

# Regulating technology: code is not law

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## 1. Introduction

The title of the symposium 'Code as Code' which took place in 2004 in Amsterdam was based on the book *Code and other Laws of Cyberspace* of Lawrence Lessig of 1999.<sup>2</sup> Lessig's argument is that in cyberspace not the rule of law is the prevailing instrument of regulation, but what he calls 'architecture': the commands that are imbedded in the communication protocols of the Internet and the application software on top of it. Human behaviour is steered by this invisible hand. Lessig often contrasts this form of regulation as West Code versus (traditional) East Code regulation. Very much related to this concept of software/hardware architecture as a substitute for regulation by the rule of law is the concept of cyberspace. This is a virtual *agora* as compared to the Greek political agora, but it lacks spatial reality. It is a logical space that replaces physical space. Atoms will be replaced by bits. Cyberspace requires another form of non spatial regulation. It cannot be based on physical territory, physical objects and physical persons. It is cyber rule for cyberspace citizens.<sup>3</sup>

I will not try in the following to match these, in my view, metaphorical statements. What I will try, however, is to show that much of the cyberspace argument can be retraced to the general problem of regulating technology, that is to say: regulating the side effects of technology on human society by means of law based rules and by technical means. To do so I will say a few words on the nature of technology and the economic theory of regulation in general. My argument is that any technology, not only by its 'architecture' but also by the social function society attributes to technical innovations, *eo ipso* is a normative concept. In the second part of this essay I will consider the question whether the information and communication technology distinguishes itself from technology in general in the sense that it poses new challenges to regulation.

To begin I will clarify two terms. By 'code' I refer to computer software/hardware only. I sometimes will use Code with a capital or between quotation marks to discuss its presupposed behavioural effects on human conduct. By 'regulation' I mean the rules that are recognized in a given society as law. If we think of public law (constitutional, criminal and administrative law) it derives from some sort of Authority that resembles the Hobbesian Sovereign; it is the starting point of the theory of Hart. If we think of private law we may consider a much less rigid concept as law, in the sense of Fuller which seeks to anchor the concept of the rule of law in principles of fairness and due process.<sup>4</sup> Competition law is somewhere in between because it glorifies the idea of a free competitive market on which individuals and organizations enter into free contracts ruled by private law, but intervenes with public law instruments when the market fails because players on the market threaten to abuse dominant positions which distort the freedom of choice of other players or consumers in the market. I make the distinction between public and private law because, in my view, much of the

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<sup>2</sup> Lawrence Lessig *Code and other Laws of Cyberspace*, New York: Basic Books 1999.

<sup>3</sup> William J. Mitchell, *City of Bits, Space, Place and the Infobahn*, Cambridge Massachusetts/London England: MIT Press 1995.

<sup>4</sup> I refer to the article of Lodewijk Asscher in this book.

discussion about the regulation of cyberspace tends to confuse the two different types of regulation.

Part I: Regulating technology in general.

## 2. Technology

Generally speaking, we distinguish three theories about technology: determinism, voluntarism and social construction.

### 2.1 Determinism

In this view history is driven by technology and technology determines the changes in society. In his classical article from 1997 'Do Machines Make History' Robert Heilbroner traced the origins of this theory back to a phrase of Marx in *The Poverty of Philosophy* "The hand-mill gives you society with the feudal lord; the steam-mill society with the industrial capitalist". Heilbroner defined the core of determinism in the following question: "If we make the assumption that the hand-mill does 'give' us feudalism and the steam-mill capitalism, this places technological change in the position of the prime mover of social history." But he added a question which is difficult to answer: "Can we then explain the 'laws of motion' of technology itself? Or, to put the question less grandly, can we explain why technology evolves in the sequence it does?"<sup>5</sup> Not being a determinist myself, my answer to that second question is: we cannot, because it fails to explain why some inventions are made and others not, why some innovations turn out to be a social and economical success and others not. 'Cyberspace thinking', in my opinion stems from deterministic theories about the role of technology in history. ICT, in this view, has changed the whole shape and organization of society. It drives us in a new direction. Its Code takes over social command.

