social field'.⁴³ According to Moore,

...the small field observable to an anthropologist be chosen and studied in terms of its semi-autonomy - the fact that it can generate rules and customs and symbols internally, but that it is also vulnerable to rules and decisions and other forces emanating from the larger world by which it is surrounded. The semi-autonomous social field has rule-making capacities, and the means to induce or coerce compliance; but it is simultaneously set in a larger social matrix which can, and does, affect and invade it, sometimes at the invitation of persons inside it, sometimes at its own instance.⁴⁴

A semi-autonomous social field, for example an online community of hackers, has internal norms that interact with or are influenced by state laws but these norms in turn impact and change state law. Whether they involve groups of cyber-dissidents, internet standardization bodies, or online communities,⁴⁵ internal rules and social norms of techno-social groups influencing and similarly being influenced by state laws is a common experience in the global information society. Of course, one must take care not to completely disregard or rule out the state and its laws. The state is still an important actor and state law remains a key social fact in understanding legal pluralism.⁴⁶ As Griffiths states: 'What is required is re-engaging with the state in ways which allow for it to be factored into ethnographic research as *an* element

⁴¹ Merry (n 34) 873.

⁴² Griffiths (n 35) 290.

⁴³ Moore (n 19).

⁴⁴ Moore (n 19) 720.

⁴⁵ See Kathy Bowrey, *Law and Internet Cultures* (Cambridge University Press, Melbourne 2005) 44; see Laurence R. Helfer and Graeme B. Dinwoodie, 'Designing Non-National Systems: The Case of the Uniform Domain Name Dispute Resolution Policy' (2001) 43 *William And Mary Law Review* 141, 149; see F. Gregory Lastowka and Dan Hunter, 'The Laws of the Virtual Worlds' (2004) 92 *Cal. L. Rev.* 1; see Andrew Jankowich, 'EULAW: The Complex Web of Corporate Rule-Making in Virtual Worlds' (2006) 8 *Tul. J. Tech. & Intell. Prop.* 1; see Gabriella Coleman, 'The Political Agnosticism of Free and Open Source Software and the Inadvertent Politics of Contrast' (2004) 77 *Anthropological Quarterly* 507, 512; see Samuel M. Wilson and Leighton C. Peterson, 'The Anthropology of Online Communities' 31 *Annual Review of Anthropology* 449, 453; Thomas Schultz, 'Carving up the internet: jurisdiction, legal orders, and the private/public international law interface' (2008) 19 *E.J.I.L.* 799, 836-837; see Ethan Katsh and others, 'E-Commerce, E-Disputes, and E-Dispute Resolution: In the Shadow Of "Ebay Law"' (2000) 15 *Ohio St. J. on Disp. Resol.* 705; see Leon E. Trakman, 'From the Medieval Law Merchant to E-Merchant Law' (2003) 53 *U. Toronto L.J.* 265.

⁴⁶ See Griffiths (n 35) 299.

for discussion but which does not focus on it as *the* primary point of reference from which such research commences'.⁴⁷

Despite the different and sometimes intense criticisms of legal pluralism, and there have been many throughout the years,⁴⁸ legal pluralism is extremely useful in understanding the complex relations between law and ICT. This is so because the object of legal pluralism has never been to define what law is but to describe, contextualize and situate the interactions amongst plural normative orders. It is less a theory but more of an analytic orientation to describe the existence of and the interaction amongst plural legal orders within a particular social field. Furthermore, legal pluralism is not an end in itself but is 'a starting point for looking at the complexities of cognitive and normative orders, and the even more complex ways in which these become involved in human interaction'.⁴⁹ Legal pluralism therefore is not an end but a beginning of a more open-ended, inclusive and dynamic process of understanding not what law is but who are the active subjects of law and where law is to be found. It is a bottom-up, empirical approach to the study of legal phenomena. When Lessig uses his four modalities of control to describe the normative orders of cyberspace, he is in fact describing the condition of legal pluralism in the ICT field. Legal pluralism is a key concept in developing a hybrid, socio-techno-legal approach to law and ICT because it allows one to see the complexity, multiplicity and plurality of interactions between and amongst multiple social actors and networks.