### 2.2 Voluntarism

Voluntarism is situated at the other end of the spectrum. In this view technology is a neutral concept. A technique is developed because human beings have chosen to do so. It is human choice and human choice only that shapes technology.

Deliberate choice is also part of a centralized industrial State policy, as it has become popular in France over the years. The introduction of Minitel is an interesting case in point. Minitel was introduced in France in 1981 by a well prepared decision of the government. The basis of the decision was a report 'The computerization of society: a report to the President of France'. By virtue of the decision of the government all inhabitants in France received in their home a Minitel terminal, so called host computers. The system was designed as a system to retrieve individually information from a central information centre. Initially the system was intended at replacing the voluminous paper telephone guides, which were abolished at the same time. Additionally it enabled France Telecom to offer electronic services to the telephone subscribers. Already in 1982 the system was hacked with the effect that horizontal communication between the subscribers became possible, which changed the social function of the system fundamentally. With arrival of the IP standard of Internet, the system became obsolete all together.

I am not an adherent of this theoretical approach either as will follow from the above presentation of the Minitel case. Human choice plays an important role in the development of technology but only after a technology has socially been accepted. The origin of an innovation that may be the first step towards a new technology is a much more complex process than the

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<sup>5</sup> Robert L. Heilbroner, 'Do Machines Make History?', in: Merrit Roe Smith & Leo Marx (eds.) *Does Technology drive History?* Cambridge Massachusetts/London England: MIT Press 1994, 53-65.

act of will of some individuals in the board rooms of companies or the offices of the President of France.

### 2.3 Social construction

In this view technologies are not just technique, but form part of a social-technical system that is the result of the acceptance of a technology by society. Let me follow the statement of this theory by Wiebe Bijker and John Law<sup>6</sup>: “Technologies are subject to contingency as they are passed from figurative hand to hand, and are shaped and reshaped. Sometimes they disappear altogether: no one felt moved, or was obliged to pass them on. At other times they take novel forms, or are subverted by users to be employed in ways quite different from those for which they were originally intended.” They discern four aspects to understand this complex interaction:

- Technologies are contingent in that they are the result of technical, social and historical contingencies. There is no ‘grand plan’ in history.
- Technologies are born out of conflict, difference, or resistance. This is the interplay between inventors, entrepreneurs, customers and social circumstances. Things might have been otherwise if the resulting force out of this confrontation would have pointed in another direction.
- The refusal to accept a new technology does not result in an overt conflict between customers and producers. The suppliers who want to implement a new technology have to invent a strategy. Also the government may try to interfere with a political or legal strategy. The technology that wins is the result of all these strategies.
- “Technology is stabilized if and only if the heterogeneous relations in which it is implicated, and of which it forms a part, are themselves stabilized.”

The theory of social construction does not offer us a tool to predict what is going to happen, but that does neither of the other theories. It presents us, however, with a much more realistic picture of what happens when a new technology obtains a firm grip on social developments. If we take telecommunications as an example the history of the radio, the telephone and the Internet fairly well demonstrate the four aspects mentioned here. In all cases it was society that finally determined its shape and direction of development. Bell was looking for an improvement of the telegraph. Society used his invention initially as the extension of the telegraph service (people did not have to go to the post office physically to send a telegram, but could communicate the text by phone to the telegraphist in the office). It was its daily use in society that gave it its finale form as a device for private speech, first as a business application, later as a means of private communications. To enrol the service a universal service was invented which created an entitlement of the citizens to have access to at any geographical place against an affordable price.

As soon as a technology takes hold on society, society reacts with ‘new world’ mythology. Regardless if we take the combustion engine, the telegraph, the telephone or Internet, in all those cases the books of history provide us with beautiful pictures how the contemporary world responded by imaging a futuristic society in which everything from now on would be different. The telegraph was heralded as the eighth wonder of the world.<sup>7</sup> The perception of their environment by the early radio amateurs resembled that of the first inhabitants of the Internet. Amateur radio created in the ‘Radio Days’ as the period in the United States is called the first cyberspace with individual access. Frank Collin wrote in the *Wireless Man* (1912): “On every fair night after dinner time and when, let us hope, the lessons for the next day have

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<sup>6</sup> Wiebe Bijker & John Law (eds.) *Shaping Technology/Building Society, Studies in sociotechnical Change*, Cambridge Massachusetts/London England: The MIT Press 1992, 1-19.

<sup>7</sup> Tom Standage *The Victorian Internet*, London: Weidenfeld & Nicolson 1998.

been prepared, the entire country becomes a vast whispering gallery.” And: ”An audience of a hundred thousand boys all over the United States may be addressed almost every evening by wireless telegraph.”<sup>8</sup> These futuristic statements could be well applied to the ‘Whispering Gallery’ of chatting traffic on the Internet that starts after school.

When a technology has reached a full diffusion it becomes a social system, creating new ways of living and new jobs: telephone operators, electricians, plumbers.<sup>9</sup> Without exaggerating, one could say that as long as a technology has not created its ‘plumbers’ it has not reached full social acceptance. In the fifties of the last century car owners were still interested in what took place under the hood of their cars and enjoyed discussing engine troubles on birthday parties. That is all over now. It has become a matter for ‘car plumbers’. People discussed computers in the eighties and Internet in the nineties, being proud of showing their new acquired skills to friends and parents not yet experienced in the use of the new media. That is nearly over now. Information technology is only on the brink of reaching the stage of having ‘ICT plumbers’ around.

All socially accepted technologies exclude alternatives of human behaviour: In this sense every technology in it self is a moral/political choice of society. Society selected a certain technology because it suited most the needs of the time. But as has been stated above: things could have been different and may have been better. The free market economy has preferred to create a technology which rewards individual mobility because it considers individual freedom the highest value. The Soviet society did not. It put all its stakes on the development of a steel industry. It discouraged the individual mobility of its citizens. Both societies had different opinions what the good life is and developed technologies in order to reach it.

### 3. Unforeseen side and revenge effects of technology

When a new product is designed the object of the innovative designer is to reach a new stage of development in an existing technology or give a new turn to an existing technology which opens new avenues of development. His or her motive is focused on the function of the technology at hand. When a technology reaches a vast diffusion it affects society in a way which was not part of the design. The combustion engine caused grave environmental damages and high social traffic risks. Chemical industry produces to the benefit of society but also causes heavy pollution. There are not only side effects but also what Edward Tenner has called ‘revenge effects’. “Revenge effects happen because new structures, devices, and organisms react with new real people in real situations we did not foresee.”<sup>10</sup> One of the revenge effects of ICT is that it enables a much more efficient movement of goods and people and money around the world. Automated reservation systems and financial credit card systems have caused an explosion of air traffic. The ‘clean’ and ‘silent’ ICT technology thus contributed considerably to the air and noise pollution which troubles now a days the private life of people living in large urban areas. ‘Bits’ did not replace ‘atoms’ but helped to produce new ‘atoms’ which are not good for a healthy life. The exhaustion of energy resources as a consequence of the increasing traffic will be one of the mayor problems to solve over the next forty years. The article of Ronald Leenes and Bert-Jaap Koops in this book shows that ICT causes increasing side and revenge effects on privacy. Electronic trails of human behaviour in combination with strong computing in data bases have created a total new environment to control people and goods which never has existed before. It even questions whether ‘privacy’

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<sup>8</sup> Cited by S.J. Douglas, *Inventing American Broadcasting 1899-1922*, Baltimore: The John Hopkins University Press 1989, 198 and 205.

<sup>9</sup> See for the telephone Claude S. Fischer, *America Calling A social History of the Telephone to 1940*, Berkeley, Los Angeles, Oxford: The California Press 1992.