III. Socio-techno-legal studies

Viewed from the perspective of legal pluralism, the 'relations between state law and other normative orders now appear very complicated, requiring attention to history, human agency, local contexts, and culture'.⁵⁰ It is necessary then to study law in relation to and within the context of the network society.⁵¹ It should be noted though that a lot has already been said about the relationship technology and society in STS and other related fields. Similarly, much research has been done on issues relating to law and society in the field of socio-legal studies. Interestingly though, there have not been many studies that combine all

⁴⁷ Griffiths (n 35) 302.

⁴⁸ See Brian Tamanaha, 'The folly of the "social scientific" concept of legal pluralism' (1993) 20 *Journal of Law and Society* 192; see Simon Roberts, 'Against legal pluralism: Some reflections on the contemporary enlargement of the legal domain' (1998) 42 *Journal of Legal Pluralism* 95; see Gunther Teubner, 'The Two Faces of Janus: Rethinking Legal Pluralism' (1992) 13 *Cardozo Law Review* 1443.

⁴⁹ Franz von Benda-Beckmann, 'Who's Afraid of Legal Pluralism' (2002) 47 *Journal of Legal Pluralism* 37, 39-40.

⁵⁰ Merry (n 34) 884.

⁵¹ See Andrew Murray, *The Regulation of Cyberspace: Control in the Online Environment* (Routledge-Cavendish, Abingdon 2007) 21.

the three fields of law, technology and society. There is, however, an emerging body of work that analyses the relations between law and technology from a social sciences perspective. A combined 'socio-techno-legal'⁵² approach to ICT studies is developing, and it bears similarities to Lessig's idea of the New Chicago School that underlies his concept of code as law.⁵³

1. A synthetic theory of law and technology

A group of legal scholars have come out with a blog where they publicly discuss possible theories for law and technology.⁵⁴ Amongst them, Cockfield and Pridmore have proposed a 'synthetic theory of law and technology' which attempts to bring together the dialectical extremes of technological determinism and instrumentalism and, thus, combine the instrumental and substantive theories of technology.⁵⁵ They attempt to do this by putting forward a sociological approach to technology by examining 'the ways that traditional doctrinal categories of law - torts, criminal law, contracts, property and so on - interact with the specific technologies.... a law and technology theory could draw from these compartmentalized doctrinal boxes and reflect back on them with a broader perspective'.⁵⁶ Cockfield and Pridmore offer a straightforward, two-step analytical framework for handling legal problems relating to new technologies:

1. Applying traditional doctrine, consider whether technological change threatens traditional interests that the law seeks to protect; and
2. After determining that the legal interests are threatened by changes in technology, legal analysis should adopt a more contextual approach that is less deferential to traditional doctrinal approaches.

The first leg of the framework draws on instrumental theories of technology, while the second grounds itself in substantive theories. Cockfield and Pridmore explain how their theory synthesizes the tensions between determinism and instrumentalism:

... the law often prefers to look 'backwards' to promote certainty and consistency, yet at times must simultaneously move 'forward' by taking into account the effects of new technologies so that, in a seeming paradox, traditional interests will be protected.⁵⁷

Under this synthesis, when technological change undermines traditional interests that the law seeks to protect, legal analysis would become more

⁵² See Murray (n 51) 37 (who uses the term "socio-technical-legal").

⁵³ Lawrence Lessig, 'The New Chicago School' (1998) 27 *The Journal of Legal Studies* 661.

⁵⁴ Law and Technology Theory <<http://techtheory.blogspot.com/>> accessed 6 October 2009.

⁵⁵ Cockfield and Pridmore (n 11) 475-476.

⁵⁶ Cockfield and Pridmore (n 11) 478 and 496.