<sup>10</sup> Edward Tenner, *Why Things bite back*, London: The Fourth Estate 1997, 9.

in this new environment is still an enforceable right, not to say a value to strive for if it concerns the control on the storage and distribution of personal data.

As soon as a technology made its way in society, society reacts slowly by starting to regulate the side effects. Also competition issues (in relation to the battle of standards) become an issue. Revenge effects are more difficult to regulate, because they relate to political choices of society to keep using to the same extent the benefits of a technology that causes them.

I will now turn to regulation.

#### 4. Why regulate?

##### 4.1 Types of public regulation

Economic theory offers us a framework how to deal with the question of (public) regulation.<sup>11</sup> The government ought to interfere in the free market when there are ‘market failures’ such as abuse of dominant behaviour of a market party, (negative) externalities (such as pollution) and information inadequacies such as the lack of information on the side of the consumer to make a well informed and free choice in the market. These are economic goals. Other type of interventions are non economic interventions for paternalistic reasons: society may require the production of certain public good although there is no market for it. The government may use different instruments to achieve its goal to redress the market failure. The range of available instruments runs from command and control (public law regulation *strictu sensu*), to self regulation and rights and liabilities (I will deal with that in the paragraph on private law) and financial instruments (tax, subsidies; I will not deal with these in this essay). Confining myself to the first, the range of possible interventions can be shown in the following table.<sup>12</sup> The table explains that the government (or an independent Regulatory Body for that matter) may limit its intervention to prescribing information duties to remove information inadequacies. For example it requires the manufacturer or the service provider to warn for certain risks when the product or service is not used properly. At the other side of the scale is a prior license system, such as in use with the registration of medicines. It may also (whether or not in combination with a license system) require certain standards of performance. So it may require that a company which manufactures chemicals should meet a maximum of pollution units in a certain time lapse (target), or should meet a day to day performance in any production unit it uses by setting standards of behaviour (such as: when starting such and such process in the laboratory doors ought to be closed and ventilators put on). The more far going intervention is the prescription of specifications of the product. This type of intervention can be seen as a general license: when the product fulfils the specifications it is allowed to be marketed without further government control. Specification seems to me the heart of the ‘code’ problem. General technical design and standards create an ‘architecture’ of the product which determines the possibilities of the use of a product. More specific: inbuilt restrictions in the technical design may prevent certain product performances or restrict certain (prohibited) uses of the product by the customer. Motorcycles may be designed to have maximum cylinder capacity in their motors to prevent them to run faster than the maximum speed limit on the road. Products may be so designed as to prevent the customer to get ‘inside’ the product (‘to reverse engineer’ the product).

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<sup>11</sup> Anthony I. Ogus, *Regulation, Legal Form and Economic Theory*, Oxford: Oxford University Press (Clarendon Law Series) 1994; Robert Baldwin & Martin Cave, *Understanding Regulation, Theory, Strategy and Practice*, Oxford: Oxford University Press 1999.

<sup>12</sup> I take this table from Ogus o.c. (Fig. 8.1 on page 151). He draws this table up to explain standard setting, but I think it can be used to explain public law intervention in general.

Degree of Intervention		Low	High
Information	Standards		Prior Consent
	Target	Performance Specification	

#### 4.2 Means of enforcement of public law

Public law that has to be enforced should pass some sort of validity test (generally this is a rule of recognition test, but, in hard cases, also a more content or quality orientated test may be put into the picture).<sup>13</sup> If it meets the standards of validity it will be enforced by legal means such as criminal sanctions or a way of administrative enforcement. Quiet often technical means are used. In traffic for example speed bumps, traffic lights, automatic cameras and similar devices are used to influence behaviour of the road users. In administrative law the number of automated decisions that influence our life, increases every day. People who are caught by automated policemen or affected by automated decisions, generally may seek redress in Court if they disagree with the content of the decision or the procedural aspects of the decision making. All this has become part of the routine of the rule of law in our democracies. Of course this did not go without discussion, because the technical ‘architecture’ of the law may put up barriers to access to Court, but it forms part of our discourse on the proper adjudication of the law in modern societies.<sup>14</sup>

#### 4.3 Private law regulation

Many of the effects of technology are regulated by private law. ‘Regulating’ may sound confusing because it is not a deliberate process to steer societal processes in advance. It is rather through case law developed by the Courts on the basis of general principles of private (common) law and contractual arrangements invented by private parties that *ex post* the effects of a certain technology are regulated for the future. Later on the legislator may

<sup>13</sup> See further the article of Lodewijk Asscher in this book.

<sup>14</sup> Lessig o.c. seems to be aware of this point, but treats it in a rather obscure way in the Appendix to Code as Code.

intervene by defining the boundaries of liability or contractual freedom or by creating new instruments of public law to cope with certain risks in advance. We may observe this 'regulation cycle' with any occurrence of a new technology: Reactions by the Courts trying to apply known general principles of Law to new technical phenomena are followed by interventions of Public Authorities with public law instruments (according to the choices available, described in paragraph 4.1 and 4.2).

The 'regulation' instruments of private law are 'tort law', 'property' and 'contractual law'. Let us briefly have a look at them.

Negative externalities may be absorbed (internalized) by the law on private responsibility. A whole school of economic theorists, starting with Coase, developed economic theories how externalities of products or services may be regulated by tort liability. The development of the law on product liability is one of the mayor contributions of private law to the regulating of the negative side effects of industrial society. It offers also a clear example of the 'regulation cycle' mentioned above. Civil Courts started to elaborate new concepts of burden of proof and fault liability which put manufacturers of products more and more to a test of strict liability. In Europe the European legislator adopted in the Eighties a Directive on Product Liability which more or less incorporated the case law that was developed by the Courts in the Member States of the European Community.<sup>15</sup> Public Law followed with interventions to protect the safety of products in advance.

Property rights form a tool to obtain market power in new technology markets. At the start of any new communication technology<sup>16</sup> battles were fought over patents on key inventions or attempts were made to appropriate standards of interoperability and access technology. In the early history of the development of radio communications Marconi tried to monopolize the use of radio frequencies by imposing the condition on the users of Marconi transmitters to communicate only with users of the same equipment. So effective was this control (to the dissatisfaction of especially the Germans and the French, who used different standards), that the Berlin Radio Conferences of 1903 and 1906 introduced the fundamental obligation of international telecommunications law, that all users of the spectrum ought to communicate with each other, regardless the technology they use. This established the obligation of interoperability which still is one of the cornerstones of the proper functioning of a communications system.<sup>17</sup> The tension between standardization and appropriation with the creation of the Internet and the Domain Service System has been analyzed by Milton Mueller. It shows the same patterns as the early history of radio communications, before the radio spectrum became the first open cyber space on earth.<sup>18</sup> There is a shift to the dominance of the conditional access platforms as the Microsoft cases in the United States and Europe have shown. Competition law may in certain cases impose access duties on owners of access systems. Much of the 'Code as Code' discussion focuses on property rights and open standards, but it should be seen in the light of the general problem of interoperability of communications systems.

Finally we have contractual arrangements which come closest to public law regulation, the so called 'Self regulation'. Self regulation is a general response of industry to avoid the more severe interventions by the state that are shown in the table above. It takes the legal form of an

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<sup>15</sup> See for an overview William C. Hoffman & Susanne Hill-Arning, *Guide to Product Liability in Europe, The New Strict Product Liability Laws, Pre-existing Remedies, Procedure and Costs in the European Union and the European Free Trade Association*, Deventer: Kluwer Law and Taxation Publishers 1994.

<sup>16</sup> Not only communications technology, but I will restrict myself to the latter.

<sup>17</sup> Douglas o.c. 119-120, supra note 8; C.A. Coddington, *The International Telecommunications Union*, Leiden: Brill 1952, 55, 84.