⁵⁷ Cockfield and Pridmore (n 11) 505.

contextual and forward-looking, and less deferential to traditional doctrine and precedents.⁵⁸

While the synthetic theory may prove useful in certain circumstances, it is quite evident that it still labours under a legal centralist mindset because it seemingly views government as the sole or primarily regulator of technology in society and that state law is the only legal order that is important in techno-social regulation.⁵⁹ It is quite evident that proposed synthetic theory is primarily aimed at and most useful to traditional state actors such as government agencies, courts and legislatures. The synthetic theory seems to neglect the important role non-state actors and plural legal orders play in determining ICT law, policy and practice. To a certain degree, the proposed synthetic theory of law and technology may be considered a softer and less obvious form of legal centralism. It is more enlightened approach to the problems of determinism and instrumentalism, but it is nonetheless instrumentalist in its origins and predisposition because it still labours under the assumption that legality and regulation belong to the sole remit of states and state laws.

2. Symbiotic regulation

A better example of a more social conception of law is Murray's idea of 'symbiotic regulation', which is 'where the best regulatory model is not one built upon an active intervention into the settled regulatory environment, the result of which is likely to be extremely disruptive, rather it is one that harnesses, as best as possible, the relationship already in place between the actors'.⁶⁰ Murray works on the premise that the process of regulation is very complex and that 'all parties in a regulatory environment continually and simultaneously act as regulator and regulatee.' Drawing on Luhmann's systems theory⁶¹ and the principles of system dynamics, Murray sees social actors not as static actors in a social vacuum but as active participants who are part of 'complex systems, layers and regulatory webs'.⁶² 'By mapping the communications variables within the system and modelling potential feedback patterns using system dynamics' a social and systems-based approach to regulating technologies is achieved.⁶³ According Murray, effective symbiotic regulation may be implemented using a three-stage process: (i) 'produce a dynamic model of the regulatory matrix surrounding the action they wish to regulate';⁶⁴ (ii) 'design a regulatory intervention

⁵⁸ Cockfield and Pridmore (n 11) 503.

⁵⁹ Cockfield and Pridmore (n 11) 384.

⁶⁰ Murray (n 51) 244.

⁶¹ See Niklas Luhmann, *Law as a Social System* (Oxford University Press, Oxford 2004).

⁶² Murray (n 51) 52 and 244.

⁶³ Murray (n 51) 249.

⁶⁴ Murray (n 51) 250.

intended to harnesses the natural communications flow by offering to the subsystems, or nodes within the matrix';⁶⁵ and (iii) 'monitor the feedback that follow this intervention'.⁶⁶

Murray's symbiotic regulation shares similar principles with Foucault's theory of governmentality which 'puts less emphasis on ideas of high constitutionalism - of Parliament, Cabinet, statute and budget - and stresses instead the importance of the active subject as the entity through which and by means power is actually exercised beyond traditional state boundaries'.⁶⁷ According Morison (who deftly applies Foucault's governmentality theory in the field of ICT and e-government),

the governmentality approach suggests power exists beyond the state and that the centres and levels of governmental power, like its objectives and techniques, are multiple and differentiated. Power is less about imposing the sovereign will and more about engaging with the many networks and alliances that make up a chain or network which translates power from one locale to another. Individuals relate to power not as simple coerced objects, but as autonomous subjects whose objectivity is shaped by their active engagement with the powers that govern them and by which they 'govern themselves'.⁶⁸

Murray himself builds on Lessig's model by redefining and distinguishing between the four modalities of regulation, namely: '(1) hierarchical control, (2) competition-based control, (3) community-based control and (4) design-based control'.⁶⁹ But what is different about symbiotic regulation is that it highlights and gives importance to the dynamic interactions between the different social actors and normative orders that Lessig mentions but does not fully flesh out in his subsequent writings. Having a more systematic and plural view of law is essential because, as Wiener points out, 'regulatory interventions operate in an ecological system... not just the ecology that some laws aim to protect but the larger interconnected web of nodes and strands into which regulation seeks to introduce change. That change is inevitably multidimensional'.⁷⁰ Murray believes that, with respect to regulating technologies, 'what is needed is an approach that takes account of the unique nature of the network environment, a need for a more cohesive, measured, prudent and non-interventionist approach'.⁷¹ What he suggests is having a more interactive and network-based approach to the study of law within the global information society. While it is true that those who subscribe

⁶⁵ Murray (n 51) 250.

⁶⁶ Murray (n 51) 251.

⁶⁷ John Morison, 'Modernising Government and the E-Government Revolution: Technologies of Government and Technologies of Democracy' in N Bamforth and P Leyland (eds), *Public Law in a Multi-Layered Constitution* (Hart Publishing, Oxford 2003) 160; see Murray (n 51) 42.

⁶⁸ Morison (n 67) 162-163.

⁶⁹ Murray (n 51) 29.

⁷⁰ Wiener (n 20) 495.

⁷¹ Murray (n 51) 54.

to Luhmann's theory of autopoiesis do not normally see eye to eye with legal pluralism researchers, what cannot be denied is that both perspectives affirm the importance of having an empirical and social scientific approach to the study of legal phenomenon.

IV. Interactivity and interlegality

What is interesting about legal pluralism is that it is not limited to the mere recognition of the existence of plural legal orders within a particular social field. As an analytical tool, it is most valuable when it is utilized as a starting point to describe the interactions amongst plural legal orders and how these interactions influence and shape society. According to Merry, 'legal pluralism not only posits the existence of multiple legal spheres, but develops hypotheses concerning the relationships between them. The existence of legal pluralism itself is of less interest than the dynamics of change and transformation'.⁷² Santos refers to this interaction or 'intersection of different legal orders' as interlegality.⁷³

Santos describes interlegality as:

the phenomenological counterpart of legal pluralism... the conception of different legal spaces superimposed, interpenetrated and mixed in our minds as much as in our actions, in occasions of qualitative leaps or sweeping crises in our life trajectories as well as in the dull routine of eventless everyday life. We live in a time of porous legality or of legal porosity, of multiple networks of legal orders forcing us to constant transitions and trespassings.⁷⁴

Santos explains that 'as a result of interaction and intersection amongst legal spaces one cannot properly speak of law and legality but rather of interlaw and interlegality'.⁷⁵ For Griffiths, 'the descriptive theory of legal pluralism is, thus, the theory of normative heterogeneity entailed by the fact that social space is normatively full rather than empty, and of the complexity of the working of norms entailed by such heterogeneity'.⁷⁶ By studying the condition of interlegality within techno-social fields, one can better understand the relations between law and technology in society. An interdisciplinary approach to the challenges of new technologies that is similarly mindful of the condition legal pluralism is really important in describing and explaining techno-social realities. According to Lessig, 'we need a more general understanding of how regulation works - one that focuses on more than the single influence of any one force such as government, norms, or the market, and instead integrates

⁷² Merry (n 34) 879.

⁷³ Boaventura de Sousa Santos, 'Law: A Map of Misreading: Toward a Postmodern Conception of Law' (1987) 14 *Journal of Law and Society* 279, 298.

⁷⁴ Santos (n 73) 297-298.

⁷⁵ Santos (n 73) 288 and 291.

⁷⁶ Griffiths (n 24) 34.

these factors into a single account'.⁷⁷ To comprehend legal pluralism in relation to ICT demands an awareness of the 'normative heterogeneity attendant upon the fact that social action always takes place in a context of multiple, overlapping "semi-autonomous social fields", which, ...is in practice a dynamic condition'.⁷⁸

The following two examples illustrate how a hybrid, socio-techno-legal approach to law and technology is useful in gaining a better understanding of the complex phenomena and issues involved.

1. FOSS communities

Free and open source software ('FOSS') communities illustrate how non-state actors take an active role in shaping law and technology in the global information society. FOSS communities are groups of software programmers that produce computer code that are licensed under FOSS licences.⁷⁹ The FOSS development and licensing process is considered a novel and innovative approach to the development of complex software systems.⁸⁰ What makes FOSS licences different from typical software licences is that the former guarantees four software freedoms: (1) the freedom to run the program; (2) the freedom to study and access the source code; (3) the freedom to redistribute; and (4) the freedom to modify.⁸¹ In contrast, commercial software licences strictly restrict what users can do with the licensed software.