<sup>18</sup> Milton L. Mueller, *Ruling the Root, Internet governance and the taming of Cyberspace*: Cambridge/Massachusetts/London: The MIT Press 2002, especially chapter 12 which also draws the historical parallel with radio spectrum management.

agreement between members of an industry branch to deal with the proper use of services and products to avoid or diminish negative side effects of the use of the services or products manufactured by the branch. Well known examples are advertising codes for smoking in which the industry accepted to put warnings for health risks on the packages of cigarettes. Discussions on proper and justified self regulation circle around the themes addressed by the quality standards of Fuller. They have to do with procedural and representational save guards which should see to the protection of values that are also protected by democratic public law regulation. Part of the 'Code as Code' discussion bears upon the notion of self regulation and the advantages and disadvantages of using this substitute for public law regulation.

## PART II: Regulating information and communications technology

### 5.1 What is the difference?

Much of what has been said about technology in general applies to ICT.

The needs of society transformed the mainframe computer into a personal computer. In the first stage it was but a means to process words, an automated heir of the typewriter. Later it became a universal multimedia personal communication device connected to the net. The Internet developed from a closed network for military purposes through a university network for the scientific community towards an open public network. The similarities with the telegraph designed as a system for military command are striking. It is the open democratic society which in the end gave the social shape of the communication technology as we use it today.

The standardization process, like elsewhere, is an interplay between market and political forces, as has been demonstrated by Fisher in this book in his comparison between the coming about of the GSM standard for mobile telephony in Europe and the development of Internet standards. The striking difference between the fixed telephony and Internet is that the first standard was shaped by companies dominated by the State which fitted very well into the pyramid structure of the sovereign state, while the latter is the product of negotiating process of self regulation. The real worries about design and standardization on the Internet therefore are about dominance and uncompetitive behaviour by some mayor players in the market. The regulating of the side effects of this technology is only under way, although we can apply our scheme of regulation on the attempts to impose information and performance obligations (such as privacy statements and warnings). In the discussions that took place in July 2004 on the seminar in Amsterdam there was much worry about the lack of consumer choice and the lock in effects of ITC. Further thinking on liability schemes and new forms of compulsory technology assessment on possible negative effects were suggested. The use of the instrument for required product specifications to protect social or personal damage such as cryptography is another example of this trend.

Commercial traffic starts to flourish on the Internet. It uses all sorts of security technology. It may replace many of the traditional tools of copyright by Digital Rights Management Systems. Many copyright lawyers are troubled by this development, others see a necessary adjustment of market failures with which traditional copyright can no longer cope, as follows from the contribution of Helberger. Rather than worrying about the erosion of copyright, we should look for new business models for the exploitation of information in which copyright is one of the instruments alongside other (contractual-technical) tools.

### 5.2 Some misunderstandings

Why then this discussion about code being 'Code'? Let me try to sort out some of the misunderstandings that in my view cloud the debate.

The first misunderstanding is the often metaphorical or rhetorical use of the term 'Code'. The fact that code consists of a sequence of commands does not bestow it with any status of law. The fact that code uses a prescriptive language does not make it a set of normative commands in the sense of Hart. Prescriptive languages resemble each other very much. The language of a leaflet that instructs me how to use a sawing machine is in many respects identical to the language of a catholic catechism.<sup>19</sup> But they differ fundamentally because the former is an instruction of fact based on the sum total of all gathered experiences how to use a sawing machine prudently, whereas the latter contains a body of value judgements about how the Roman Catholic Church thinks I should behave in moral difficult situations.<sup>20</sup> The imperatives of code do not give it any authority nor is there any reason to treat them as value judgements or as 'ought statements'. There is no ground to call them therefore 'Code', not to mention the confusing mismatch of imperatives of a different nature in the sentence 'East Code versus 'West Code'.<sup>21</sup>

The second misunderstanding is the metaphorical use of the term 'cyberspace'. The fact that cyberspace lacks spatiality but is a logical space does not make it a different 'space' to regulate by different 'laws'. Law making is a logical process that is based on the intentionality of the human mind. We create a logical symbolic world on top of the raw material ('the atoms'), which is not less virtual than cyberspace.<sup>22</sup> It does not make any difference whether these symbolic and logical labels that constitute legal relationships between people or institutions are construed in a spatial world of atoms or by a bits stream on the Internet. Our system of addresses in the spatial world is as much a logical system as the system of addresses on a hard disc in cyber space, although the latter lacks geographical spatiality. In both cases we need the proper logical system 'to find' the address. What matters is the legal relation that results between people of flesh and blood who are addressed in the real world or on the Internet and, for example, enter into a contract with rights and obligations or, for example, are being insulted by certain public communications that they see on a weblog. It does not matter whether we use a voice, write on paper or construct a set of symbolic presentations on a computer screen to be clicked at with a mouse. What matters is what sort of communication takes place between people or the technical intermediaries for which they are responsible. The third misunderstanding is that standard setting and property issues related to code are taken for issues of 'Code'. 'Open Source' thus becomes the password for the proper regulation of the Internet. How interoperability standards develop on the Internet<sup>23</sup> and whether the sources of code available on the Internet are 'open', however, have nothing to do with regulation of the Internet. These are standards and property battles similar to those that took place with the development of any new technology, as I tried to explain in part I of this essay. They are the result of a mixture of market forces and informal self regulation. Whether a source code is open has nothing to do with the question whether the regulation issued by the government contains 'open norms' or not.

The fourth misunderstanding is that the Internet is treated as a different territory withdrawn from State territory. In his early publication on the Lex Informatica Joel Reidenberg<sup>24</sup>

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<sup>19</sup> See R.M. Hare, *The Language of Morals*, Oxford: Oxford University Paperback 1964.

<sup>20</sup> That I as an atheist, consider them as a collection of empirical errors about reality does not make it different, because the church still thinks they contain the best moral rules how to act properly.

<sup>21</sup> Lessig o.c., p. 5 takes the metaphor 'Code is Law' from Mitchell o.c., page 111. Mitchell's example on that page has nothing to do with law, but with the stupidity of the software of an ATM cash machine at the wall of a bank in the street, which goes through the programmed identification procedure and throws out the inserted credit card if its holder does not answer rightly to one of the standard questions on the touch screen.

<sup>22</sup> See John R. Searle, *The Construction of Social Reality*, New York: The Free Press 1995.

<sup>23</sup> See the contribution of Hans Fisher in this book.

<sup>24</sup> Joel Reidenberg, 'Lex Informatica: The Formulation of Information Policy Rules Through Technology', *Texas Law Review* Volume 76, Number 3, February 1998, 554-584.

juxtaposes Legal Regulation and Lex Informatica as two different tools: the first being 'Law' and designated for physical territory, the second being 'architectural standards' and designated for the network. The Internet is a network of networks linked to many national territories. This makes the application of national law and national jurisdiction much more complex than the trade relations in the physical spatial world, but not different in nature from the world of security bonds of international trade or international telephone calls. As far as trade is concerned the international Lex Mercatoria as it was formed in the physical world of international trade on the basis of trade customs, general conditions and agreements, develops as easy on the Internet as in the traditional physical world. So, as one of the participants of the seminar in July 2004 in Amsterdam remarked: let's get to the real issues.

## 6. There are differences (summary of the conclusions of the Seminar)

### 6.1 The role of technique

It is clear that technical devices (in the form of software) which enable the formation of legal relationships are increasingly important. Electronic commerce needs code to secure financial transactions, to protect the secrecy of contracts, to verify identities of parties and to complete contracts. Contractual law cannot work any more without the help of these tools.

Enforcement of law is hardly conceivable without the enforcement on national territories.

This means that we have to carve out national territories on the Internet by means of software. Code as a technical means to enforce the law becomes increasingly important. In this respect I feel much more comfortable with Reidenberg's second statement on the subject with reference to the Yahoo case in France that we may enforce national decisions on national territories by preventing access to certain information from certain access points on servers located on national territory.<sup>25</sup>

This does not make code 'law' but it makes code 'a hand of the law'.