While FOSS communities are primarily involved with technical matters, they are in fact transforming the information society in various, hybrid ways. FOSS is 'distinguished from other forms and practices of software production for many reasons, but most interestingly because its practitioners discuss it not simply in technical terms, but as a philosophy, a politics, a critique, a social movement, a revolution, or even a "way of life"'.⁸² Utilizing the principle of 'copyleft' in their FOSS licences, FOSS communities have subverted the traditional uses of copyright in order to make copyright serve the objectives of promoting creativity and advancing knowledge rather than impeding them.⁸³ FOSS licences 'represent a new combination (a legal hack) of copyright and contract law... which has been the object of

⁷⁷ Lessig (n 4) 121.

⁷⁸ Griffiths (n 35) 102.

⁷⁹ See Eric von Hippel and Georg von Krogh, 'Open Source Software and the "Private-Collective" Innovation Model: Issues of Organizational Science' (2003) 14 *Organization Science* 209, 209.

⁸⁰ Elliot and Scacchi (n 10) 15.

⁸¹ 'The Free Software Definition', Free Software Foundation, <<http://www.gnu.org/philosophy/free-sw.html>> accessed 19 October 2009; 'The Open Source Definition', Open Source Initiative, <<http://www.opensource.org/docs/osd>> accessed 19 October 2009.

⁸² Christopher Kelty, 'Culture's Open Sources: Software, Copyright, and Cultural Critique' (2004) 77 *Anthropological Quarterly* 499, 499.

⁸³ Von Hippel and Von Krogh (n 79) 210.

both opprobrium and advocacy'.⁸⁴ A significant amount of software today is released under FOSS licences (including much of the software on which the internet runs), and FOSS is fundamentally changing the software industry in terms of how software is generally used, made and distributed. According to Longford, 'open source coding as a social movement has emerged and grown into a self-conscious social movement since the late 1990s in direct response to the colonization of the Internet by a few monopolistic software firms'.⁸⁵ In addition, FOSS communities have resorted to both online and offline actions to successfully campaign for important issues that impact the information society such as software patents, interoperability, competition, and digital rights management ('DRM').⁸⁶ What is interesting about FOSS communities is that they are using hybrid means to advance their own community values of freedom, openness, sharing and cooperation in order to promote these techno-democratic norms within the larger society. FOSS projects are considered 'significant economic and social phenomenon'.⁸⁷ Coleman points out that '[FOSS], which is by now entrenched in the technology sector, has recently traveled far beyond this sphere in the form of artifacts, licenses, and as a broader icon for openness and collaboration. FOSS has attained a robust socio-political life as a touchstone for like-minded projects in art, law, journalism, and science'.⁸⁸ Clearly, non-state actors such as FOSS communities have a very real impact not just on how technology is controlled but also how people participate and engage with the network society.

2. Laws of DRM

Another example of the usefulness of a more plural, social and interactive conception of law, is the case of the transnational anti-DRM movement. DRM 'refers to technology-based protections that permit a rights holder to restrict a user's access to and control of digital content'.⁸⁹ Simply put, DRM acts like digital locks on information and content. In order to give copyright owners extra protection in the digital age, state governments agreed to establish an anti-circumvention regime covering both the international and national level that gives copyright owners additional technical and legal protections. The WIPO Copyright Treaties and its corollary national enactments, the US Digital Millennium Copyright Act and

⁸⁴ Kelty, (n 82) 502.

⁸⁵ Longford (n 22) 90.

⁸⁶ See Matt Ratto, "'Don't Fear the Penguins': Negotiating the Trans-local Space of Linux Development' (2005) 46 *Current Anthropology* 827; see Coleman (n 45) 512; see Fabrizio Marrella and Christopher S. Yoo, 'Is Open Source Software the New Lex Mercatoria' (2007) 47 *Virginia Journal of International Law* 807.

⁸⁷ Von Hippel and Von Krogh (n 79) 209.

⁸⁸ Coleman (n 45) 507.

⁸⁹ Declan McCullagh and Milana Homsy, 'Leave DRM Alone: A Survey of Legislative Proposals Relating to Digital Rights Management Technology and Their Problems' (2005) 2005 *Mich. St. L. Rev.* 317, 318.

the European Information Society Directive, prohibit and make it a criminal act to circumvent DRM as well as to distribute DRM circumvention technologies or any information relating to DRM circumvention.⁹⁰ As Brown explains, 'it is now illegal in many signatory states for users to circumvent [DRM] even for the purpose of exercising legitimate exemptions in copyright law'.⁹¹ As far as international and state laws are concerned, the law is very clear that no one can circumvent DRM nor communicate or distribute information about DRM.

However, despite having an international and national regime in place, the laws of DRM are not settled. Anti-circumvention legislations are inherently problematic because they impact 'many related areas of information policy, including copyright and fair use, software code as speech, software reverse engineering, and global data flows'.⁹² According to an Electronic Frontier Foundation ('EFF') report, 'Years of experience with the 'anti-circumvention' provisions of the DMCA demonstrate that the statute reaches too far, chilling a wide variety of legitimate activities in ways Congress did not intend... hindering the legitimate activities of innovators, researchers, the press, and the public at large'.⁹³ DRM has also been criticized for its propensity to 'curb fair use, limit access to material that has passed out of copyright and into the public domain, work in consumer-unfriendly ways, and require disclosure of personal information that could raise privacy concerns'.⁹⁴ Because of the many objections to and problems related to DRM (e.g., it adversely affects 'freedom of expression, privacy, competition law, academic research and consumer protection'),⁹⁵ different non-state actors have contested, subverted and even defied the techno-legal regime of anti-circumvention in multiple and hybrid ways. Average consumers refuse to purchase content with DRM and have publicly decried the presence of DRM on digital content and technologies.⁹⁶ Software developer and hacker communities regularly crack DRM code and make their technological fixes available to the public online.⁹⁷ There is an increasing number

⁹⁰ WIPO Copyright Treaty ("WCT"), adopted on 20 December 1996; similar anti-circumvention provisions are found in the World Performance and Phonograms Treaty ("WPPT"); together the WCT and the WPPT are referred as the WIPO Internet Treaties; see Urs Gasser, 'Legal Frameworks and Technological Protection of Digital Content: Moving Forward towards a Best Practice Model' (2006-2007) 17 *Fordham Intell. Prop. Media & Ent. L.J.* 39.

⁹¹ Ian Brown, 'The Evolution of Anti-Circumvention Law' (2006) 20 *International Review of Law, Computers & Technology* 239, 240.

⁹² Kristin Eschenfelder and Anuj Desai, 'Software as Protest: The Unexpected Resiliency of U.S.-Based DeCSS Posting and Linking' (2004) 20 *The Information Society* 101, 102.

⁹³ Electronic Frontier Foundation, 'Unintended Consequences: 10 Years under the DMCA' 1 <<http://www.eff.org/wp/unintended-consequences-ten-years-under-dmca>> 14 accessed 19 October 2009.

⁹⁴ McCullagh and Homsy (n 89) 319; Longford (n 22) 76.

⁹⁵ Brown (n 91) 240.

⁹⁶ Longford (n 22) 81-82.

⁹⁷ McCullagh and Homsy (n 89) 318; Patricia Akester and R Akester, 'Digital rights management in the 21st century' (2006) 28 *E.I.P.R.* 159, 165; Longford (n 22) 83; Christopher Soghoian, 'Caveat Vendor:

of 'organized groups of hackers and consumers who, through their everyday practices of new media consumption and skilled use of technology,⁹⁸ are avoiding and defeating the anti-circumvention regime. Groups such as the EFF and the Free Software Foundation continue to fight attempts to broaden anti-circumvention laws and also lobby for legislative changes to make anti-circumvention laws less broad and restrictive in their application.⁹⁹ These protests informally make up a transnational anti-DRM movement that has been relatively successful in countering the negative effects of the techno-legal regime of DRM. The beauty with this type of internet-led and based campaigning is that not only does it connect disparate people and causes in varied and novel ways but it produces 'new forms of political organization and action'.¹⁰⁰