### 6.2 The lack of Authority

The lack of authority on the net causes all sorts of problems especially in fields that should not be left to self regulation by stakeholders with their own interest, but should rather be covered by a more democratic form of regulation by public law. The lack of authority comes in two ways.

First, who owns or has authority over the principal resources of the Internet: the domain names and the root?<sup>26</sup> There is much self regulating and mutual agreement involved in the governance of the Internet, but by the end of the day (applying the test of Hart) I'm afraid that the final authority is the United States.

Second, many subjects that touch on constitutional values such as freedom of expression, privacy and property are left to self regulation, whereas they are qualified to be regulated by an accessible and foreseeable public law. I must add that self regulation has been used on a large scale by the American Film Industry in the thirties of our last century in order to produce a morality proof product for a world market (and, by the way, to propagate abroad puritan moral values).<sup>27</sup> But this is not an example to follow.

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<sup>25</sup> Joel Reidenberg, 'State and Internet Enforcement', Univ. Ottawa L. Tech. J 2004. I think the consequence of this article is that he no longer maintains the point of view that the Internet is regulated by architecture only. We may use the architecture of the net to reach our legal aims, but that is a different story. I may use the architecture of our house to keep the criminals outside but I have never thought of my house as a Criminal Code in disguise.

<sup>26</sup> See Milton L. Mueller, *supra* note 18.

<sup>27</sup> Gregory D. Black, *Hollywood censored, Morality Codes, Catholics, and the Movies*, Cambridge USA: Cambridge University Press 1994.

The international public regulation of the Internet of topics that ought to be regulated by public law remains a complex problem to be solved. So freedom of expression, privacy and property were the main concerns of the participants of the seminar. The interesting thing of the discussion was that nobody questioned the content of the first freedom, but started to analyze the essentials of privacy and property right in information.

### 6.3 Fundamental rights and the Internet

As to freedom of expression the conclusion was that, if we allow code as a tool of self regulation, filtering in advance undesirable images and words from the message, we would replace the idea of the *nulla crimen sine lege previa* (central as a concept of the freedom of speech that the citizen should have a clear picture in advance of what is allowed and what not) by the concept of prevention as it was developed by Jeremy Bentham and we finally end up in a society of spies. This means that the Internet challenges us to rethink the concepts of gate keeping and open access which we apply to the traditional mass media.

The concept of privacy the Seminar did not succeed in defining satisfactorily, the more so because the US approach differs fundamentally from Europe. However there was an understanding that code could be a helpful tool to enhance the protection of privacy in a society in which the State and Business have an increasing need for personal data for purposes of social control and commercial use. Code could help to create a multiplicity of identities to protect the individual self. This influences deeply our idea of public citizenship. From the 'unmasked' citizen who participates in public functions we become a player of different roles 'masked' by aliases. Looking to the Law of Data Protection there was a common understanding that the existing legislation was unable to regulate the myriad of electronic trails, and that we were in need of new concepts.

A property right in information seems to transform from an alienable object into a limited access right to information. Code is a strong tool (for example with a Digital Right Management System) to facilitate this development. This brings the issue of consumer protection on the table.

### 7. Conclusion

Code is not law, but a tool that can be helpful to shape and enforce the law on Internet. In doing so we need all our legal skills to safeguard the constitutional values of a democratic society. De Sola Pool thought that the new communications technologies are 'technologies of freedom'.<sup>28</sup> This is but partly true. We know that each step in the advancement of communications technology created new freedoms but that each step at the same time created new possibilities of control. The Internet is a medium which enabled maximum access and maximum individual expression but it enabled also maximum control over individual behaviour. The stretched out arms of the World Wide Web take the user in a fond embrace as soon as he has plunged into free cyberspace.

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<sup>28</sup> Ithiel de Sola Pool, *Technologies of Freedom, On free speech in an electronic age*, Cambridge, Massachusetts and London: The Belknap Press of Harvard University Press 1983.