Despite the fact that content companies have 'the law on their side', copyright owners are generally abandoning the use of DRM on their digital content due in part to these distributed but concerted actions against DRM.¹⁰¹ The example of the anti-DRM movement shows that contrary to instrumentalist and legal centralists beliefs, state law is not the sole nor the most important factor that influences people's behaviours. As Brown recounts:

Consumers have also shown they are extremely unhappy with [DRM] that restrict previously common uses of products such as format-shifting music.... The Internet has made consumer discussion of and campaigning over [DRM] much easier and hence potentially more damaging to companies that release works using them.

Without acceptance by rightsholders of the balance that is required by copyright laws, it is likely that anti-circumvention laws will be brought into further disrepute, with collateral damage to the public respect shown to copyright law in general. Neither governments nor rightsholders should welcome this prospect.¹⁰²

Evidently, the legitimacy and the obligatory nature of state law also depends on its acceptability. As Wu says, 'A law's meaning and effects, success or failure, seem ever less a function of drafting or enforcement. Rather, the question is what forces - social, economic,

Technologically Protected Subsidized Goods and the Customers Who Hack Them' (2007-2008) 6 Nw. J. Tech. & Intell. Prop. 46, 72.

⁹⁸ Longford (n 22) 81.

⁹⁹ McCullagh and Homsí (n 89) 322-324; see Brown (n 91) 253-254; see Patricia Akester, 'Technological accommodation of conflicts between freedom of expression and DRM: the first empirical assessment', Centre for Intellectual Property and Information Law, University of Cambridge, 5 May 2009.

¹⁰⁰ Longford and Patten (n 4) 14; see Noveck (n 5) 22.

¹⁰¹ EFF (n 93); 7; McCullagh and Homsí (n 89) 326; Torrent Freak, 'DRM is Dead, RIAA Says' <<http://torrentfreak.com/drm-is-dead-riaa-says-090719/>> accessed 6 October 2009.

¹⁰² Brown (n 91) 255-256.

technological or otherwise - may be recruited for or against the cause'.¹⁰³ In order to reckon the legitimacy and acceptability of law in general, one must indeed study the interaction amongst diverse state and non-state actors and the plural legal orders that influence their actions.

V. Interdisciplinarity and the laws of the network society

Having an interdisciplinary orientation or mindset is essential to a deeper and fuller understanding of plural legality within the information society. The study of law in the digital age needs to overcome the deeply-ingrained legal centralist beliefs that the state is the sole and primarily regulator in society and that the concept of law is limited to state laws. Adopting a broader and more social science perspective to legal studies makes a lot of sense for legal researchers and scholars, especially those involved in ICT studies. Conceiving of law as including but going beyond state law opens up and reveals the complex relations and messy realities of social life in the digital networked environment. Clearly, as seen in the above cases of the FOSS communities and the transnational anti-DRM movement, the relationship between law and technology cannot be reduced to being a mere issue of regulatability. The interactions between law and ICT are complex, multiple and plural, and they involve the active participation of both state and non-state actors who equally act as both regulators and regulatees at the same time.¹⁰⁴ The laws of the inter-networked society, therefore, are less interested about regulating technologies per se and are more concerned with expanding governance and increasing participation locally as well as globally. Legal pluralism is an important element in this interdisciplinary approach to law and ICT because it offers a more dynamic, empirically-grounded, and open-ended way to analyse socio-techno-legal phenomena. As Santos puts it, 'socio-legal life always involves interlegality'.¹⁰⁵ A more plural, social and interactive conception of law means understanding law in both an open and an inclusive sense - that law does not only influence people's behaviours but it similarly arises from and may be found in the complex interactions amongst diverse social actors across multiple and overlapping techno-social fields and networks.

¹⁰³ Tim Wu, 'When Code Isn't Law' (2003) 89 Virginia Law Review 679, 745.

¹⁰⁴ Murray (n 51) 250.

¹⁰⁵ Santos (n 73) 291.

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